

# Evaluation of the ACORN Parenting Program

Waves 1-11 Final Report



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# Executive Summary

*Maternal mental illness is common, often involving co-morbidities and having profound effects on mothers, children, and families. Maternal mental illness is often undiagnosed, can worsen in the absence of treatment and in the case of depression is expanding rapidly in the shadow of the COVID-19 pandemic. Often lasting over the first highly formative years of the child's life the negative effects of maternal mental illness on parenting and subsequent child outcomes may outlast the mother's illness and their impacts may perpetuate generationally.*

The effects of maternal mental illness on parenting are moderated by socio-economic factors such as household income and the education level of the mother. Evidence suggests that treating the mother's illness alone may not help an impaired mother-child relationship and there is a strong case for providing parenting programs that holistically combine psychosocial/psychological strategies with those that specifically target the quality of the parent-child interaction in a safe supportive context that encourages social engagement and meets the mother's identified needs.

Funded by the Hopscotch Foundation, the Acorn parenting program is a face-to-face community and group-based intervention based on attachment theory to help mothers of young children (0-3 years) who are experiencing chronic, and in many cases profound mental health challenges which impinge upon the quality of their parenting. Fifteen Acorn group sessions are provided on a weekly basis across multiple sites in South Australia with each being delivered by a multidisciplinary team of professionals comprised of a Mental Health Clinician, a Family Support Practitioner and Dance Worker with these being further assisted by trained volunteers. During each group session, evidence-based 'dance play' and 'reflective journaling' strategies are enacted with 'therapeutic letters' being provided to individual clients ('Acorn mothers') between group sessions; these are referred to as the three 'principal components' of Acorn. Two 'Semesters' of Acorn groups are conducted each year with each semester referred to as a 'Wave' in this report. There are established referral pathways to Acorn from a broad range of mental health services in South Australia including hospitals with several of these referring clients to every wave of the program over the 5.5-year period since its inception. An Acorn Manual detailing the program is available through the Hopscotch Foundation. The goal and objectives of the Acorn program are:

## Goal:

*'To holistically nurture and enhance parental wellbeing and the quality of the parent/child relationship for mothers experiencing identified mental health illnesses and their young children aged 0-36 months',*

## Objectives:

- 1. To enhance the quality of the parent-child interaction*
- 2. To improve parenting confidence, competence, and enjoyment for vulnerable mothers*
- 3. To enhance mothers' wellbeing, coping skills, resilience, and self-efficacy*
- 4. To expand and strengthen Social/Community supports and build Social Connectedness*

This summative evaluation report addresses the eleven Waves of Acorn delivered over a 5.5-year period up to mid-2020. The report presents evaluation work conducted in parallel with the delivery of the program adopting a mixed-methods, paradigmatically pragmatic participatory action research (PAR) approach. The evaluator has engaged in partnership with the Acorn program, assisting in an inclusively developed 'theory driven' (and evolving) program logic stipulating a range of desired Acorn outcomes. This partnership has included on-going collaboration with stakeholders in evaluation design and conduct, and the interpretation of evaluation findings. Findings have been periodically reported on over a dozen occasions to staff and an established Reference Group, in a collaborative effort to integrate reflective practice and on-going program improvement and to embrace revisions to a flexible evaluation methodology. The Bellberry Human Research Ethics Committee has reviewed and approved all aspects of this evaluation (2014-09-509-PRE-3) in accordance with the National Health and Medical Research Council's National Statement on Ethical Conduct in Human Research (2007, incorporating all updates as at 2018).



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## Evaluation Design/Methodology

Pre and post program data for each Wave were obtained through a battery of carefully selected Client Self-Report Instruments (section 3.3). All instruments were completed individually and sealed in envelopes to ensure and demonstrate confidentiality (section 3.2). Given the vulnerability of Acorn participants, and the concern to retain client participation in Acorn, ensuring that the compounding burden of evaluation demands was acceptable and manageable was also a primary concern, with this being monitored through client focus groups and regular feedback from Acorn workers. A brief screening tool to provide indications of borderline personality disorder (BPD) was introduced in Wave 4 to assess the value of the program for this particularly vulnerable sub-group of Acorn mothers. A standardized observation tool to measure the quality of the parent-child interaction (NCAT) which including a direct measure of child behaviour during interaction was applied from Wave 6.

### *The applied tools were:*

- Client Self-Completion Questionnaires
- The Parenting Stress Index Short Form [PSI-SF] (R. R. Abidin, 1995)
- The Patient Health Questionnaire [PHQ-9] (K. Kroenke, R. Spitzer, & W. Williams, 2001a)
- The Karitane Parenting Confidence Scale [KPCS] (R. Crncec, Barnett, & Matthey, 2008a)
- The McLean Screening Instrument for Borderline Personality Disorder [MSI-BPD], (Zanarini MC et al 2003)
- The NCAST Parent-Child Interaction Teaching Scale [NCAT] (Sumner & Spitz, 1994)

Semi-Structured 'follow-up' telephone interviews were conducted with 135 Acorn mothers from Waves 1-9, six-eight months after completing the program for the purposes of exploring the sustainability of Acorn outcomes. Five focus groups of mothers who had attended Acorn were conducted (between Waves 2-6) comprising of 26 mothers in total. Interviews with Acorn staff and volunteers have also been conducted to inform program development.

## Client Participation & Profile

The eleven Acorn program waves have been delivered at fifteen dispersed localities across South Australia. A total of 493 individual mothers and 520 children have attended at least one Acorn group to date with 388 (78.7%) individual mothers completing the program and 353 (91.0%) completing mothers providing both pre and post measures. Acorn was well attended with a median number of completed sessions being 11 (mode of 12). Reasons for withdrawal from Acorn were largely circumstantial and unrelated to the program. Demographic and psychological profiles of withdrawing mothers were very similar to engaged mothers (section 5.5.3); we can therefore be confident that our findings can be generalised to the broader population of mothers with maternal mental illness that impinges on their parenting. The rate of withdrawals over time has steadily declined as the program has matured.

The follow-up telephone survey yielded a response rate of 37.8% (135 mothers) - (62.8% of those who could be contacted). The profile of interviewed mothers was very similar to that of the broader group of mothers although they were more likely to have more than one child. To aid clarity sustained outcomes of the program are considered in this evaluation by comparing 'post' Acorn measures with 'follow-up' interviews for the same cohort of 122 mothers (section 5.3.5).

Acorn recruits a wide variety of mothers (mean age of 30.8 years) from a broad spread of socio-economic, cultural, familial, and educational backgrounds. The majority of mothers (65.1%) had a single child; 35.6% cited government benefit, pension, or allowance as their main source of household income; 27.2% had reached only up to year 12 schooling more than half of whom having left school earlier. 27 mothers brought a second child to Acorn. While the large majority (88.1%) were born in Australia (including fourteen indicating they were ATSI background), 15.1% spoke one of 22 different recorded languages other than English at home. The mean age of attending children was just over nine months with 110 (22.3%) children being aged one year or older.



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Acorn is engaging with a profile of mothers where related depression, poor perceived parental self-efficacy (PPSE), and high parental stress are causes of concern and which for many indicate the need for clinical intervention. Nearly nine in ten mothers had symptoms of depression and 30.2% indicated moderate-severe major depression. Difficulties with PPSE and parental stress were particularly evident in relation to second older children brought to the program. One hundred and thirteen (30.4%) Acorn mothers indicated BPD on commencing the program from Wave 4. Acorn dyads performed relatively poorly in the NCAT observational scale addressing the quality of the parent-child interaction, notably in the 'Caregiver Total score', 'Child Total' score, and Caregiver/Infant Total'. Clearly, the quality of the parent-child interaction was impaired for Acorn mothers who commence the program, and this supports the alignment of referred client needs with the objectives of Acorn. This was further supported by the broad client endorsement of a range program areas that they wished to address at the beginning of the program including: a desire to cope better and feel better as a parent, to have more parental confidence and to interact better with and feel closer to their child; a wish to befriend other parents and feel more connected to the community, and a wish to improve family relationships (section 6.2).

## Process Evaluation

Despite known engagement difficulties with the target group, the myriad issues and challenges faced by Acorn mothers, and the requirement to commute with their child(ren) to the venue on a weekly basis, Acorn has been well attended and families have engaged well with the program (section 5.2 & 6.3). Over nine in ten mothers (including those indicating BPD) agreed that they felt relaxed and safe

at Acorn and that the approach used was respectful and appropriate for them, with clear explanations provided by understanding facilitators using clear comprehensible resources at a suitable pace and venue. Over eight in ten mothers considered all three principal components of Acorn to be either a 'Huge help' (for just over half of the attending mothers) or 'Quite a lot of help', with nearly nine in ten (312 mothers, 88.6%) indicating this for dance play, 86.4% for the therapeutic letters and 82.1% for the journaling component. Talking with other mothers was also considered a huge help or quite a lot of help by 82.7%. The perceived helpfulness of strategies has improved steadily as the program has matured and its delivery refined supporting the formative aspect of the PAR approach adopted in the evaluation. Having a mixture of principal components has worked well for the heterogeneous clients attending Acorn. All but a single participating mum in the Acorn program indicated that they would recommend the program for other parents like them, with 265 (77.3%) indicating 'Yes, with no changes'.

The Acorn program is closely aligned with the indicated needs of its clients, is considered highly appropriate and helpful, and is very well received; this has nurtured high levels of engagement with attending mothers and children.

## Program Outcome Evaluation

Findings from the outcome evaluation are presented below. Importantly, the holistic approach adopted by Acorn envelops the related objectives 1-4 which for analytic purposes are addressed separately here.





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## Objective 1:

### To Enhance the quality of the parent-child interaction

The application of the NCAST observational tool has demonstrated significant improvement for Acorn mothers across its three main scales addressing: the quality of the parent-child interaction ('Caregiver/Infant total'); the enactment of skills brought to the interaction by the mother ('Caregiver Total'); and the child's abilities to engage in better interactions with their mothers ('Child Total'); these significant improvements were also evident across a number of 'most' vulnerable sub-populations including those indicating BPD, single mothers and those whose main household income was Government Benefits – (Section 7.1.1). Significant improvements were reflected in a reduction of dyads scoring >-1SD below the normative mean across all sub-domains of the NCAT tool; for 'Caregiver/Infant Total', 28.0% of those scoring >-1SD below the NCAST mean in the pre-measure improved to within 1 SD of this normative mean in the post measure. Improvements in this scale predict improvements in secure attachment. Significant improvements in the 'Caregiver Total' infer improvements in both 'maternal support' and 'maternal reflective functioning'.

It was noteworthy that the NCAT domains addressing mothers' 'Sensitivity to Cues' and child's 'Clarity of Cues' also improved significantly resulting in proportionately less Acorn mothers and children scoring >-1SD in their post-measures for these two domains than in the normative population. Three quarters of the poorest scoring children improved their cue clarity to within 1 SD of the normative mean in the post-measure. This provides clear direct observational support for behavioural improvement in this area for Acorn children which may be directly related to 'dance play' during Acorn. This was reflected in the almost universal agreement among mothers that *my child has benefitted from my attending the group*, (98.9% with 69.1% 'strongly agreeing'). Given the identified mental health issues experienced by Acorn mothers, the improvements evident from the application of the NCAST tool are substantial and this was also reflected in their self-reported indications of enhanced relationships with their children.

Over 90% of Acorn mothers indicated that as a result of participating in Acorn they had improved across all items related to the quality of the parent-child interaction in the self-completion questionnaire, with over half indicating they had improved 'a great deal' or 'quite a lot' for all items including: *Understanding my child's need to be in a close relationship with me* (248 mothers, 70.5%); *understanding my child's feelings and how they impact on behaviours* (228 mothers, 64.6%); *ability to respond appropriately to my child's needs and behaviours* (193, 54.7%); and *identifying my child's needs* (182 mothers, 51.6%). Perhaps a culmination of improvements in these parenting areas has resulted

in 312 mothers (88.4%) agreeing (including 152 strongly) that *I interact better with my child because of attending this group*. This was accompanied by 97.2% of Acorn mothers indicating improving their *Ability to appreciate my child's perspective of the world*, because of attending Acorn, with nearly 8 in 10 indicating this improved 'a great deal' or 'quite a lot' (272 Acorn mothers). Moreover, the large majority of mothers (328, 92.9%) indicating that *the group has helped me to feel closer to my child* (with 180 mothers strongly agreeing). Just over nine in ten mothers also agreed that they felt more comfortable with their child being physically close to them, with just under seven in ten indicating this had improved 'a great deal' or 'quite a lot'. Similar improvements across these indicators were reported in relation to mothers bringing a second (and for them usually more challenging) child to Acorn.

In responding to the open question '*What would you say are the most significant changes in your parenting and your family life as a result of attending the group*', the second most common written answers provided related to *Improved quality of interaction with child* with this being recorded by just over one quarter of Acorn mothers who completed the program. *Improved Bonding, attachment, closeness* was also cited by around 1 in 7 mothers.

The above findings were consistently indicated by mothers in the semi-structured follow-up interviews providing evidence of sustained impact here six-eight months after program completion. There is qualitative evidence that the tendency to continue to apply strategies learnt through the program has further enhanced parent/child interactions well after the program has ended, (section 7.1.2).





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## Objective 2:

### **To improve parenting confidence, competence, and enjoyment for vulnerable mothers**

The desire to improve parenting confidence was indicated by 85.6% of attending mothers with over half feeling this strongly prior to attending the program. On completing Acorn, 309 mothers (87.5%) indicated that *I have gained more confidence as a parent by attending the group* (with one third strongly agreeing) and this applied equally to parents of older and younger eligible children attending Acorn. Reported improvements in parental confidence was sustained six-eight months after completing the program with a slight shift toward strongly agreeing that this was the case. Acquiring *Enhanced Self-Confidence* was the most common spontaneous answer provided by mothers on completing Acorn to the open question 'What would you say are the most significant changes in your parenting and your family life as a result of attending the group', with this being confirmed six-eight months after leaving Acorn (section 7.5).

This improvement was mirrored in findings from the KPCS. Perceived parental self-efficacy (PPSE) has significantly and substantially increased for mothers attending Acorn ( $p < 0.001$ ) with a large effect size (0.56). The proportion of mothers in the 'non-clinical' range more than doubled in the post-measure (from 17.6% to 35.7%) and the proportions of mothers in 'severe clinical range' more than halved (from 24.9% to 9.5%). Sixty (27.1%) of the mothers with a child aged 8 months or less at the beginning of the program improved by six or more points on the scale in the post measure signifying a 'clinically reliable improvement' in PPSE for over a quarter of Acorn mothers.

Similar significant improvements in PPSE were also found for the diversity of more vulnerable Acorn mothers with medium to large effect sizes including: those indicating BPD (d.54), mothers who spoke a language other than English at home (d.58), single mothers (d.49), mothers with two children aged three years or less (d.75), mothers for whom government benefits or pension was the main source of household income (d.48), and mothers with low educational levels (d.49). Mothers with two young children aged 36 months or less have improved most in their PPSE. The significance and magnitude of these improvements were consistent over three time periods for the program and triangulated with self-reports provides strong support for program causal attribution.

268 Acorn mothers (75.9%) indicated they had learned a lot about parenting from attending Acorn, with 103 (76.3%) reaffirming this in the follow-up measure. Given that Acorn does not set out to impart parental 'knowledge' this reflects learning acquired through participation in play and reflection rather than instruction. Moreover, there was a 'rippling' effect of learnings disseminating to peers in the broader community with just under nine in ten mothers in the post and follow-up measures indicating that they will (or have) shared their new knowledge with their peers.

Nearly all Acorn mothers (99.3%) indicated improvement in *Using a range of ways to interact with my child (e.g., through songs, games, activities to do together)* because of attending Acorn with 281 (79.6%) indicating 'yes, a great deal' or 'quite a lot' of improvement. Again, near universal improvement was indicated for: *Feeling comfortable playing and interacting with my child*, with 260 mothers (73.9%) indicating a 'great deal' or 'quite a lot' of improvement in this area; and *Feeling comfortable with my child exploring the world through play*, with 273 mothers (77.3%) indicating a 'great deal' or 'quite a lot' of improvement.

Nearly all Acorn mothers indicated improvements in *Enjoying my role as a parent*, with 249 (70.5%) indicating this improved 'a great deal' or 'quite a lot' as a result of attending Acorn. Moreover, 95 (87.9%) of the 108 Acorn mothers who had older children (of any age) who did not attend the program also indicated that Acorn had helped them in parenting that child.

Over 9 in 10 Acorn mothers reported improvements in both their *Ability to reflect on how my past experiences impact on my parenting* (with 242, 68.9% indicating this improved 'a great deal' or 'quite a lot' as a result of attending Acorn), and their *Ability to reflect on how my current health impacts on my relationship with my child* (with 239, 67.7% indicating this level of improvement). These positive outcomes also applied to second attending children at Acorn and were sustained six-eight months after completing the program.



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## Objective 3:

### To enhance mothers' wellbeing, coping skills, resilience, and self-efficacy

There are strong indications that the Acorn approach has provided holistic wellbeing benefits for engaged mothers.

The PHQ-9 has demonstrated significant improvement in depression scores pre and post Acorn ( $M_{diff}= 2.27, t(343)=8.90, p<.0001$ ) with an effect size  $d=.37$ . These improvements were evident for different cohorts of Acorn mothers at different time periods throughout the duration of the program. Taking those mothers who provided both pre- and post-measures, the number of Acorn mothers with 'Minimal' or 'No' symptoms improved to a majority in the post-measure from 154 (44.8%) to 212 (61.7%); the number of mothers with no symptoms doubled to just over one in four. Reductions in 'Major Depression moderately severe to severe' were also evident, from 97 (28.2%) indicating this in the pre-measure to 60 mothers (17.4%) in the post-measure. Whilst establishing causal attribution for these improvements is problematic given the absence of a control group and the 'snap-shot' nature of pre/post measures, there is evidence here to suggest that mothers with a range of depressive symptoms may benefit from Acorn to the point where their symptoms subside. Clinically significant improvement (from a 'clinical' to 'non-clinical score') were calculated for the 190 mothers scoring in the clinical range in the PHQ-9 pre-measure for whom post-measures were obtained (section 3.3.3); 50 of these mothers (26.3%) met these criteria for 'clinically significant' improvement. Depression also reduced significantly for those indicating BPD (with a larger effect size of  $.43$ ) and similarly for a range of sub-groups of vulnerable mothers

i.e., Single mothers; those with two children aged three years or less; those speaking a non-English language at home, those receiving Government benefit as the main household income, and those with low education levels, (section 7.3.1). Those finding coping with their depressive symptoms 'very' or 'extremely' difficult also reduced by more than half, from 101 (29.4%) to 43 (12.5%).

There has also been a clear improvement in overall 'Total Parenting Stress' and in each of the PSI-SF domains ('Parental Distress', 'Parent-Child Dysfunctional Interaction' and 'Difficult Child' - section 7.3). Significant improvement in parental stress were consistent throughout the duration of the program. The numbers indicating 'clinically significant' or 'high' Total Parenting Stress almost halved from 60 (17.4%) to 30 (8.7%), and for Parental Distress (the most prevalent stress related issue for Acorn mothers), the numbers in these levels moved from 190 (55.2%) to 144 (41.9%). These significant improvements with effect sizes ranging from medium to large were evident across the domains of the PSI-SF for a range of 'most vulnerable' sub-populations of Acorn mothers including those whose household income was mainly Government benefit and those with lower educational levels.

Parenting stress was noticeably higher in relation to the second older attending child at Acorn and this improved significantly and substantially with a large effect size ( $d=.91$ ). Mothers bringing two children to the program appear to have benefitted greatly in this regard as the effect size of the improvement with their youngest child was also larger than for the broader group of mothers ( $d=.63$ ), suggesting some 'added value' for parents attending Acorn with two children under 3 years old. Moreover, 16 mothers scored in the 96th percentile or higher for 'parent-child dysfunctional interaction' (PCDI) in the pre-measure and this reduced to 4 in the post-measure, moving 12 mothers away from indications of potential child abuse. With regard to the second older attending child, PCDI scores were initially high, but the improvement was significant and substantial with a large effect size  $d=.81$ .

The large majority (259, 88.7%) reported that the program *has helped me to cope better as a parent*, with 119 (33.8% indicating 'strongly agree'). For mothers indicating BPD, the wish to cope better as a parent was more broadly expressed as a reason for attending Acorn, and nearly nine in ten of these mothers (72, 88.9%) agreed that Acorn had helped them in this regard, with just under one third strongly agreeing this was the case. 319 (90.4%) mothers indicated that *the group has made me feel better about myself as a parent* with 137 (38.8%) strongly agreeing this was the case; 71 mothers indicating BPD (87.7%) agreed with this item, 29 (35.8%) strongly.



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While still a majority, Acorn mothers were less likely to agree that *the group has made me more confident to access other family services if I need them*, with 233 (66.0%) endorsing this item, 61 (17.3%) 'strongly'. This lower level of agreement was partly explained by some mothers expressing existing confidence in this area prior to Acorn; this may be related to the fact that all mothers were referred to Acorn by existing services with which they had some degree of engagement. However, enhanced confidence to access suitable family services was sustained or improved for around two-thirds of completing mothers; taking just those 122 mothers interviewed in both the post and follow-up measures, 81 (66.4%) indicated improvement on completing the program with this raising to 94 (77.0%) indicating this six-eight months later. Having engaged with Acorn over the three-month period and grown in personal/parenting confidence, it appears that at least in some cases the awareness that the program has helped in this regard grew after its completion. This may be related to the almost universal recognition among Acorn mothers that *I am not alone in the struggles I can face as a parent*, with 293 (83.0%) of mothers indicating this had improved 'a great deal' or 'quite a lot'. This suggests both a reduction in perceived isolation and stigma, both common experiences for mothers with maternal mental illnesses, and is an important step toward greater social connectivity addressed in Objective 4.

Most mothers in the post-measure (208, 59.1%) indicated that *the group has helped our family to be more independent and resilient*, and this appears to have improved since completing the program. While a sizable minority of mothers did not indicate a desire to seek this improvement, of the 115 mothers in the pre-measure who indicated strongly that they wanted their family to be more independent and resilient, 85 (73.9%) agreed this had occurred in the post-measure and this perspective was sustained six-eight months after finishing Acorn. Clearly Acorn achieved this outcome for most of the mothers who indicated this need.

When asked: *'What would you say are the most significant changes in your parenting and your family life as a result of attending the group?'* the third most frequently and spontaneously expressed change concerned Improvements in personal well-being. A broad range of improvements were expressed (e.g., being calmer or more relaxed; being less depressed/anxious; general feelings of greater wellbeing/happiness; more patience; and feeling less stressed). These improvements have been further authenticated through the application of standardized tools.

## **Objective 4: To Expand and Strengthen Social/Community Supports and build Social Connectedness**

Providing a safe, relaxed, and non-judgemental group environment of mothers with shared parenting and mental health issues and engaging them in collective interactive group activities with their children has encouraged friendships to develop, and this has met a clear personal objective for participating in the program indicated by the large majority (87.3%) of Acorn mothers. Over eight in ten mothers agreed *I made friends with other parents in the group*, with 134 (38.1%) strongly agreeing this was the case. For mothers indicating BPD these proportions were slightly lower, but nonetheless 77.8% agreed they had made friends, and 39.5% strongly agreed this had occurred. Of the 168 Acorn mothers who completed Acorn and had indicated strongly at the beginning of the program that a reason for attending was to become acquainted with other mothers, 86.3% (145 mothers) agreed that they had made friends at the end of the program, 47.0% (79 mothers) 'strongly'. The majority of friendships appear have sustained and, in some cases, strengthened months after completing the program including through ongoing Facebook groups established by former Acorn clients. Around one in ten mothers spontaneously cited *Being more socially supported and connected* as the most significant change in their parenting or family life as a result of attending Acorn.

Acorn has been more successful in fostering relationships and connections between attending mothers than between mothers and the broader community. Nonetheless, 224 mothers, (63.6%) indicated *I feel more connected to my community because of attending the group*, with this proportion being similar for mothers indicating BPD (66.7%). Of the 98 completing mothers who strongly indicated that they wished to feel more connected to their community in the pre-measure, 75 (76.5%) agreed that this had been achieved in the post-measure. A majority of mothers continued to endorse this change and attribute this to Acorn six-eight months after the program.

Given that Acorn mothers had been referred to the program, they clearly had prior experience with existing supports. Nonetheless, 222 mothers (62.9%) agreed *I am more aware of other services and community supports for myself or my family as a result of attending the group*. Despite known high patterns of service usage among mothers indicating BPD, 70.4% of these mothers agreed they had raised awareness in this area.



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It was also the case that 314 mothers (89.7%) indicated they 'will share' their learnings through the Acorn program with their peers, and confirmation that this intention was enacted was indicated in the follow-up measure with 121 (89.6%) agreeing *I have shared what I have learnt from the group program with other parents like me*, (with just under half of these strongly agreeing this item). In this sense there has been a rippling effect of program messages in the community and clearly Acorn mothers have valued their experience to the point of being motivated enough to share this with their peers. This is consistent with the development of improved confidence indicated by the majority of completing mothers and while for many this focussed on sharing elements of Dance Play at least for some mothers this also highlights a sense of empowerment to connect with peers discuss sensitive parenting issues in order to help them.

Most Acorn mothers indicated that participation in the program has enhanced their family situation with 220 (62.3%) of completing mothers indicating *the group has helped our family to have better relationships*. This appears to have improved over time; taking those 122 mothers for whom both post, and follow-up measures are available, 58.2% of these mothers indicated Acorn had helped to improved family relationships in the post measure with this increasing to 76.9% in the follow-up measure. Of the 153 mothers who strongly agreed in the pre-measure that they wanted their family to have better relationships, 106 (69.3%) agreed that *the group has helped our family to have better relationships* in the post-measure; 77.6% of these mothers interviewed six-eight months after the program agreed that this was the case. Taken with the responses addressing family independence and resilience this suggests that improvements in family functioning were sustained and for some mothers may have taken time to come to fruition; more than three-quarters of interviewed mothers acknowledged the role of Acorn in helping this to happen months after leaving the program.

While it is likely that some existing familial circumstances and contexts may be impervious to the influence of any single parenting program, it was still the case that some profound changes in family circumstances were raised. A number of mothers described a mechanism for this being the sharing and enactment of parenting skills and strategies with their partners which had been acquired or honed through the program, with this subsequently improving their family life.

## Dose/Response

There were 27 completing Acorn mothers who attended less than half of the Acorn sessions. These mothers benefitted from Acorn but across fewer dimensions than those mothers attending more than half of the sessions (section 9.0), supporting the program's current 15-week structure. While small numbers render interpretations tentative, mothers who for whatever reason cannot attend the whole program are still experiencing positive outcomes. It is also noteworthy that whilst these mothers attended less sessions, their attendance was spread over the duration of the program with all attending the penultimate session to complete the evaluation instruments. This may have provided the time for mothers to enact strategies acquired through the program at their own pace between attended sessions. It is also the case that providing the current program over the three months may be particularly important as most Acorn mothers were unable to attend all 15 sessions. However, we can conclude that there are greater benefits for mothers who attend more than 7 Acorn sessions, notably in terms of wellbeing and parental confidence/perceived parental self-efficacy.

For mothers identified as relatively more vulnerable who re-enrolled in the program for a second Acorn, repeating the program provides some 'added' benefits for these mothers. This has validated the decision to employ clinical judgement in re-enrolling the more vulnerable of Acorn mothers into the program for a second time.





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## Conclusion

Acorn has been holistically achieving its stated objectives for the large majority of completing mothers many of whom have profound co-occurring mental health issues including around one third with borderline personality disorder.

The program has clearly nurtured and enhanced parental wellbeing and the quality of the parent/child relationship for mothers experiencing identified mental health illnesses and their young children with enduring positive outcomes. Through enacting a program informed by attachment theory, Acorn has enhanced understanding of the relationship of child needs, feelings, and behaviours, for attending mothers who have acquired a greater ability to respond to these and to appreciate their child's perspective while developing their own reflective capacities concerning the impacts of their past experiences and current health issues on their parenting. This has further helped to enhance the parenting of older children in the family setting. Mothers have acquired greater parental competence and confidence to engage in a range of healthy interaction play activities freely and comfortably with their children. Mothers almost universally identified that their children had benefitted from participation with this being sustained months after completing the program and with the majority strongly agreeing this was the case, and this was supported by standardised observations of enhanced child interaction skills with their mother on completing Acorn, particularly the children's 'clarity of cues' which compared favourably with the normative population. Many mothers have grown to feel closer to their child with over half asserting this strongly and the large majority are happier in their parenting.

Moreover, there were clear improvements in mental health wellbeing: in depression and coping both with depression and parenting issues generally; in parental stress and distress; and in perceived parental self-efficacy. Clearly a broad array of known influences on the quality of parenting and the parent-child relationship have been significantly improved through the program and this was demonstrated for a range of 'most' vulnerable sub-groups of mothers attending the program including those with borderline personality disorder. This has been accompanied by expanded social supports and friendships for many attending mothers.

Acorn mum's experiences have been shared with partners/spouses and this along with improvements in mothers' wellbeing and parenting relationships has encouraged improved relationships within families. Learnings from this highly valued and universally recommended program have also been provided to peers in the broader community.

In conclusion, there is a strong weight of evidence accumulated from a range of triangulated data sources that Acorn is delivering a valued, appropriate, and effective program and through establishing stable referral pathways across the sector is reaching and engaging a diverse population of highly vulnerable mothers and children. The program is achieving its stated objectives and the sustained nature of the impacts from Acorn six- eight months after its completion for the large majority of attending mothers has been particularly impressive. The program is clearly aligned with and addresses the identified needs of its client base and has taken substantial steps toward holistically nurturing and enhancing parental wellbeing and the quality of the parent/child relationship for a large number of South Australian mothers

Given the prevalence of maternal mental health issues and substantial potential consequences of poor maternal mental health for mothers and offspring, the Acorn program offers an effective means of addressing this pressing public health issue by enabling larger numbers of mothers and children to be helped in a supportive group environment. This has additional gravitas in the shadow of COVID-19 with expanding numbers of those suffering mental illness and with the increasing numbers of previously undiagnosed cases emerging through the implementation of routine screening procedures. This coherent and established program is well positioned to help address this pressing challenge.





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# 1.0 Introduction and Literature Review

Depression has been identified as the third highest burden of disease both globally and in Australia where it is the highest cause of non-fatal disability (Australian Institute of Health and Welfare, 2014). A majority of people with depression may be undiagnosed and left untreated the condition can worsen (Williams, Chung, & Muennig, 2017). Maternal depression is common, but prevalence estimates vary depending on the population studied, measures applied and the time frame considered (Cox, Sowa, Meltzer-Brody, & Gaynes, 2016). A recent overview of 80 countries estimated a global postpartum depression prevalence of around 17.2%; the highest rate of 39.96% was found in South Africa, with Australia being around 11.22% (Wang et al., 2021). However, these rates do not fully reflect the magnitude of the problem as they exclude mothers who were already receiving psychiatric care or were already recognised as having possible depression. Moreover, the COVID-19 pandemic has dramatically worsened mental health globally with an estimated 53.2 million additional cases of major depressive disorder in 2020 (COVID-19 Mental Disorders Collaborators, 2021).

Postpartum depression may be specified by the onset of mood symptoms during pregnancy or in the early weeks after parturition which endure beyond the two week 'baby blues' period experienced by many mothers (American Psychiatric Association, 2013; Nonnenmacher, Noe, & Ehrental, 2016). However, postpartum depression can be experienced by women up to twelve months after the birth of their child (Kroh & Lim, 2021). Experiencing depression is not limited to the postpartum period, and an Australian study found maternal depression to be more common when the child passes toddler age than in the first twelve months post-partum (Woolhouse, Gartland, Mensah, & Brown, 2015). Mothers with depression experience a range of symptoms including depressed mood, mood swings, difficulties coping, anxiety, feelings of guilt, shame and worthlessness, a sense of overwhelming loneliness and feeling alone in their experiences, extreme concerns about their baby and a loss of interest in daily activities (C.T. Beck, 1992; Bilszta, Ericksen, Buist, & Milgrom, 2010; Caldwell, Meredith, Whittingham, & Ziviani, 2021; Dunford & Granger, 2017; Norhayati, Hazlina, Asrenee, & Emilin, 2015). Postpartum depressive symptoms are associated with higher parenting stress (Cornish et al., 2006; Gerdes et al., 2007; Sidor, Kunz, Schwyer, Eickhorst, & Cierpka, 2011), and 'parental distress' in particular has been found to predict later depressive symptoms (Thomason et al., 2014). Experiencing depression also increases the risk of maternal suicide (Sit, Rothschild, & Wisner, 2006). The majority of people suffering from depression have at least one comorbid mental disorder and the prevalence of mental health comorbidity has been shown to increase with severity of depression (Steffen, Nübel, Jacobi, Bätzing, & Holstiege, 2020). This array of mental health comorbidities and a range of specific mental health illnesses experienced during motherhood increases the overall enduringly high prevalence of maternal mental illness.

There is large body of research associating maternal mental illness with negative parenting behaviours, disengaged parenting and poorer mother-infant interaction during infancy, with most of this work addressing maternal depression (T. Field, 2010; T. Field, Hernandez-Reif, & Diego, 2006; Tiffany Field et al., 2007; S. H. Goodman & Gotlib, 1999; N. L. Letourneau et al., 2012; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Murray & Cooper, 1997; Corinna Reck et al., 2004; A. Stein et al., 2008; Tronick & Reck, 2009). The potential negative effects of a range of other specific mental illnesses on parenting have also been documented including psychotic illnesses (Ramsauer & Achtergarde, 2018), anxiety (C.L. Dennis, Falah-Hassani, & Shiri, 2017; T. Field, 2018), and borderline personality disorder (Bartsch, Roberts, Davies, & Proeve, 2015; Eyden, Winsper, Wolke, Broome, & MacCallum, 2016). Stress in the parenting system has been specifically shown to impinge on the quality of parenting behaviour (Mulsow, Caldera, Pursley, Reifman, & Huston, 2002), and the quality of the developing relationship between mother and infant (Tharner et al., 2012), and parents with high stress derive less meaning and satisfaction from caregiving (Rholes, Simpson, & Friedman, 2006). Socioeconomic factors can moderate the relationship between maternal mental illness and negative parenting practices with the association tending to be stronger in lower socio-economic groups and where the mother has lower formal education (Lovejoy et al., 2000; A. Stein et al., 2008). The compromised emotions many mothers with maternal mental illness experience can also distort emotional communication with their children (Tronick & Reck, 2009). Subsequently mothers' enjoyment of the parental role may be reduced affecting a delay in developing competency in parenting skills and potentially creating a detached, mechanistic caregiving experience (Barr, 2008). Moreover, an important predictor of parenting behaviour is how parents were parented themselves (Anda et al., 2006; Conger, Belsky, & Capaldi, 2009), highlighting the potential endurance of unchecked problems through generations.

Given the above difficulties, it is predictable that maternal mental illness is associated with low maternal confidence (Arante, Tabb, Wang, & Faisal-Cury, 2020), and low perceived parental self-efficacy (PPSE) (Reece, 1992; Teti & Gelfand, 1991). PPSE refers to the capabilities parents believe they have to successfully organise and execute situation specific parenting tasks (Bloomfield et al., 2005), and this is positively associated with actual parenting competence (Teti & Gelfand, 1991). Low maternal confidence experienced in the early postpartum period has also been shown to persist 12-15 months after delivery regardless of mental health improvements, and may continue to have a negative effect on the mother-child relationship (Arante et al., 2020; Zietlow, Schlüter, Nonnenmacher, Müller, & Reck, 2014). Improving parental confidence and competence to engage with their children is therefore an important consideration in optimising the impact of parenting programs for mothers with maternal illness.



# 1.0 Introduction and Literature Review

Evidence has accumulated of the negative effects of maternal mental illness on offspring (Hoffman, Dunn, & Njoroge, 2017; O'Connor, Monk, & Burke, 2016; Rayce, Rasmussen, Væver, & Pontoppidan, 2020; A. Stein et al., 2014), with this causal pathway being mediated by the quality of parenting behaviours (A. Stein et al., 2008; A. Stein et al., 2014). The quality of mother-child interaction has been shown to predict the child's later positive cognitive and socio-emotional development, and academic competence in middle childhood (Evans & Porter, 2009; Kochanska, Aksan, & Carlson, 2005; NICHD Early Child Care Research Network, 2000; Oxford & Findlay, 2013; Stright, Gallagher, & Kelley, 2008). Parenting stress may negatively affect subsequent child emotional and behavioural development (Tharner et al., 2012) with the first three years of the child's life being critically important (Bowlby, 1969), and high parenting stress has been associated with avoidant and disorganised attachment styles for children (R.R. Abidin, 2012; Ainsworth, Blehar, Waters, & Wall, 1978). Both parenting stress and maternal depression are associated with family conflict and relationship breakdown, which can also contribute to later socio-emotional and behavioural problems for offspring (Eisenhower, Baker, & Blacher, 2009; Hanington, Heron, Stein, & Ramchandani, 2012; Holden, 1991; A. Stein et al., 2014; Stith et al., 2009; Tharner et al., 2012).

Psychosocial and psychological programs can help mothers with mental illness with the most accumulated evidence of effectiveness addressing depression. Several reviews and meta-analyses have found a broad range of interventions to be effective in reducing depressive symptomology, including peer/social support, and non-directive counselling where mothers are encouraged to explore their feelings and find their own solutions, (C.L. Dennis & Hodnett, 2007; Lumley, Austin, & Mitchell, 2004). A meta-analysis by Goodman and Santangelo (2011) found efficacy for the group treatment of postnatal depression (PND) using a variety of therapies including interpersonal therapy, mother-infant interventions and unstructured social support. Similar findings were obtained in a meta-analysis of group and individual programs for women with PND delivered in community based settings (Stephens, Ford, Paudyal, & Smith, 2016). Where various types of psychotherapeutic interventions have been compared, they have been found to be approximately equally effective treatments for postpartum and other forms of depression (P. Cuijpers, Brännmark, & van Straten, 2008; Pim Cuijpers et al., 2021). This has led researchers to argue that patient preference should therefore play a prominent role in choosing therapy (Naber & Bullinger, 2018). Providing interventions that are considered appropriate, safe and valuable from the perspective of the mothers with maternal depression may be particularly important given identified barriers to their engagement with medical treatments, such as ambivalence and concerns about medical effects on breast milk and parenting performance (Bilszta et al., 2010; Stephens et al., 2016).

A major challenge here is that treating the mother's mental illness alone does not necessarily help enhance an impaired parent-child relationship and its negative consequences for the child (Cicchetti, Toth, & Rogosch, 1999; Ericksen et al., 2018; Forman et al., 2007; McMahon, Barnett, Kowalenko, & Tennant, 2006; Murray, Cooper, Wilson, & Romaniuk, 2002; Nylen, Moran, Franklin, & O'Hara, 2006; Poobalan et al., 2007). Notably, studies with mothers in remission have demonstrated that impairments in parenting developed during acute maternal depression can persist (Dittrich et al., 2018; Kluczniok et al., 2016).

However, interventions that successfully enhance the mother-infant relationship and build parental confidence have been shown to provide a protective buffer for the effects of maternal mental illness and subsequent compromised child development (P.K. Coleman & Karraker, 1997; T. L. Jones & Prinz, 2005; Nylen et al., 2006). Relatedly, building parental confidence and PPSE, can have a positive influence on healthy parenting practices (Finlayson, Siefert, Ismail, & Sohn, 2007). Given the potential to modify parenting behaviour, there is a strong case for developing effective parenting interventions for mothers with maternal mental illness to mediate the effects of their illness on child outcomes (A. Stein et al., 2014).

There is also a sound rationale for offering blended parenting interventions for mothers with maternal mental illness in a format that provides social support and connectivity. Social isolation is commonly associated with significant mental illness (da Rocha, Rhodes, Vasilopoulou, & Hutton, 2018; Nilaweera, Doran, & Fisher, 2014; Pucker, Temes, & Zanarini, 2019; Teo, Lerrigo, & Rogers, 2013 May), and there is a demonstrable relationship between poorer mental health and lower levels of social connectedness (T. Cruwys, S.A. Haslam, & G.A. Dingle, 2014). While mental health issues can increase social isolation (American Psychiatric Association, 2013), a lack of social support has been found to be a significant predictor of postpartum depression (C.T. Beck, 2001; Eastwood et al., 2012). Moreover, there is evidence that improving social connectedness benefits mental health generally (Kawachi & Berkman, 2001; Perkins, Subramanian, & Christakis, 2015) and depression specifically (Cruwys, Dingle, & Haslam, 2013; T. Cruwys, S.A. Haslam, & G.A. Dingle, 2014; Haslam, Cruwys, & Haslam, 2016; Saeri, Cruwys, Barlow, Stronge, & Sibley, 2018). There is also qualitative evidence that access to peer support promotes emotional wellbeing for mothers experiencing perinatal mental illness by helping to alleviate isolation, guilt and stigma (C. C. Jones, Jomeen, & Hayter, 2014).

A recent systematic review addressing the effects of various treatments of postpartum depression on parenting and child development found that those that utilised both maternal-child interaction guidance and psychotherapeutic group support can significantly



# 1.0 Introduction and Literature Review

improve parenting and child development outcomes (N.L. Letourneau, Dennis, Cosic, & Linder, 2017). The evidence therefore suggests that parenting interventions for mothers with maternal mental illness should provide both strategies to address mental health symptom relief and strategies to enhance the quality of the parent/child relationship. In the latter case integrating activities that enhance mother-infant interaction, build parental confidence/perceived parental self-efficacy, and encourage sensitive parenting and maternal bonding may be of particular benefit (Ericksen et al., 2018; Knitzer, Theberge, & Johnson, 2008; A. Lieberman & Zeanah, 1999). Holistic group-based parenting interventions may offer additional social support related benefits for mothers with maternal mental health issues along with the potential for a mutual learning environment where skills and strategies can be practiced. This composite, holistic approach may optimise the likelihood of better outcomes for mothers, children, and families (Forman et al., 2007; M. Muzik et al., 2015; Nylan et al., 2006; C. Reck, Zietlow, Müller, & Dubber, 2016).

Given the prevalence of maternal mental health issues and substantial potential consequences of poor maternal mental health for mothers and offspring, such group-based strategies may offer a more effective means of addressing this pressing public health issue by enabling larger numbers of mothers and children to be helped in a supportive environment. This has additional gravitas in the shadow of COVID-19 with expanding numbers of those suffering mental illness and with the increasing numbers of previously undiagnosed cases emerging through the implementation of routine screening procedures such as those introduced in Australia through the National Perinatal Depression Initiative (Australian Government Department of Health and Ageing, 2009).

It is against this background of the need for a blended group-based approach to address a substantial public health issue that the Acorn program emerged.





## 2.0 The Acorn Parenting Program: foundation, Goal and Objectives<sup>1</sup>

*Funded by the Hopscotch Foundation, the Acorn parenting program is a community and group-based intervention to help mothers of young children (0-36 months) who are experiencing both maternal mental illness and mother-infant relationship difficulties which impinge upon the quality of their parenting. Referral to the Acorn program is from a broad range of sources: including Child and Family Health Services, Perinatal and Infant Mental Health Services, general hospitals, private psychiatric and psychology consultants, General Practice networks and individual GP practices, government run agencies and non-government community-based programs. The first eleven Waves of the program have been hosted by AnglicareSA in South Australia.*

The theoretical underpinnings of the Acorn program were derived from attachment research which reinforces how the quality of the parent child attachment has a significant role in the life trajectory of the child (Schore, 2001). Attachment based interventions target the processes associated with the development of secure early attachments and at the same time address the origins of disorganization (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2005). Important for building secure attachment are parental sensitivity (De Wolff & Van IJzendoorn, 1997) and reflective functioning (Berlin, Zeanah, & A.F., 2008) on the foundation of a secure base within the therapeutic relationship. This therapy allows the women to experience a relationship that is safe, curious and reflective, thereby assisting processing and integration of her past history (A. F. Lieberman, 2004). A specific focus within this relational approach is the support of arousal regulation in both the parent and infant. Activities are also designed to help women strengthen their relationship with each other and build stronger social local networks.

Acorn is a group program of 15 weekly sessions incorporating three primary components: song and dance activities ('Dance Play') that encourage meaningful interactions between mothers and infants; strength based cognitive reflection ('Reflective Journaling') that creates space for the mothers to deeply consider new perspectives, values, and parenting goals; and between session e-mail correspondence ('Therapeutic letters') to provide additional support and encouragement. Parents are supported in a 'non-judgmental'

safe environment (often part of a child-care Centre) to overcome blocks in their ability to accurately read, interpret and appropriately respond to their infant's cues because of the impact of their mental health. The groups are staffed by a dance and movement specialist, a Mental Health Clinician (a psychologist, social worker, or mental health nurse, trained in maternal and infant mental health and attachment theory), and a Family Support Practitioner (FSP) who leads the journaling and reflection components of the group. 3-4 volunteers are required, depending on group numbers (between 5-10 dyads per group) who care for the infants whilst the women work on their personal issues. Staff debrief following each group session and the teams of Dance Workers, FSPs and Mental Health Clinicians meet regularly to share experiences and ensure consistency across the program.

Dance Play addresses the mother-infant interactional relationship, focusing on building moments of connection using music and movement to build positive affect as an aspect of stress reduction (Sroufe, 1997). The strategy seeks to create a change in synchrony, potentially generating new responses in the infant (De L'Etoile, 2006). The Acorn program incorporated Dance Play through 55-minute group sessions with the Dance worker which encourage dyadic communication dance/movement and reciprocity using songs written for the program (Malloch et al., 2012; Van Puyvelde et al., 2014).

Following the Dance Play parent reflection time is facilitated using journaling (Miller, 2014) which focuses on building reflective functioning - the capacity to understand the dynamics of the internal and interpersonal emotional life of oneself and the other (Fonagy & Target, 1997; Slade, 2005). The women are encouraged to explore and share their mental health experiences and core relational conflicts with empathic appreciation of their ambivalent relationships with their infant (Zeanah, 2009), while volunteers care for the infants close by.

After the departure of the participants, the Mental Health Clinicians who have supported both the dance and journaling sections discuss core conflicts of each woman and write a therapeutic letter (Epston, 1994; Kindsvatter, Desmond, Yanikoski, & Stahl, 2013) sent to each mother each week between Acorn sessions. Such letters have been developed as a mode of extending reflections from therapists to patient beyond the sessions. Observed strengths are used as the basis for the letters (Moules, 2009) which convey interest, support, curiosity regarding challenges the mother may face and belief in the potential for positive change. An Acorn Co-ordinator is also enlisted to organise referrals, collate resources and evaluation materials, and collate information concerning client withdrawal for the program.

<sup>1</sup> I acknowledge the help of Prof Ann Sved Williams in summarizing the Acorn program here. A more comprehensive description and materials is available in the *Acorn Program Manual* compiled by Dr. Sally Chance and available through the Hopscotch Foundation.



## 2.0 The Acorn Parenting Program: foundation, Goal and Objectives

Acorn groups were established progressively at community venues covering 13 geographically dispersed locations in metropolitan and outer metropolitan Adelaide suburbs, a city of approximately 1,600,000. This has ranged from semi-rural settings (Mount Barker) to established industrialised areas (Salisbury North). The program was delivered in 'waves' twice a year to between 4-10 groups at a time. Evaluation of each 15-week wave was implemented and progressively used to shape the program as it evolved in response to both participant and therapist responses. The program and evaluation are overseen by a 'critical' Reference Group (Y. Wadsworth, 1998) comprised of program stakeholders and representatives of referring agencies working in partnership with the evaluator, and this directed the program and evaluation following periodic reporting of findings after each Wave of delivery.

The Acorn program has inclusively workshopped and designed a program logic and manual (available on request) stipulating a range of desired Acorn outcomes/objectives. These objectives were revised on several occasions as the program evolved through a participatory action research approach to meet the needs of participating mothers and children; the stated goal and objectives of the Acorn program are:

### Goal:

*'To holistically nurture and enhance parental wellbeing and the quality of the parent/child relationship for mothers experiencing identified mental health illnesses and their young children aged 0-36 months',*

### Objectives:

1. *To enhance the quality of the parent-child interaction*
2. *To improve parenting confidence, competence, and enjoyment for vulnerable mothers*
3. *To enhance mothers' wellbeing, coping skills, resilience, and self-efficacy*
4. *To expand and strengthen Social/Community supports and build Social Connectedness*

ACORN has been evaluated using an adapted participatory action research approach (PAR) by Action Research Partnerships<sup>2</sup>.

This report presents findings from the first eleven waves of ACORN delivered through AnglicareSA focussing on the quantitative tools applied in the evaluation which are contextualised with qualitative data from participating mothers acquired through open questions in their pre or post self-completion questionnaires, focus group discussions or follow-up telephone interviews<sup>3</sup>.



<sup>2</sup> The evaluator has been awarded a 'National Commendation for Excellence in Evaluation' by the Australasian Evaluation Society, has designed, and delivered University programs in evaluation in Australia and overseas and was formally the State-wide Coordinator for the Primary Health Care Research and Evaluation Development (PHCRED) program.

<sup>3</sup> A separate program for Aboriginal mums and their children 'The Sacred Little Ones' program has also been delivered through the Hopscotch Foundation which embraces the strategies of ACORN whilst rearticulating these into a culturally appropriate form. This program was evaluated separately and is available on request.



## 3.0 Evaluation Design & Methodology

### 3.1 Adoption of a participatory action research approach

#### 3.1.1 Overview

This evaluation acknowledged from the beginning the importance of both the well-being of the project clients, and the potentially fragile inter-relationships between them and the ACORN service providers at participating community sites. Given the vulnerabilities of the client base, the need for an appropriate, respectful, and sensitive approach to the evaluation was identified which limited stressful demands on ACORN participants and engaged the support of their service providers. Additionally, the need to build evaluation capacity for program stakeholders was recognised by the program management and the evaluator. Given these factors, and the methodological issues discussed below, a 'participatory' approach to the evaluation research was adopted. This has purposely enlisted the collaboration of the program team to help enact suitable, extensive, and sensitive data collection strategies, whilst building capacity across the organisation and integrating the mechanisms for on-going program improvement.

The evaluation has embraced a mixed-methods, paradigmatically pragmatic approach (Greene & Caracelli, 1997; Krantz, 1995; Miles & Huberman, 1994) adapting tenets of participatory action research (PAR) - (Sankaran, Dick, Passfield, & Swepson, 2001) design that engaged Acorn staff responsible for the management and delivery of the program in the collection and interpretation of evaluation data administered pre and post program. Findings and reflections from the evaluation were periodically presented to the Acorn 'critical' Reference Group (Y. Wadsworth, 1998) who oversaw program and evaluation design and on-going revision over eleven Waves of program delivery. Whilst the three primary component structures of the program have remained constant, this flexibility has enabled the evaluation to comprehensively establish the value of the program while progressively informing program (and evaluation) revision and improvement over time. This flexibly responsive methodology embraced modifications in evaluation procedure including the introduction of new measures to indicate borderline personality disorder and observational tools to directly address the quality of mother-child interactions (section 3.1.3) in addition to implementing additional safety procedures to ethically inform providers of any indicated potential dangers to the mother or child. This was an evolutionary and developmental process culminating in the final production of an inclusively compiled Acorn Program Manual detailing the model and its delivery<sup>4</sup>, and this summative evaluation report.

Given the vulnerability of Acorn participants, and the concern to retain client participation in Acorn, ensuring that the compounding burden of evaluation demands was acceptable and manageable was also a primary concern, and this was monitored through client focus groups and regular interview feedback from Acorn workers. Five focus groups of mothers who had attended Acorn were conducted (between Waves 2-6) comprising of 26 mothers in total with these exploring in more detail mothers' experiences of the program.

Semi-Structured 'follow-up' telephone interviews were also conducted with Acorn mothers from Waves 1-9 six-eight months after completing the program for the purposes of exploring the sustainability of Acorn outcomes and to obtain mothers' reflections on the subsequent impact of the program for them.

Capacity training in evaluation, procedures for the evaluation and developing program logic were delivered to Acorn staff periodically and all staff were presented with on-going evaluation findings bi-annually. Moreover, the evaluator has engaged with Acorn staff and the Reference Group to acquire a thorough understanding of the program history, rationale, and evidence base informing Acorn's strategies. This has included liaison with former stakeholders engaged in earlier Acorn model design and delivery<sup>5</sup>. Collaborative meetings to inclusively develop the evaluation, review program objectives and program logic for Acorn were also conducted periodically. Staff were also formally interviewed on three occasions to explore their perspectives and interpretations of program/evaluation operations and outcomes with issues and learnings being both 'workshopped' with staff and included as part of the evaluation feedback cycles to the Reference Group<sup>6</sup>.

This summative report addresses findings from the first eleven Waves of Acorn up until the program was suspended following the initial surge of COVID in South Australia in early 2020. While some clients went on to repeat the program, the findings presented are largely for the first attendance of the Acorn program to provide clear indications of its value as a single intervention for the targeted population.

<sup>4</sup> Available on request through the Hopscotch Foundation

<sup>5</sup> Acknowledgement and thanks to Mandy Seyfang, Mental Health Therapist, University of South Australia and her colleague Neil Underwood, the originators of the Acorn program.

<sup>6</sup> Examples are available on request.



# 3.0 Evaluation Design & Methodology

## 3.1.2 Rationale for the selection of a Participatory Action Research Evaluation

There were a range of factors considered in choosing to adopt PAR for this evaluation. Acorn is a multi-faceted, multi-site, community-based holistic program delivered by multi-disciplinary teams addressing a heterogeneous client base. Given these complexities the importance of utilizing the evaluation formatively was recognised in anticipation that program processes and early outcomes would need to be monitored closely to enable any issues to be identified and relayed to the Reference Group for consideration and potential program revision.

The structure of the program being delivered in semesters of Acorn groups across the sites twice annually, effectively enabled 'waves' of evaluation data to be collected<sup>7</sup> with each completed semester with opportunities in-between for evaluation feedback to be considered and acted upon in a timely manner by the program team. Moreover, the geographical dispersion of the various Acorn groups necessitated enlisting the partnership of the service providers to administer and collect the range of evaluation data needed. The need to establish partnership in this endeavour and in the implementation of action research cycles to actively interpret, reflect and act upon evaluation findings was clearly apparent<sup>8</sup>.

## 3.1.3 The Evolution of the Model and Evaluation

This Acorn evaluation report follows three previously compiled formal reports presented to AnglicareSA since the evaluation commenced which detailed and subsequently reviewed a series of 'action points' emanating from evaluation findings, many of which have been embraced by the Acorn program<sup>9</sup>. In addition, the evaluation has also evolved to embrace several methodological revisions including; the early adoption of the Karitane Parenting Scale (section 3.3.4), redesigning the Pre & Post Client Self-Completion Questionnaires to accommodate participants with more than one child attending Acorn, introducing the McClean Screening instrument to identify mothers indicating Borderline Personality Disorder in the pre-measures from Wave 4 (section 3.3.6), and the inclusion of the NCAT observational tool from Waves 6-10 to directly measure the quality of mother-child interaction including child

behaviour (section 3.3.5). The evaluator also played a central role in helping to organise formal training and certification of Acorn Mental Health Clinicians in the application of the NCAT tool. Administration, data collection and analytic procedures have been revised to accommodate these changes with each revision being ethically ratified.

The partnership between the Acorn team and evaluator has been reflected in tangible outputs generated during the evaluation of the program. Findings from the Acorn evaluation have been presented by ARP and Acorn staff at conferences in Australia and overseas and have appeared in a peer reviewed international journal<sup>10</sup> with future publications pending.

Action Research Partnerships was also further engaged to enlist assistance from an Aboriginal researcher to provide a formative evaluation of the related 'Sacred Little Ones' program for Aboriginal mums and their young children in 2018; the evaluation report for this was provided separately<sup>11</sup>.

## 3.1.4 Ethics

The conduct of this evaluation including any revisions have fully conformed to the Australian Code for the Responsible Conduct of Research (2007), the Australasian Evaluation Society Ethical Guidelines and the ICC/ESOMAR International Code of Marketing and Social Research Practice (2001). The Bellberry Human Research Ethics Committee has reviewed and approved all aspects of this evaluation (2014-09-509-PRE-3) in accordance with the National Health and Medical Research Council's National Statement on Ethical Conduct in Human Research (2007, incorporating all updates as at 2018).

7 For the purposes of this report each semester is referred to as a 'Wave'

8 For a further discussion see section 11.0

9 Revisions to the Acorn model have been documented by AnglicareSA management throughout the program's development and are not detailed in this report.

10 Underwood, N., Aylward, P., Yelland, C., Chance, S., Collins, L., Byrne, L., Pollard, C. (2015) The Acorn Initiative: Working on the Intersubjective space of the parent-infant dyad. Australasian Marce Society Conference, Adelaide, October.

Aylward, P. (2018) The Value of the AnglicareSA Acorn parenting program for mums with mental health issues and their young children. 39th Australian Family Therapy Conference Sydney (October 11th).

Aylward P. *An integrated group parenting model for mums with mental health issues and their babies: Findings from a participatory action research evaluation of the South Australian Acorn Program*. International Journal of Integrated Care. 2019;19(4): doi.org/10.5334/ijic.s3001

Aylward, P. & Sved Williams, A. (2021) Can on-line mental health programs replace face-to-face group mental health programs? Lessons from the ACORN parenting program. SA Population Health Conference (October 21st)

Muhammad, Z. & Reinschmidt, A. (2019) *Acorn Parent Infant Attachment Groups*. Anglicare Australia Conference – Our Stories, The Power to Change, 9 – 11 September

11 Aylward, P & O'Donnell, K: 'AnglicareSA Sacred Little One's Aboriginal Parenting Program Formative Evaluation'. December 2018.



## 3.0 Evaluation Design & Methodology

### 3.2 Data collection methods

#### 3.2.1 Mother Self-Completion Tools

Pre and post program data from Waves 1-11 was obtained through a battery of Client Self-Report Instruments. Several considerations informed the selection of the standardised psychometric tools for the evaluation from the outset including: the ability of the tool to provide reliable, valid, and relevant indications of outcome achievements over time; the appropriateness of the tool for application with vulnerable Australian mums of children aged 0-36 months of mixed educational and cultural backgrounds; the ease of administration and completion for participating subjects in a community-based group setting.

All evaluation tools were completed individually and sealed in envelopes to ensure and demonstrate confidentiality. Post-measures were applied in the penultimate Acorn session for each group. The applied tools were:

- Client Self-Completion Questionnaires
- The Parenting Stress Index Short Form [PSI-SF] (R. R. Abidin, 1995)
- The Patient Health Questionnaire [PHQ-9] (K. Kroenke, R. Spitzer, & W. Williams, 2001a)
- The Karitane Parenting Confidence Scale [KPCS] (R. Crncec, Barnett, & Matthey, 2008a)

Following reference group deliberations and concerns that the condition was under-diagnosed in the community, the McLean Screening Instrument for Borderline Personality Disorder [MSI-BPD], (Zanarini MC et al 2003) was applied from Wave 4 as a pre-measure only to identify likely cases to enable the value of the Acorn program for this particularly vulnerable group of mums to be explored.

#### 3.2.2 Standardized Observations

The need to include an observational measure which directly addressed the quality of the parent/child interaction and included an assessment of child behavioural outcomes for children within the Acorn age range was also identified<sup>12</sup>. The NCAST Parent-Child Interaction Teaching Scale [NCAT] (Sumner & Spitz, 1994), was introduced in Wave 6 following a revision of the program to include a formal individualised home assessment pre and post Acorn which facilitated its administration by the program Mental Health Clinicians.

The NCAT was applied by observing video of the caregiver-child interaction at home in which the mother introduces a novel developmentally appropriate task to the child. The Mental health Clinicians who used the tool for this evaluation completed a three-day structured training program delivered by NCAST certified instructors and obtained inter-observer reliability greater than or equal to 90% which accredited them to apply the tool for clinical or research purposes; re-certification is required and has been conducted annually. Pre and post assessments of the video recorded observations were conducted by different certified Mental Health Clinicians.

#### 3.2.3 Follow-up telephone interviews

Semi-Structured 'follow-up' telephone interviews were conducted six-eight months after completing the program for the purposes of exploring sustainable outcomes from the program. This enabled a broad geographical coverage of former clients across all Acorn sites in a cost-effective manner, with interviews being conducted at convenient times for the participants (often evenings). Consent to be approached for a follow-up telephone interview was sought from mums at the beginning of the program and consenting mums provided their contact numbers for this purpose. There were up to four 'call-backs' at different times and days to attempt contact with consenting mums; where an answering service was available up to two messages were left to attempt arrange contact.

Participants were interviewed by an independent trained female interviewer with professional experience in maternal mental health service provision who was unknown to the participant. Telephone interviews were semi-structured, with the length of interview varying between 25-60 minutes. For open-ended questions, responses in words were recorded verbatim.

#### 3.2.4 Client Focus groups

Five focus groups of mums who had attended Acorn were conducted (between Waves 2-6) comprising of 26 mums in total. The focus groups were heterogeneous with attending mums aged 25-38 years having differing educational backgrounds, being a mixture of married/de facto and single participants and receiving Government benefits and waged household incomes. All these participants spoke English language at home.

<sup>12</sup> A range of tools were considered in order to triangulate with mothers self-reported measures.



## 3.0 Evaluation Design & Methodology

### 3.3 Applied Evaluation tools

*The following tools were adopted for the evaluation.*

#### 3.3.1 Client Self-Completion questionnaires & Follow-up Interview Schedule

Pre Acorn semi-structured questionnaires elicited data addressing the following: Demographic and family background: a brief scale addressing perceived current abilities across itemized sub-objectives (e.g. *Identifying my child's needs, Ability to respond appropriately to my child's needs and behaviours, Ability to reflect on how my current health impacts on my relationship with my child*); and Likert Scale items for mums to indicate personal reasons for attending Acorn (e.g. *I would like to be able to interact better with my child/children, I need more confidence as a parent, I would like our family to be more independent and resilient*).

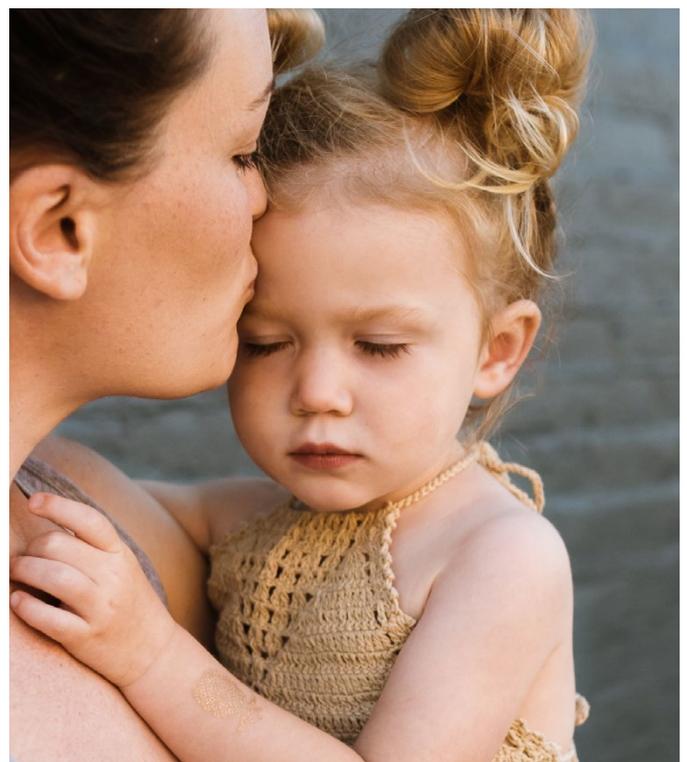
Post Acorn semi-structured questionnaires completed in the penultimate Acorn session concerned a range of process and outcome indicators from the perspective of participating Acorn mums. Process evaluation addressed the appropriateness, suitability and perceived worth of the venue, group size, approaches used, clarity of materials and explanations, the pace of the session, the degree to which opportunities were available to discuss parenting experiences, the perceived level of understanding of the facilitators, the degree to which Acorn mums felt respectfully treated, and the extent to which they felt relaxed and safe while attending the program. Outcomes were addressed using constructed scales and open-ended questions. A Likert scale itemising sub-objectives (e.g. *I interact better with my child because of attending this group; The group has helped me to cope better as a parent; I made friends with other parents in the group*); and a separate scale under the heading 'For each area, please indicate the extent to which your current parenting abilities or experiences have improved (if at all) as a result of attending the group', with this including items drawn from aspects of parenting and attachment theories (e.g. *Identifying my child's needs; Understanding my child's need to be in a close relationship with me; Feeling comfortable with my child exploring the world through play; Ability to reflect on how my current health impacts on my relationship with my child*'). Mums were also asked to indicate the extent to which they would recommend an unchanged Acorn program to their peers.

Scales included negatively worded items (e.g., *The group was not very helpful for me; There were too many parents in the group for things to work properly*), to provide an indication of diligence in client response, and an item referring to the usefulness of the 'Watch, Wait and Wonder' DVD, used in the first Wave of Acorn only, was also retained for subsequent Waves for this reason.

Both pre and post questionnaires included open-ended questions to encourage mums to clarify or expand upon their answers. Qualitative data was also obtained by asking mums to describe the strengths and weakness of Acorn, and to offer any suggested improvements. In conclusion mums were asked *What would you say are the most significant changes in your parenting and your family life as a result of attending the group?*

Self-completion questionnaires were piloted with a sub-sample of clients in Wave 1 and found to elicit high item response rates. Content validity was established with the program team and face validity explored through employing a cognitive interviewing technique in the first focus group of Acorn mums. Mental Health Clinicians were encouraged to assist mums to understand the questionnaires with strict instruction not to influence responses or undermine the confidentiality of client responses.

The questions and scales included in the follow-up interview schedule mirrored those of the post client self-completion questionnaire to enable direct comparisons with the responses provided at the end of the Acorn program. Participants were prompted by the interviewer to delineate their response for each scale (e.g., to state their 'degree' of agreement or disagreement with each item).





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### 3.3.2 Parenting stress index-short form [PSI-SF] – (R.R. Abidin, 2012)

Directly derived from the full-length Parenting Stress Index (PSI) from which all 36 items are drawn verbatim, the PSI-SF measures stress in the parent child system for parents with children aged one month to 12 years. Translated into over 40 languages the PSI has been validated with a broad range of populations and cultures. The PSI is designed to be self-completed in around 10 minutes and correlates highly with the full-length PSI (.98).

Using a 5-point Likert format, parents indicate the extent of their agreement or disagreement with each item pertaining to one of three 12 item subscales. A Total Parenting Stress score is derived from summing the three subscales. Scores are interpreted relative to percentiles from a normative sample which for each sub-scale and the total provide indications of ‘Clinically Significant’, ‘High’, ‘Normal Range’ or ‘Low’ levels for each respondent, (R.R. Abidin, 2012 Chapt 4).

Each of the subscales is defined as follows:

- **Parental Distress:** the distress parents experience in their role as a function of personal factors that are directly related to parenting such as perceived child-rearing competence, conflict with their partner, social support, and stresses associated with restrictions placed on other life roles. Example items are: “*I feel trapped by my responsibilities as a parent*”; “*I often have the feeling that I cannot handle things very well*”; “*I find myself giving up more of my life to meet my children’s needs than I ever expected*”.
- **Parent–Child Dysfunctional Interaction:** the degree to which the mother perceives their child as not meeting expectations and that interactions between them are not reinforcing. Scores in 96<sup>th</sup> percentile or higher for ‘parent-child dysfunctional interaction “suggest potential for abuse in the form of neglect, rejection or episodes of physical abuse triggered by frustration”<sup>13</sup>.  
Example items are: “*When I do things for my child, I get the feeling that my efforts are not appreciated very much*”; “*Sometimes my child does things that bother me just to be mean*”; “*I expected to have closer and warmer feelings for my child than I do, and this bothers me*”.
- **Difficult Child:** the parent’s perception of the behavioural characteristics of the infant that makes him/her either easy or difficult to manage. Example items are: “*My child turned out to be more of a problem than I had expected*”; “*My child makes more demands on me than most children*”; “*My child reacts very strongly when something happens that my child doesn’t like*”.

The PSI-SF includes a ‘Defensive Responding Scale’ which reflects the extent to which a respondent is bias toward presenting the most favourable impression and toward minimising indications of stress or problems in the parent-child relationship (ibid p.59). Respondents scoring 10 or below on this scale are designated ‘Defensive Respondents’, and the interpretation of these replies requires further inquiry.

The PSI-SF has good psychometric properties with Cronbach’s alpha for the three subscales and total score ranging from .80 to .91; a 6-month test–retest reliability ranging from .68 for ‘Parent-Child Dysfunctional Interaction’ to .85 for Parental Distress, with Total Parenting Stress having a coefficient of .84. Extensive validity data for the PSI-SF are presented in the test manual (R.R. Abidin, 2012).

### 3.3.3 The Patient-Health Questionnaire 9 [PHQ-9] – (K. Kroenke, R. L. Spitzer, & J. B. Williams, 2001b)

The PHQ-9 is the nine-item depression module taken from the larger Patient Health Questionnaire (PHQ) which is a self-administered version of the Primary Care Evaluation of Mental Disorders (PRIME-MD) diagnostic instrument for common mental disorders. The PHQ-9 focusses exclusively on the 9 diagnostic criteria for DSM-IV depressive disorders, scoring each as ‘0’ (not at all) to ‘3’ (nearly every day). A total score of  $\geq 10$  has a demonstrated sensitivity of 88% and specificity of 88% for major depression, with scores of 5, 10, 15 and 20 validly demarcating the lower limits of mild, moderate, moderately severe and severe depression (Kroenke et al., 2001b).

The diagnostic validity of the PHQ has been demonstrated in 2 studies involving a total of 6,000 patients in clinical settings, (R.L. Spitzer, Kroenke, & Williams, 1999; R.L. Spitzer, Williams, Kroenke, Hornyak, & McMurray, 2000). Cronbach’s alphas of .89 and .86 have been calculated, with test-retest reliability of .84; criterion, construct, and external validity have also been clearly demonstrated for the tool (Kroenke et al., 2001b). Construct validity of the PHQ-9 has also been demonstrated across many countries and languages (Muñoz-Navarro et al., 2017). A clinically significant improvement from a clinical to non-clinical score can be calculated by obtaining a post-treatment score of  $\leq 9$  combined with an improvement of 50% or more (Kroenke et al., 2001b).

In addition to providing criteria-based indication of depressive disorders, the PHQ-9 is also a reliable and valid measure of depression severity. These characteristics plus its brevity make the PHQ-9 a useful clinical and research tool (Kroenke et al., 2001b).

<sup>13</sup> Where this occurred the relevant Mental Health Clinician was informed of the client code.



## 3.0 Evaluation Design & Methodology

### 3.3.4 The Karitane Parenting Scale [KPCS] – (R. Crncec et al., 2008a)

The KPCS was used to assess Perceived Parental Self-Efficacy (PPSE) in parents with infants aged 0–12 months. Designed to be easy to administer, complete, and score, this simply worded 15 item self-completion scale was developed using an Australian population of mothers including participants from culturally and educationally diverse backgrounds (R. Crncec et al., 2008a). Grounded in Bandura's self-efficacy theory (Bandura, 1997), the items in the KPCS follow his recommendation to be of a 'task specific' nature, which is considered to imbue a greater sensitivity and predictive validity for scales addressing 'self-constructs' (P. K. Coleman & Karraker, 2003; R. Crncec, Barnett, & Matthey, 2010). Example items include, "I can sooth my baby when he/she is distressed", "I know what to do when my baby cries", "I am confident about playing with my baby". The items are scored 0 'No, hardly ever', 1 'No, not very often', 2 'Yes, some of the time', or 3 'Yes, most of the time', with scores summed to produce a total score with a possible range between 0-45. Higher scores indicate greater Perceived Parental Self-Efficacy with clinical cut-off scores as follows: 'severe clinical' range <31, 'moderate clinical' range 31–35, 'mild clinical' range 36–39, and 'non-clinical' range ≥40. A 'reliable change index score' (Jacobson & Truax, 1991) of six points was established to determine clinically meaningful changes in the total score.

The tool has demonstrated Cronbach's alpha of 0.81, and the test-retest reliability is 0.88. with established psychometric properties of convergent and discriminant validity (Rudi Crncec, Barnett, & Matthey, 2008b; Kohlhoff & Barnett, 2013). The KPCS has been translated into several languages (R. Crncec et al., 2010) and has been found to be a valid and reliable measure of parenting self-efficacy across different cultural groups (Usui, Haruna, & Shimpuku, 2019).

### 3.3.5 Nursing Child Assessment Satellite Training (NCAST) Teaching Scale [NCAT] – (Sumner & Spitz, 1994).

The NCAT observation tool was developed to assess the quality of the interaction between a parent and young child (up to 36 months). The NCAT is theoretically grounded in the Barnard model (K. Barnard & Martell, 1995; K. E. Barnard et al., 1989) conceptualising the caregiver-child interaction as a reciprocal dialogue in which quality is defined and created by the contributions of both participants (Byrne & Keefe, 2003).

The NCAST Teaching scale (NCAT) is comprised of 73 binary items across six subscales assessing each participant's contributions to the interaction. Four subscales address caregiver contributions: 'Sensitivity to Cues' (11 items), 'Response to Distress' (11 items), 'Social Emotional Growth Fostering' (11 items), and 'Cognitive

Growth fostering' (17 items); Two subscales address the contributions of the child: Clarity of Cues (10 items) and Responsiveness to Caregivers (13 items). The scores from 32 selected items are summed to provide contingency scores for each participant addressing proximate behaviours of caregiver and child in response to the stimuli from one another. Total scores are obtained for the mother alone, child alone, and mother-child combined.

The NCAT has acceptable internal consistency for the totalled scales with Cronbach's alphas of .87 for 'Caregiver Total', .81 for 'Child Total', and .87 for 'Caregiver/Infant Total', and these hold for Caucasian, African American and Hispanic/Latina samples. Contingency scores for mother and child have Cronbach's alphas of .82 and .77 respectively. The consistency for subscales tends to be lower (ranging between .50 to .80) and may provide a less reliable basis than the totals for comparing change over time. Test-retest reliability displays consistency for the 'Caregiver Total' at .85 and for the 'Child Total' at .55.

The NCAT has displayed significant concurrent construct validity and large effect sizes with a range of other measures across different cultural and clinical populations, and the 'Caregiver Total' has strong predictive validity with measures of 'maternal support', and measures of 'maternal reflective functioning' with effect sizes ranging from .52 to .60. (Byrne & Keefe, 2003; Nicole L Letourneau et al., 2018; Oxford & Findlay, 2013; Sumner & Spitz, 1994). 'Caregiver/Infant Total' scores also predicted insecure attachment on a national longitudinal sample (Zaslow et al., 2009). Meta-analysis has established the NCAT as a reliable outcome measure for interventions addressing parent sensitivity (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2008); a central parenting concept in attachment theory and a key determinant to promote parent-child attachment (Ainsworth et al., 1978; Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2017).

A normative database has been established for the NCAT using a large US sample of 1887 dyads from a range of ethnic, educational, and familial backgrounds. This enables assessed dyad scores to be converted to standard deviations on the NCAST database using child's age (1-12 months and 13-36 months) and mother's education level. A recent study comparing Canadian data from normative and high-risk families (including depressed mothers, low-income families, and Aboriginal dyads) has found that the NCAST database represents reasonable estimates of parent-child interaction quality. While conceding that the application of any tool's findings to different sample distributions will inevitably result in a degree of measurement error, the authors conclude that it is still optimal to reference this American database (Nicole L Letourneau et al., 2018).



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### 3.3.6 The McLean Screening Instrument for Borderline Personality Disorder [MSI-BPD] - (Zanarini et al., 2003)

The MSI-BPD is a 10 item self-report measure for BPD based on *DSM-IV* BPD criteria. Each endorsed item scores 1 point with a score of 7 or more indicating likely BPD. The tool has demonstrated good sensitivity (.81) and specificity (.85). For young adults between the ages of 18-25 years diagnostic efficiency of the tool was higher; sensitivity .90 and specificity .93. The tool has demonstrated good test-retest reliability (.72) with a Cronbach's alfa of .74.

The MSI-BPD has demonstrated adequate criterion validity compared to clinically administered diagnostic interview, and there is support for the tool being used as a screening instrument for BPD in ethnically diverse community based studies (Patel, Sharp, & Fonagy, 2011).

The MSI-BPD was administered as a screening tool to identify likely BPD cases from Wave 4.

### 3.4 Data Analyses

Quantitative data were analysed using IBM SPSS Statistics Version 25. Paired samples *t* tests were employed in analyses to assess change from pre to post measures for all the standardized tools applied. A two-tailed statistic was employed as a more conservative test and strength of association is presented using Cohen's *d* (Cohen, 1988). Where available, scores are compared with normative data for interpretive purposes and the 'reliability change index score' (KPCS) and 'clinically significant improvement' figures (PHQ-9) are also provided. Where samples are relatively small, a robust bootstrapping technique was employed (Efron & Tibshirani, 1993; Wright, London, & Field, 2011). We also conducted analyses addressing sub-populations which we hypothesised would be most vulnerable: Mothers indicating BPD, mothers from households that spoke a language other than English at home, mothers with 2+ children under the age of 36 months, single mothers (due to greater isolation), those whose households received Government benefits as the main source of income, and mothers whose highest level of education was Year 12 or below (given socio-economic factors moderate the effects of maternal mental illness on parenting).

Manifest quantitative content analysis (McBurney & White, 2010) was conducted on written responses to all 'open-ended questions and for this report we focus on the question *'What would you say are the most significant changes in your parenting and your family life as a result of attending the group?'* provided in the post self-completion questionnaire. Responses were coded as they emerged, clustering these into categories and presenting frequencies of category usage based on numbers of respondents (Roessger, 2017). The aim here was to identify the extent that mothers expressed shared views of the most significant impact of Acorn in their lives. The categories developed were then applied as a coding framework to responses to the same question in the follow-up survey to enable comparison. Indicative examples are provided as quotations in this report<sup>14</sup>.





## 4.0 Client Participation

*A total of 493 individual mothers and 520 children have participated in at least one of the 83 Acorn groups delivered over eleven Waves to date. 388 (78.7%) mothers completed the Acorn program with 353 (91.0%) of completing mothers providing both pre and post evaluation measures. Over the course of the program 35 mothers completed the program but did not provide post measures, 13 of whom took part in the 'follow-up' survey six-eight months after completing the program. 105 (21.3%) mothers withdrew from the program prematurely and did not provide post measures, eleven of whom repeated the program later. A total of fifty-one mothers went on to attend Acorn on a second occasion; unless otherwise stated the analyses below is restricted to their first occasion attending Acorn.*

At the beginning of the program, 357 mothers from Waves 1-9 (91.3%) consented to being approached to participate in a 'follow-up' telephone interview six to eight months after completing Acorn and provided their phone number for this purpose. Of these 142 were unable to be contacted after four telephone attempts, 64 declined to be interviewed (over half of whom had withdrawn from the program and typically indicated they did not have enough experience of the program to comment) and 16 agreed to be interviewed later but were subsequently unable to be contacted. A total of 135 mothers across 10 localities were interviewed (a response rate of 37.8% of all those who originally consented; for those able to be contacted at least once, the response rate was 62.8%)<sup>15</sup>. The demographic and psychological profile indicators for those agreeing to be interviewed was very similar to the broader group of completing participants.



<sup>15</sup> These telephone response rates compare very favorably with other studies using this method (Bednall, Spiers, Ringer, & Vocino, 2013; Keeter, Hatley, Kennedy, & Lau, 2017), particularly so given the severity of the issues experienced by many mums who have sought help from the ACORN program.



## 5.0 Program Scope

### 5.1 Program Referral

Acorn has benefitted from a broad referral base (Table 1) including: Child and Family Health Services, Perinatal and Infant Mental Health Services broadly and a specific acute mother-baby unit (Helen Mayo House), general hospitals, private psychiatric and psychology consultants, General Practice networks and individual GP practices, government run agencies and non-government community-based programs. Acorn mums were referred and accepted on the basis that they had a diagnosed mental health difficulty that impacted on their relationships with their children who were aged 0-36 months.

**Table 1:** Recorded Referral Sources Waves 1- 11

CaFHS	134
HMH	69
Private Psyc/Practitioner	59
StayAtt	44
WCH	32
FMC	23
PIMHEC	21
GP	14
Non-Anglicare Programs	14
ACORN	13
Anglicare Programs/Staff	13
SummitHealth	11
Health Services	10
Centacare	7
Other Hospitals (3)	5
SA Health	4
CYH	4
Childcare Centres	4
Family Support Services	4
Families SA (specified)	2
Nunkuwarnin Yunti	2
<b>Total Referrals Recorded</b>	<b>489</b>

Specific referral sources and figures for each Wave were presented periodically to the Reference Group and client numbers quickly increased from 24 in Wave 1 to 55 in Wave 11 with all eligible referrals being admitted to the program in each Wave.

Referral pathways have clearly been established. The five largest referrers of clients have done so over the duration of 5.5 years in which Waves 1-11 of the program have been delivered. In the case of the Child and Family Health Service (CaFHS) and Helen Mayo House (HMH<sup>16</sup>), clients with maternal mental illness were referred consistently for every Wave of the Acorn program. The breadth of referring agencies ongoing relationship with the program signifies both an established awareness of Acorn and confidence in its effectiveness across the relevant sector.

### 5.2 Acorn Group Localities and Client Participation

The eleven waves of the Acorn program have been delivered at 15 localities across geographically dispersed locations in metropolitan and outer metropolitan Adelaide suburbs (Table 2), with the most popular groups being held in Norwood, Darlington, and Mt Barker.

**Table 2:** Acorn Client Enrolment by Locality

	Number of Enrolled Mums	%
Norwood	67	13.6
Darlington	62	12.6
Mt Barker	62	12.6
Gilles Plains	61	12.4
Aldinga	45	9.1
Cowandilla	36	7.3
Woodcroft	35	7.1
Gawler	34	6.9
Salisbury North	30	6.1
Elizabeth	21	4.2
Pennington	13	2.6
Lake Windemere	9	1.8
Munno Para	8	1.6
Forbes	6	1.2
Seaton	5	1.0
<b>Total</b>	<b>493</b>	<b>100.0</b>

<sup>16</sup> HMH is an inpatient hospital facility for mothers with significant mental health problems in the postnatal period <https://www.wchn.sa.gov.au>.



# 5.0 Program Scope

## 5.3 Participant Characteristics

### 5.3.1 Baseline Demographics

The mean age of the 493 attending mothers was 30.8 years (SD 5.6). The 520 children averaged age 9.1 months (SD 7.1) on commencing the program (including one family of triplets<sup>17</sup>). Figures 1 and 2 provide the age distributions of mothers and children.

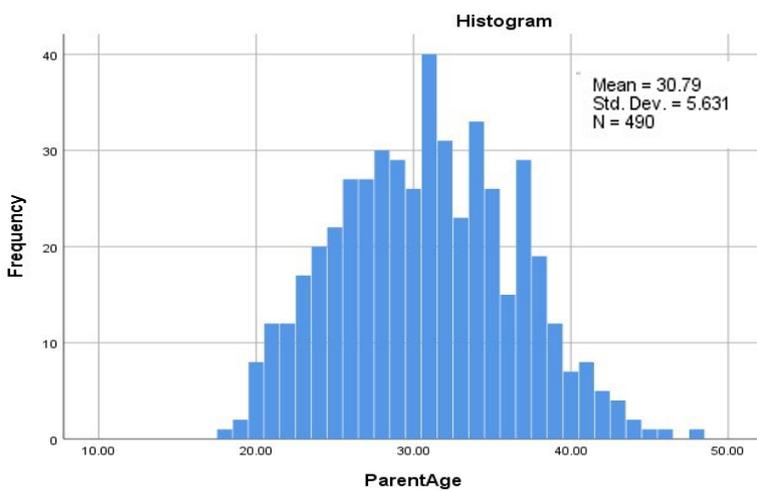
Children aged 30 months or less at the beginning of the program were eligible for Acorn to ensure completing children were aged at a maximum of 36 months. While 38 mothers had a second child aged 30 months or less and were eligible for the program 27 mums brought a second child to the program and 7 of these were aged between 31-33 months on commencement.

Acorn recruits a wide variety of mothers from a broad spread of socio-economic, familial, cultural, and educational backgrounds (Table 3). Most mothers (65.1%) had a single child, but 131 mothers had two children and 40 mothers had more than two children. Twenty-seven mothers brought a second child to the program including 4 sets of twins and one triplet. One hundred and two mothers (20.9%), were single (15.2%), separated or divorced with 371 (76.4%) indicating being married (240 mothers) or in a de facto relationship (131 mothers).

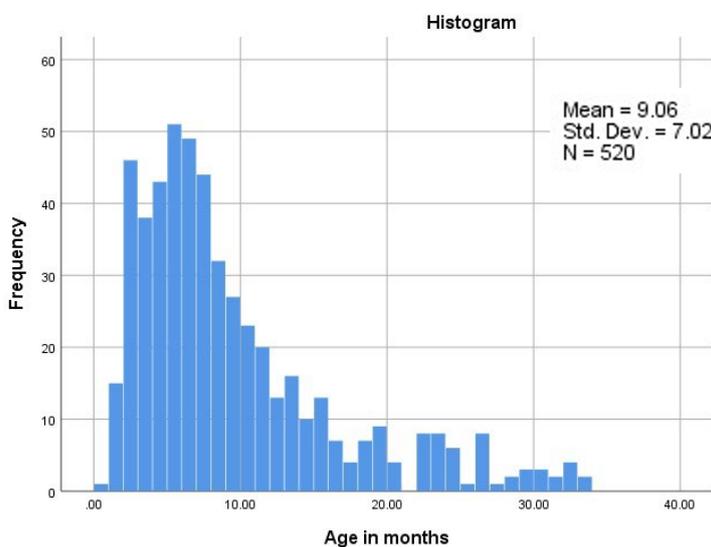
For most participants (315 mothers), the main source of household income was wages earned by themselves or their partner (64.0%), but 175 mums, just over one third (35.6%) indicated receiving 'government benefit, pension or allowance' as their main household income, including the large majority of single, separated, or divorced mothers (84.0%). 134 mothers (27.2%) had reached only up to year 12 schooling, more than half of whom (73 mothers) having left school at year 11 or earlier; 153 mothers (31.1%) had reached university degree level. 151 mothers (30.6%) described their employment status as 'full-time parent', with an additional 78 (15.9%) indicating they were 'unemployed looking for work' or 'not working' (11.2%); 76 (15.4%) mothers indicated they were still working while attending Acorn.

Most of the participating mothers (88.1%) were born in Australia, fourteen of whom indicating they were from Aboriginal Torres Strait Islander background. However, 74 mothers (15.1%) indicated speaking one of 22 different recorded languages other than English at home, with these spanning five different continents.

**Figure 1:**  
Distribution of attending Mothers' Ages (Years)



**Figure 2:**  
Distribution of attending Child Ages (Months)



<sup>17</sup> An additional child attended Acorn who was above the age of 36 months on commencing the program is not included in the analysis.



# 5.0 Program Scope

Table 3: Baseline Characteristics of ACORN Participants

Baseline Demographics (N=493 mothers; 520 children)	
Characteristic	M (SD)
Mother's age (years)	30.8 (5.6)
Attending Child's age (months)	9.1 (7.1)
Mother's education level reached:	%
Yre 10 or lower	8.9
Yre 11	5.9
Yre 12	12.4
Tafe or College	39.6
University	31.1
Marital Status:	
Single/Separated/Divorced	20.9
Partnered	76.4
Heritage:	
Born Outside Australia	11.9
Non-English Language Spoken at Home	15.1
ATSI	2.8
Mother's Employment:	
Full-time parent	30.6
Unemployed seeking work/Not working	15.9
Currently working	16.2
On-leave from work	27.0
Studying	3.4



Baseline Psychological Profile Indications	
Characteristic	%
Depression: PHQ-9 [n=486]	
- Depression Symptoms	87.2
- Minor Depression – Major Depression mild	25.7
- Major Depression Moderately severe	17.7
- Major Depression severe	12.5
Perceived Parental Self-Efficacy [KPCS, n=394]	
child ≤ 1 year at pre-measure – 'At least to a Clinical Level'	80.2
child ≤ 1 year at pre-measure – 'Severe Clinical level'	24.4
Parenting Stress [PSI-SF, n=485] 'Clinically Significant' or 'High'	
Total Parenting Stress	16.9
Parental Distress	54.4
Parent-Child Dysfunctional Interaction	12.4
Difficult Child	12.2
Borderline Personality Disorder Indicated [MSI-BPD, n=279]	30.4
Quality of Parent/Child Interaction [NCAT > -1 SD] [n=191 dyads observed]	
<i>Mother (Caregiver)</i>	
Sensitivity to Cues	21.9
Response to Distress	27.7
Socio-Emotional Growth Fostering	42.4
Cognitive Growth Fostering	48.2
Caregiver Total	37.7
<i>Child</i>	
Clarity of Cues	23.0
Responsiveness to Caregiver	24.6
Child Total	27.7
Caregiver/Infant Total	36.6
<i>Contingency</i>	
Mother	41.4
Child	17.8



# 5.0 Program Scope

## 5.3.2 Baseline Psychological Characteristics

Acorn is engaging with a profile of mums where depression, poor perceived parental self-efficacy, and high parental distress levels are causes of concern and which for many indicate the need for clinical intervention. On commencing Acorn, 424 (87.2%) of enrolled Acorn mothers indicated they had depressive symptoms on the PHQ-9 scale with 272 (55.9%) indicating at least ‘minor depression/major depression mild’ and 147 (30.2%) indicating ‘moderate-severe major’ depression. Of the 394 mothers with an attending child aged 12 months or less at the beginning of the program, 316 (80.2%) had clinically low perceived parental self-efficacy in relation to their youngest (and in most cases only) child attending Acorn with 96 (24.4%) indicating ‘severe clinical’ on the KPCS scale.

Many of the Acorn mothers were experiencing ‘clinically significant’ or ‘high’ levels of stress as measured by the PSI-SF, most commonly ‘Parental Distress’ with 264 Acorn mothers (54.4%) indicating ‘clinically significant’ (50.0%) or ‘high’ on that domain. Eighty-two Acorn mothers (16.9%) indicated these levels for ‘Total Parenting Stress’. ‘Clinically significant’ or ‘high’ levels were also indicated in the domains ‘Difficult Child’ by 59 mothers (12.2%), and for ‘Parent-Child Dysfunctional Interaction’ by 60 mothers (12.4%) with 21 of these scoring in the 96<sup>th</sup> percentile or higher<sup>18</sup>. None of the mothers scored 10 or less on the Defensive Responding scale.

One hundred and thirteen Acorn mothers (30.4%) indicated BPD in the pre-measure from Wave 4 using the MSI-BPD. These mothers had a similar demographic profile to other Acorn mothers in terms of mean age (29.1 years, SD 5.31), numbers of children, speaking a language other than English at home, education levels, and income source. While the numbers were small, these mothers were more likely to have two children under the age of 36 months (11 mothers, 9.7%) and (subsequently) nine of these mothers brought more than one child to attend Acorn together. Thirty-five mothers (31.0%) indicating BPD were single/separated/divorced, a higher proportion than the broader group. Mothers indicating BPD had significantly higher depression scores on the PHQ-9 than mothers who did not ( $M_{diff}=4.29$ ,  $t(181)=6.16$ ,  $p<.01$ ) and these mothers also scored significantly poorer in their PSI-SF Total and all sub-scale scores. Just over half of the mothers indicating BPD also indicated major depression on the PHQ-9. For those with children aged one year or less at the beginning of Acorn, mothers indicating BPD also performed significantly more poorly in perceived parental self-efficacy as measured by the KPCS ( $M_{diff}=1.85$ ,  $t(127)=2.50$ ,  $p<.05$ ). In these regards, mothers indicating BPD were experiencing considerably more difficulty than their Acorn peers and they constitute a more vulnerable sub-population of Acorn mothers.

Table 3 also presents the findings from the NCAST (NCAT) observations as percentages of mothers and children in each dyad scoring >-1 Standard Deviation (SD) from the mean in the appropriate NCAST normative database. This includes seven observations of mother-sibling dyad where mothers attended Acorn with two children. Acorn dyads performed relatively poorly across most of the observation sub-scales and particularly so for ‘Cognitive Growth Fostering’, with 92 mother assessments (48.2%) scoring >-1SD from the mean, ‘Socio-Emotional Growth Fostering’ (81 assessments), and for the ‘Caregiver Total’ (72 assessments). Forty-four children (23.0%) scored >-1SD from the population mean for ‘Clarity of Cues’ and 47 (24.6%) for ‘Responsiveness to Caregiver’. Fifty-three (27.7%) of the children assessed had a ‘Child Total’ score >-1SD from the population mean. While child ‘Contingency’ scores did not appear to be as troubling, clearly a lot of mothers did not perform well in their contingency behaviours with 79 (41.4%) assessments scoring >-1SD from the mean. Acorn mothers performed relatively better in their ‘Sensitivity to Cues’ with 42 (21.9%) assessments scoring >-1SD from the population mean. However, for the overall quality of the mother-child interaction (‘Caregiver/Infant Total’), 70 dyads (36.6%) scored >-1SD from the mean. Clearly, the quality of the parent-child interaction is impaired for Acorn mothers who commence the program; this lends support to the alignment of referred client needs with the objectives of Acorn.

Fifty-four dyads with mothers indicating BPD were observed using the NCAT in the pre-measure. While performing more poorly in the ‘Caregiver Total’ the above proportions were very similar for these dyads: ‘Caregiver Total’, 25 mothers (46.3%) scored >-1SD from the normative mean; for ‘Child Total’ 14 (25.9%) and for ‘Caregiver/Infant Total’ 20 dyads (37.0%).

Table 4 presents associations using Pearson’s r for the baseline psychometric measures taken for Acorn mothers: levels of depression, perceived parental self-efficacy, the total mother scores in the NCAT (the quality of the mother’s contribution to the parent-child interaction), and the total score and domains addressed in the PSI-SF relating to parenting stress. All but four of the correlations here were significant ( $p<.01$ ). The associations were particularly marked for Parental Distress and Depression sharing 35.2% of variance ( $r^2$ ), and for Perceived Parental Self-Efficacy with Total Parenting Stress, and Parental Distress ( $r^2$  31.9%, and 26.4% respectively). The smallest association for the self-completion tools was ( $r=.22$ ) between Depression and Difficult Child, but this was nonetheless significant at the .01 level. This supports the contention that Acorn mums experiencing difficulties, tend to do so across the various measured characteristics and supports the need for a holistic multi-strategy approach to address these complex issues for this heterogeneous client base.

<sup>18</sup> Where scores were in the 96th percentile or higher the case identifier of the mum was relayed to the Acorn Coordinator within one week of receiving the completed PSI forms and actioned by the coordinator in consultation with the appropriate Mental Health Clinician. This process highlights and advantage of the PAR approach adopted in this evaluation.



# 5.0 Program Scope

Table 4: Correlations of psychometric measures for Acorn Mothers

Pearson's r Correlation Coefficients\*

	PPSE	Total Parenting Stress N=388	Parental Distress N=388	Parent-Child Dysfunctional Interaction	Difficult Child	Difficult
Depression N=486	.464*	.462*	.593*	.313*	.216*	1
PPSE N=390	1	.565*	.514*	.457*	.422*	.464*
NCAT Carer Total N=163	.119	.057	.171*	.103	.133	.231*

\*Significant p<0.01

While the NCAT 'Caregiver Total' score was significantly associated with depression scores ( $r = .231$ ), and Parental Distress ( $r = .171$ ), these associations were weaker. This would suggest that some of the Acorn mums experiencing higher order issues with perceived parental self-efficacy and total parenting stress performed at a similar level on the NCAT to those mums who were experiencing these problems to a lesser degree (but generally poorly overall, compared to the NCAT normative database).

### 5.3.3 Client Withdrawal

105 mothers (21.3%) withdrew from Acorn prematurely and did not provide post measures<sup>19</sup> with twelve of these re-enrolling later. However, 42 mothers who were recruited to the program over its duration did not attend any of the formal Acorn group sessions. Six of the fourteen Aboriginal mothers withdrew from the program with one of these switching to another program specially for ATSI families<sup>20</sup>. The rate of withdrawal has declined over the duration of Acorn from 28.3% (Waves 1-3) to 20.8% (Waves 4-6) to 17.3% (Waves 7-11). Reasons for withdrawal were recorded either through consultation between the clinician and mother prior to leaving the program or via telephone conversation with the Acorn coordinator. Despite these attempts, 33 mothers did not provide a reason for withdrawing due to being uncontactable, including 19 who did not attend any program sessions. Client withdrawal does not appear to be related to indicating BPD on commencing Acorn with 24 withdrawing mothers assessed since Wave 4 indicated BPD (34.3% of all withdrawing mothers since this wave).

Of the 72 mothers from whom reasons for withdrawal were obtained 26 (36.1%) cited a personal health reason for leaving (20) or the health of a family member (6) with three of these returning to hospital and an additional three indicating health among other reasons. One of these mothers left to give birth to a second child midway through the program. However, most reasons provided for leaving the program were circumstantial. These included 15 mothers who indicated returning to work or starting study, 14 indicating they had other obligations at the same time as the group (were simply 'too busy' with other things or specifying demands from older children or time clashes with other scheduled activities), and 8 moving away from the area or started travelling. Eight mothers indicated that they felt well enough to stop attending Acorn. Other miscellaneous circumstantial answers included: leaving the group because a friend had left, finding the travel distance too far, a disabled mother encountering difficulties following changes to her travel arrangements and changes in domestic arrangements.

<sup>19</sup> Four mothers 'withdrew' but re-engaged within the same Wave (two in different Acorn groups) and are not included here.

<sup>20</sup> The Acorn 'Sacred Little Ones' program



# 5.0 Program Scope

However, eleven mothers (16.9%) cited something negative about the Acorn group as a reason for withdrawal with this largely being couched in terms of the group simply being unsuitable for them, but three mothers indicating something negative about other attendees, and two mothers stating disapproval of the program personnel (both of whom had indicated BPD).

The mean age of withdrawing mothers was 30.2 years (SD 5.6) which mirrored the broader group, and the profile of withdrawals was similar to those who completed Acorn in terms of most other demographic characteristics, and psychological measures assessed in the pre-measures. The exception here was perceived parental self-efficacy where of the 83 withdrawing mothers with children aged less than 1 year, 44 (53.0%) reached the 'clinical level' as compared to 80.5% of all eligible mothers.

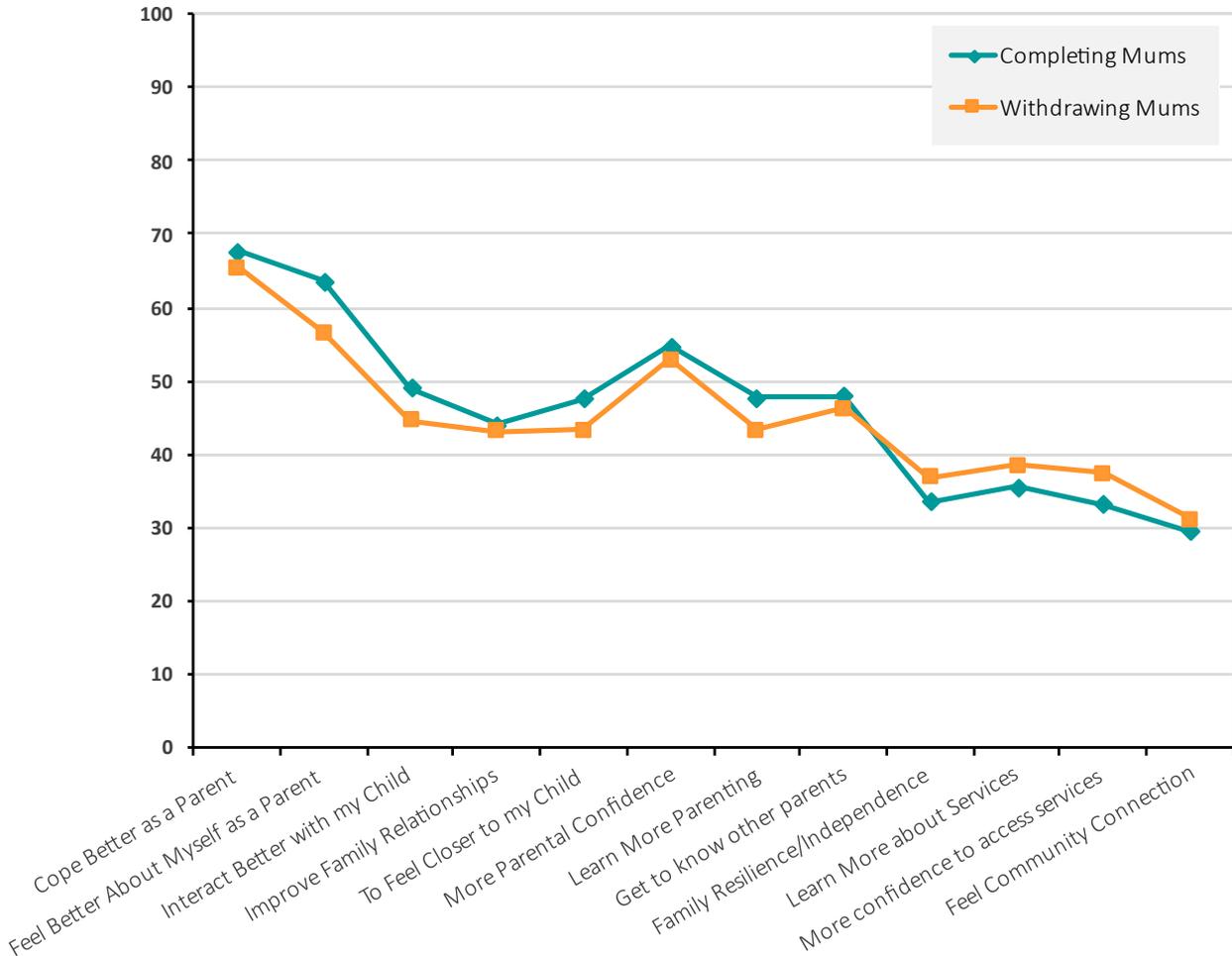
A small number of 15 mothers with very low education levels (reaching Year 10 or lower) also appeared more likely to withdraw (14.3% of withdrawals compared to 8.9% of all mothers). However,

it was still the case that 29 (65.9%) mothers in this education level bracket completed the Acorn program. There were also proportionately slightly more mothers with additional older children who withdraw from Acorn (39.0%) possibly reflecting competing demands for these mothers.

Withdrawing mothers' personal objectives for attending mirrored those of the mothers who completed the program with almost identical proportions agreeing and strongly agreeing with the range of items in Table 5 (figure 3).

The above would suggest that there were no systematic reasons for withdrawal from the program with a possible exception being that withdrawing mothers were more confident in their parenting (using the PPSE) than those who completed. We can therefore be confident in our findings for engaged mothers which can be generalised to the broader population of mothers with maternal mental illness that impinges on their parenting.

**Figure 3:** Indicated reasons for attending – 'strongly agree': Completing mums (n=388) v Withdrawing mums (n=105)





## 5.0 Program Scope

### 5.3.4 Client Re-Enrolment

Fifty-one (10.3%) mums re-enrolled in Acorn including 11 who had withdrawn from the program on their first occasion. The reasons for re-enrolment varied, but all were adjudged by the Acorn team to potentially benefit from additional engagement. These mums were similar demographically to their peers in terms of age, employment status, main income source, marital status, country of birth, language spoken at home and number of children.

Re-enrolments were more likely than their peers to indicate 'major depression moderate severe - severe' in their pre-measure (47.1% v 30.3%) and the 26 mothers who had a child aged 12 months or less at the beginning of the program had slightly lower levels of perceived parenting self-efficacy (84.6% v 80.5% being in the clinical range). Marginally more re-enrolments than the broader sample appeared in the 'clinically significant' or 'high' parenting stress range (18.0% v 16.9%). While Parental Distress was a notable issue for most Acorn mums, for those who subsequently repeated Acorn this issue was more prevalent; 64.0% of the 50 mums who completed a pre-measure were in this range on their first contact with Acorn compared to 54.4% for the broader sample. In several dimensions, these mothers began the program with lower baseline measures than their peers.

Thirteen mums indicating BPD repeated the program. This equates to 36.1% of the 36 re-enrolments from Wave 4 when the McLean measure was first applied (slightly higher than the 30.4% of enrolled mothers indicating BPD overall).

Re-enrolments are discussed further in section 9.0.

### 5.3.5 Six-Eight Month Semi-Structured Follow-up interviews

135 mothers were interviewed in the follow-up survey including 13 who had not completed a post-measure. As expected, these mothers were slightly older than the broader sample (M 31.7 years, SD 5.38), and were more likely to have a second child (44.0% v 35.4%) and to indicate that they were a 'full-time parent'. Marital status, place of birth, education level, and language spoken at home were almost identical to the broader sample. However, while still being substantial issues for many followed-up mums, lower proportions had indicated BPD (21.7% v 30.4%) when commencing Acorn, and slightly lower proportions were in the clinical range for PPSE (71.6% v 80.2%), the 'Major Depression Moderate-Severe' range (25.7% v 30.2%), and Total Parental Stress, 'clinically significant' or 'high' range' (14.6% v 16.9%). Parental stress levels across the PSI-SF domains were similar to the broader sample: 47.9% of mums scored 'clinically significant' or 'high' for Parental Distress (compared to 54.4%), with over 1 in ten indicating this for Parent-Child Dysfunctional Interaction (10.4% v 12.4%) and Difficult Child (12.5% v 12.2%).

While clearly mums who were interviewed months after completing the program shared the range of vulnerabilities of all Acorn participating mums, given these dissimilarities with the broader population, to aid clarity sustained outcomes of the program are considered in this evaluation by comparing 'post' Acorn measures with 'follow-up' interviews for the same cohort of 122 mums (89.0% of those interviewed).





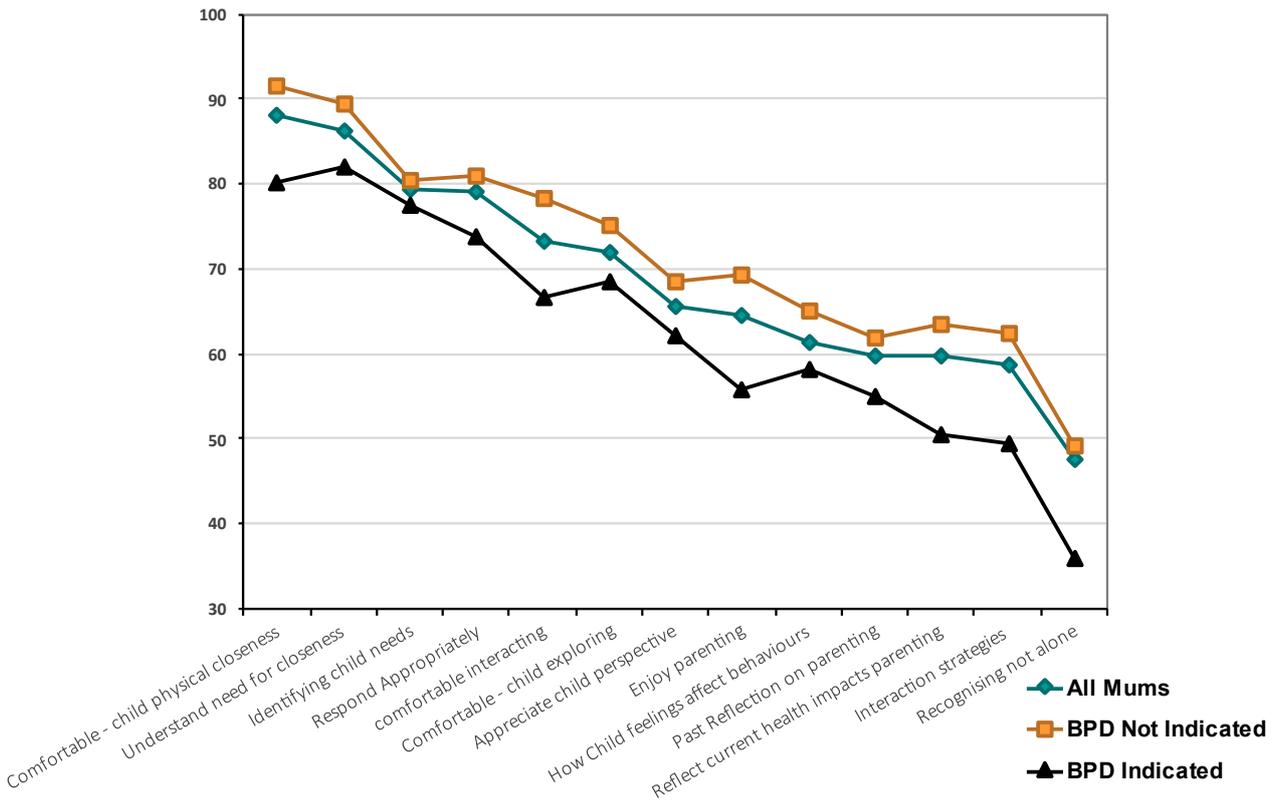
# 6.0 Process Evaluation

## 6.1 Perceived Level of Current ability in parenting related areas

Mums were asked to rate their 'current' ability across a range of parenting related areas in the pre-measure. This question was worded to focus on the present (time of commencement of Acorn) to avoid mums rating their 'general' abilities and was worded thus:

*'We would like to assess the extent to which the course helps you across a number of areas in relation to your children attending Acorn. Please indicate the level of your current ability for each item listed by ticking the appropriate box'.*

**Figure 4:** Personal assessment of current abilities 'excellent' or 'good' Pre-Acorn: All Mums vs indicating BPD



Most Acorn mums tended to rate their current level of ability positively across a range of indicators (figure 4) although they were relatively less likely to do so in more reflective aspects: *Understanding my child's feelings and how they impact on my child's behaviours, Ability to reflect on how my past experiences impact on my parenting, and Ability to reflect on how my current health impacts on my relationship with my child.* Two other areas of note here were: *Using a range of ways to interact with my child (e.g. through songs, games, activities to do together),* where 58.8% of Acorn mums rated themselves as *excellent* (24.7%) or *good*, suggesting that 4 in 10 mums self-assessed themselves as needing help to improve in this area, and *Recognising that I am not alone in the struggles I can face as a parent,* where 47.6% (233 Acorn mums) indicated excellent (16.9%) or good; 68 Acorn mums (13.9%) indicated 'I have little or no abilities/skills in this area' (with a further 8 indicating they did not know), reflecting the sense of isolation experienced by many Acorn mums. None-

theless, except for this last item in all these areas more than half rated their current abilities/skills as 'Excellent' or 'Good'. However, Acorn mums indicating BPD consistently rated themselves lower than other mums across all the listed indicators with around one third (36.0%) indicating they had excellent (14.4%) or good skills *Recognising that I am not alone in the struggles I can face as a parent.*

For mothers who brought both an older and younger child to Acorn (22 mothers<sup>21</sup>), the pattern of perceived current parenting related abilities for the younger child closely followed those for the whole sample. However, mums were less likely to rate themselves highly regarding their older attending child across most of the areas listed, but particularly for: *Identifying my child's needs* (68.2%, 15 mothers) and *Ability to respond appropriately to my child's needs and behaviours* (59.1%, 13 mothers). While these numbers are small Acorn mothers with two attending children of different ages felt less skilled in these areas with their older child.

21 Excluding mothers with children of the same age.



# 6.0 Process Evaluation

## 6.2 Alignment of client personal objectives for attending Acorn with program Objectives

Despite a tendency to rate their abilities well, most mothers wished to improve across all indicators relating to the expected outcomes (objectives) stipulated in Acorn's Program Logic. This was particularly the case for items directly concerning parenting where around eight in ten mothers agreed with all these items (Table 5) including: a desire to cope better and feel better as a parent, have more parental confidence and to interact better with and feel closer to their child; a wish to become acquainted with

other parents and feel more connected to the community were also broadly expressed. It was also the case that mothers indicating possible BPD scored consistently higher across all the personal objectives listed; for example, 83 of these mothers (74.8%) strongly agreed that they wanted to cope better as a parent. This highlights a close alignment between Acorn objectives and the clients' personal reasons for attending.

Table 5:

Personal objectives for attending Acorn (n=493)	% Agreed ('Strongly')
I would like to cope better as a parent	93.0 (67.1)
I want to feel better about myself as a parent	90.1 (62.2)
I would like to learn more about parenting	88.9 (46.8)
I would like to get to know other parents	87.3 (47.6)
I need more confidence as a parent	84.8 (54.4)
I would like to be able to interact better with my child/children	83.0 (48.0)
I would like to feel closer to my child/children	78.0 (46.6)
I would like to know more about services and community supports for myself or my family	77.2 (36.1)
I would like our family to have better relationships	75.9 (43.6)
I would like more confidence to access services and community supports if I need them	72.2 (34.0)
I would like to feel more connected to my community	68.9 (29.4)
I would like our family to be more independent and resilient	65.3 (34.3)

Table 6:

Process Items endorsed by participating mothers (n=353)	% Agreed ('Strongly')
I was treated respectfully by the Group workers	99.4 (79.5)
I felt relaxed and safe at the centre	98.6 (65.1)
What was happening in the Group was explained to me clearly	98.6 (64.5)
The materials/resources I received were clear and understandable	98.6 (60.6)
This is a good venue for the groups to be held	97.5 (69.7)
The group sessions were delivered at the right pace for me	94.6 (58.0)
The group facilitators understood my issues	94.0 (60.5)
The approach used in the group was appropriate for people like me	91.8 (47.0)
There were not enough opportunities to discuss my experiences of being a parent	23.8 (7.6)
There were too many parents in the group for things to work properly	2.8 (1.4)



# 6.0 Process Evaluation

## 6.3 Client Engagement and appraisal of Acorn delivery and Principal Components

Acorn has been successful in engaging vulnerable mums and their children. Despite the issues faced by Acorn mothers and the requirement to commute with their child(ren) to the venue on a weekly basis, the program has been well attended; the median number of Acorn group sessions attended by completing mothers was 11.0 (mode =12) with only 21 completing mothers attending less than half of the sessions (7 sessions or less). While only 10 mothers attended every Acorn session, the large majority of engaged mothers attended half or more group sessions (92.8%).

Over nine in ten participants endorsed all the positive process indicators presented in a Likert Scale (Table 6). Clearly Acorn was highly appreciated by those 353 mothers who completed a post questionnaire; they felt relaxed and safe during the program, and that the approach used was respectful and appropriate for them, with clear explanations provided by understanding facilitators using clear comprehensible resources at a suitable pace and venue.

These findings were very similar for mums indicating BPD, with over 9 in 10 agreeing with all the positively worded indicators shown in Table 6. This is particularly noteworthy given that in the focus groups some mums had expressed concerns with stigma on commencing Acorn.



While I was told about Acorn, I wasn't really able to take it all in, so I didn't really know what to expect and I was very anxious coming here... I felt very comfortable here with the staff and the other mums. The staff were wonderful!

Yeah, because I'm just too nervous to take [my daughter] out to other places and, you know, there are other mums' groups around but, yeah, I felt like comfortable being here because I knew that it was sort of other parents that had mental health issues whereas if I go somewhere else, I'll feel very left out and not in the group sort of thing.

I just think it's really comforting knowing that we're not getting judged or anything or, you know, the way that we parent isn't getting judged.

At first, I was very nervous when I got told how big the group was going to be and that almost made me not want to come, but by the time I met everyone I loved it because everyone was just so friendly. I think if the group was any smaller it would have been, I don't know, too small, because... I feel like it would have been almost more awkward if it was less people.

(Focus Group Discussion - Wave 3)

Real trepidation. I was worried about just how ill the other mums would be and how I'd relate to them, so I was nervous about it yes... (later) like an extended family in the end for me almost. I felt good about coming here and (child) loved it of course so it was so really a wonderful outlet for both of us...

When I first came I was very closed off and didn't really want to talk to anyone because I felt like I was going to be judged because I do have a different, I don't know what you call it, lifestyle sort of thing to other people and an alternative appearance so I thought that I was going to get judged and that I wouldn't really enjoy it, but everyone ended up being so supportive and lovely. Everyone was different but everyone supported each other... I think it was like the third group maybe when I started actually talking to other people.

(Focus Group Discussion - Wave 4)

I get very worried going out and anxious taking (child) anywhere outside the house... yes Acorn was no different early on in that respect... it got easier because I knew that when I get here, we'd see (Mental Health Clinician) and the other mums and everything would be fine... I felt safe here for me and my baby.

(Focus Group Discussion - Wave 5)

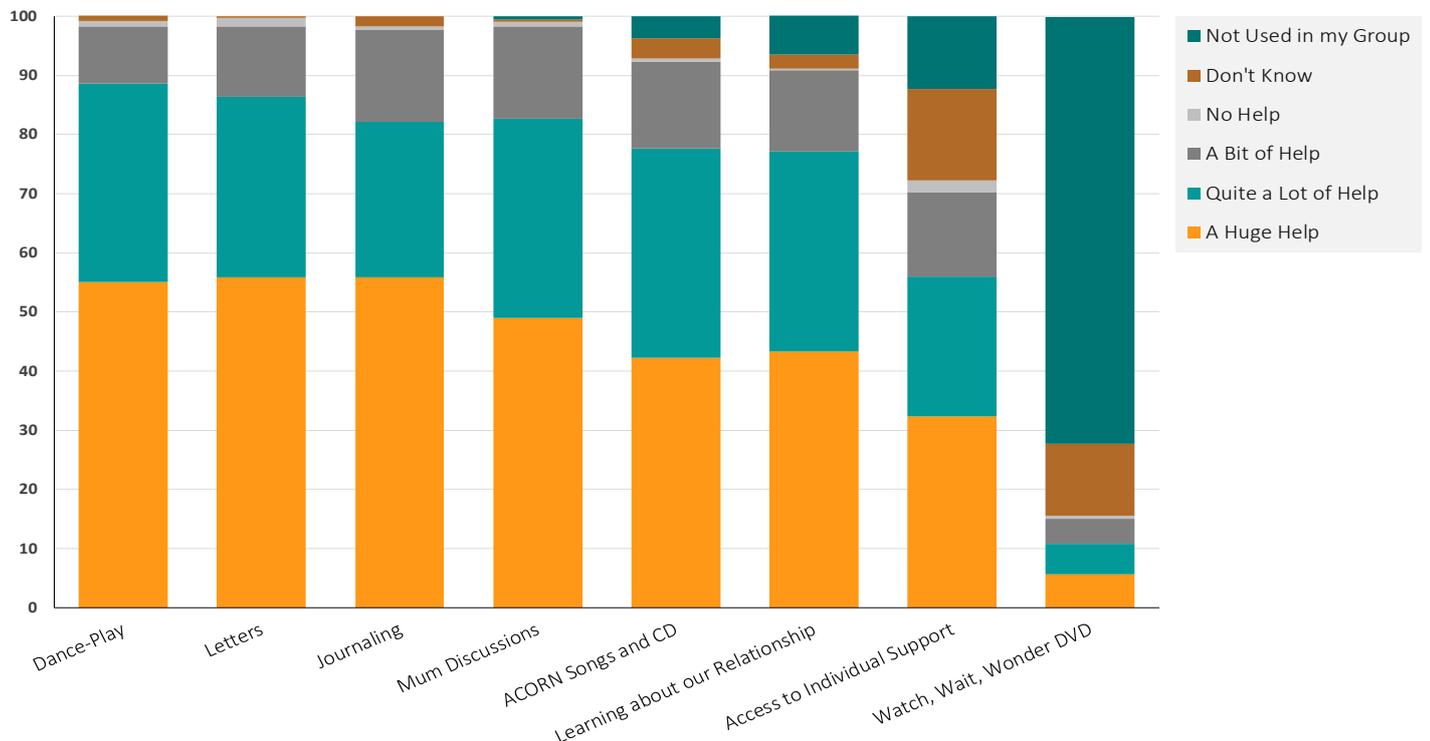


# 6.0 Process Evaluation

The only exception to the positive process indications concerned the item *There were not enough opportunities to discuss my experiences of being a parent*, where responses appeared more equivocal; 84 mums (23.8%) agreed with this item. This finding was identified on completion of Wave 2 and presented and considered at the Reference group meeting as part of the action research strategy. The primacy of 'group work' during the Acorn sessions was asserted at the Reference Group meeting whilst acknowledging that occasional one-to-one consultations occurred (sometimes by telephone and outside of 'group time') and that therapeutic letters were individually tailored. Concerns were expressed that introducing more individualized attention to clients might undermine delivery of the Acorn model and potentially cause difficulties with group cohesion. The introduction of pre and post program home assessments to coincide with the application of the NCAT measure has not assuaged this view for a minority of Acorn mums, with 50 (24.0%) mums agreeing with this item since in Wave 6.

On completion of the program, participating mothers were asked the degree to which Acorn strategies had been helpful for them. Over eight in ten mothers considered all three primary components of Acorn to be either a 'Huge help' (for just over half of the attending mothers) or 'Quite a lot of help', with nearly nine in ten (312 mothers, 88.6%) indicating this for *Dance Play*; 86.4% for *The Letters I received from the team during the week*, and 82.1% for the *Journaling Component*. Talking with other mothers was also considered a huge help or quite a lot of help by 82.7% highlighting the importance of the social interaction in the group setting. 272 (77.7%) mothers also felt this way specifically about the *Acorn songs and CD*. Given the primarily group-based nature of the program less felt that *access to individual support* was as helpful (56.0%). The retainment of a questionnaire item concerning a discontinued DVD resource from Wave 1 provided evidence of diligence in client responses to these process indicators as 84.3% indicated this was *not used in my group* or *don't know* for this item (Figure 5).

**Figure 5:** Mother assessment of helpfulness of Acorn strategies for them





# 6.0 Process Evaluation

The journaling we've done has given me ideas of different ways I can journal that will last me for the rest of my life, and I can share with others. My confidence with how I think I'll cope with having a 2nd child has improved from being in this group and being around/ hearing from women who have multiple children

I would just like to say that I really appreciated my letters every week. I have struggled with confidence about attending some groups, but the letters help reinforce that they are all here to support me regardless.

The singing and dancing was just wonderful for me and my son. We feel so much closer because of learning how to do this together.

(Post-measure responses)

Given the very different strategies used in Acorn, over the three months of the program different participants engaged with the different strategies at different paces; some fully participating in dance play early while others took longer to overcome inhibitions, and some had more difficulty writing reflectively about their parenting experiences than others at different times:

To be honest I hated the diary writing at the beginning. It was just too heavy for me at that time, and it took a lot of getting used to because to be honest I hadn't done anything really like that writing stuff before and it was a bit too new and a bit too. It was too hard at that time, and I kept thinking about (daughter) in the other room to relax enough and think about my own feelings, so it took a few weeks, but I mean I really see the value of it now... Oh it was really therapeutic for me and writing the letter to (daughter) was a real outpouring so yeah, really valuable but it took me a while... The dance play was a lot easier for me...

You see, it was the opposite for me. I loved doing the journaling, getting that little bit of me time, just to, just writing down feelings to get stuff out there to reflect on... I just felt really self-conscious in the dance-play, like it was so hard to join in with geeky worker... it was much better at the end but I'm much better at it at home... no, a lot of it was still new to me so yeah it helped me at home.

(Focus Group Discussion - Wave 6)

I'm still, erm well, a bit anxious when she wonders off erm I mean even here you know. And the journaling was, oh, well that was really hard for me early doors because I just didn't want to let her go off anywhere and you know explore. But the workers here are just lovely and it's like a warm blanket of trust gets wrapped around you and then after a bit you start to relax more...the dance play was a bit easier for me.

(Focus Group Discussion - Wave 4)

Despite the high rates of approval for the Acorn strategies throughout the program, the perceived helpfulness of strategies has also improved as the program has matured and its delivery refined. Comparing Waves 1-5 with Waves 6-11, those indicating 'a Huge help' increased across all the strategies listed including Dance Play (from 50.0% to 58.7%) Journaling (from 53.1% to 57.7%) and the therapeutic letters (from 50.3% to 59.6%). This may reflect ongoing improvement in the program.

I think the team is a lot more coherent and efficient I suppose now. You've got to remember we're all different people and from quite different backgrounds with the psychologists and the family pracs' and having to organise the mums and bubs for the different activities, and what to do when say a baby starts playing up or a mum gets upset or whatever and that sort of thing. And within the time we have to get everyone in and make sure the room's right, (so) it takes a bit of practice to get things working right.

(Family Practitioner)

Getting to know how to work together and developing that mutual respect and understanding around each other's skills and the volunteer skills too, it takes time to blend that I think.

(Dance Worker)

Knowing when to chip in and seeing how different people work in the different groups. I mean it's all Acorn, but the way people are, can vary around the theme to a degree... and you need that trust in each other too and that can take a while. I mean we all love the children, and we all want to help the mums and that's a great starting point, but as a group it takes cohesion and that doesn't just happen spontaneously.

(Mental Health Clinician)

Mums indicating BPD provided similar responses to the broader sample with between 7-8 in 10 indicating that they considered all three main pillars of Acorn to be either a 'Huge help' (again with just over half of the mums indicting this) or 'Quite a lot of help'.



## 6.0 Process Evaluation

All but a single participating mum in the Acorn program indicated that they would recommend the program for other parents like them, with 265 (77.3%) indicating 'Yes, with no changes'. This was reflected by the additional written comments provided by 194 participating mums (55.0%) at the end of the post questionnaire, 190 of which expressing positive judgements and emotions, or gratitude for the program and its staff:

Fabulous program, I've gained an enormous amount from attending. The support has been immeasurable, the team so professional, caring, understanding.

I love the Acorn group something I will always remember and talk about.

I don't think the staff crew could be better. They make you want to come back. The respect that is given to my son is what makes me more inclined to be okay, away from him.

Acorn has been an important program for our family that is unlike many other services we have accessed so far. The emphasis placed on being 'part of our circle' was especially important. My child thoroughly enjoyed being greeted with her own song every week and this was good for me to see her interacting and enjoying the group.

Acorn has helped me in so many ways. I feel closer to my baby. I'm more willing to ask for help. I now feel connected and supported with other 'real' people

I would like to thank the couple who made this group possible. It has helped way more than I could have hoped for. Thank you. I hope it continues to help other mothers that are struggling.

Acorn is an amazing program of which I felt so honoured to be a part of. I would recommend this program to any mum who feels that they need any extra support or are having a struggle with coping or managing the huge job, task, and changing experience of motherhood. It is such a life affirming, supportive, uplifting, and replenishing program. I have come out of Acorn with so much more confidence and acceptance and a new set of skills for being with my child and not just coping but thriving and flourishing in parenthood and navigating this fun and challenging journey.

I cannot explain just how beneficial the Acorn group has been for me. It has changed the way I look at my beautiful boys and the way I parent (for the better). I feel like a more confident mum and know that there are so many little things I can do from day to day that will benefit the boys/shape their lives in a positive way. It has made me slow down and try and take control of what I'm doing, rather than rushing through the days.

(Post-Measure Responses)





# 7.0 Program Outcomes

Findings from the outcome evaluation are presented below. Importantly, the holistic approach adopted by Acorn envelops the related objectives 1-4 which for analytic purposes are addressed separately here.

## 7.1 Objective 1: To Enhance the quality of the parent-child interaction

### 7.1.1 NCAT Observational Measures

Mean scores improved across all the NCAT dimensions addressing the quality of the mother-child interaction for the 145 dyads observed pre and post Acorn from Wave 6-10<sup>22</sup> with this being significant for 7 of the twelve scales. Most importantly, these were significant for the three most reliable measures: 'Caregiver Total' ( $M_{diff}=1.46, t(144)=3.04, p<.01, d.29$ ); 'Child Total' ( $M_{diff}=0.95, t(144)=2.63, p=0.01, d.25$ ) and for the overall quality of the interaction between the child and parent dyad measured by the 'Caregiver-Infant Total' with a small-medium effect size ( $M_{diff}=2.67, t(144)=4.39, p<0.000, d=0.37$ ), (Table 7).

For mothers there were also significant improvements with small effect sizes in 'Sensitivity to Cues' ( $M_{diff}=0.34, t(144)=2.24, p<.03, d.24$ ), 'Cognitive Growth Fostering' ( $M_{diff}=0.89, t(144)=3.32, p<.01, d.29$ ) and 'Contingency' scores ( $M_{diff}= 1.09, t(144)=2.70, p<.01, d.26$ ). Some improvement in 'Socio-Emotional Growth Fostering' ( $M_{diff}=0.26, t(144)=1.67, p<.1, d.17$ ) was also evident but not significant at the .05 level. 'Response to Distress' improved slightly but not significantly ( $M_{diff}=0.14, t(144)=0.77, p<.5, d.08$ )

The Child Total performance appeared to be largely driven by improvement in the child's 'Clarity of Cues' which approached a medium effect size ( $M_{diff}=0.67, t(144)=4.45, p<0.00, d .41$ ). 'Responsiveness to Caregiver' improved slightly but not significantly ( $M_{diff}=0.26, t(144)=0.96, p<.4, d.10$ ), and similarly for the child's 'Contingency score' ( $M_{diff}=1.09, t(144)=1.30, p<.2, d.13$ ).

**Table 7:** NCAT Pre & Post Measures t-test, p values and effect sizes.

		Pre Measures		Post Measures		t	P	d
	N	Mean	SD	Mean	SD			
<b>MOTHER</b>								
Sensitivity to Cues	145	8.98	1.39	9.23	1.28	2.237	0.027*	0.24
Response to Distress	145	9.81	1.66	9.95	1.85	0.771	0.442	0.08
Socio-Emotional Growth Fostering	145	8.12	1.57	8.38	1.51	1.667	0.098	0.17
Cognitive Growth Fostering	145	10.81	3.09	11.70	2.89	3.324	0.001*	0.29
Caregiver TOTAL	145	37.75	4.96	39.21	5.14	3.039	0.003*	0.29
<b>CHILD</b>								
Clarity of Cues	145	7.59	1.65	8.26	1.11	4.449	0.000*	0.41
Responsiveness to Caregiver	145	7.00	2.72	7.20	2.29	1.23	0.222	0.13
Child Total	145	14.57	3.81	15.45	3.05	2.74	0.007*	0.29
Caregiver / Infant Total	145	52.06	7.15	54.44	6.38	3.93	<0.000*	0.37
<b>CONTINGENCY</b>								
Mother	145	14.10	4.20	15.19	3.28	2.699	0.008*	0.26
Child	145	6.54	2.65	6.89	2.26	1.295	0.197	0.13

<sup>22</sup> Following a change in management at AnglicareSA NCAT observations were not available for Wave 11.



# 7.0 Program Outcomes

Significant improvements in the ‘Caregiver-Infant Total’ were evident for the vulnerable sub-populations considered (Table 8), with larger effect sizes found for mothers with two or more children below the age of 36 months ( $M_{diff}=3.54, t(27)=2.63, p<.02, d.53$ ) and for Single mothers ( $M_{diff}=4.00, t(16)=2.26, p<.04, d.48$ ). Those whose household income was mainly government benefits also improved significantly ( $M_{diff}=2.95, t(38)=2.12, p<.05, d.33$ ). Mothers who left school at Year 12 or below yielded close to significant improvement ( $M_{diff}=2.44, t(28)=2.04, p<.06, d.31$ ). Mothers who did not speak English as their first language at home however did not improve significantly in this measure ( $M_{diff}=1.95, t(18)=1.32, p>.20, d.23$ ) – (section 10.0).

Significant improvements in ‘Caregiver-Infant Total’, were reflected in reductions of dyads scoring >-1SD below the normative mean evident across all the NCAT domains in the post measures (Table 9). Applying the most reliable NCAT measures for dyads for whom we have both pre and post NCAT observations: ‘Caregiver-Infant Total’ scores improved from 34.4% scoring >-1SD below the NCAST population mean in the pre-measure to 24.8% in the post measure; for ‘Child Total’ from 27.6% scoring >-1SD below the NCAST population mean in the pre-measure to 17.2% in the post measure and for the ‘Caregiver Total’ from 35.2% scoring >-1SD below the NCAST population mean in the pre-measure to 31.1% in the post measure.

For the ‘Caregiver-Infant Total’ the quality of the interaction, none of the dyads who scored above -1SD in the pre-measure fell below it in the post-measure, so this finding equates to 28.0% of the poorest scoring dyads attending Acorn improving to within 1 SD of the normative mean.

For the sub-scales of the NCAT, Mother’s ‘Sensitivity to Cues’ improved from 21.3% scoring >-1SD below the NCAST population mean in the pre-measure to 13.8% in the post measure, and for ‘Cognitive Growth Fostering’ from 46.2% to 35.1% in the post-measure. Other improvements for mothers appeared more modest: ‘Response to Distress’ (from 24.8% to 20.7%) and ‘Socio-Emotional Growth Fostering’ (from 40.4% to 37.3%).

However, the improvement for Child ‘Clarity of Cues’ was more substantial, from 24.1% scoring >-1SD below the NCAST population mean in the pre-measure to 6.9% in the post measure (considerably better than their normative counterparts). Again, as none of the children who scored above -1SD in the pre-measure fell below this in the post measure, this equates to 71.4% of the poorest scoring children improving in their cue clarity to within 1SD of the normative mean in the post-measure. ‘Responsiveness to Caregiver’ also improved from 23.4% to 20.6% (close to normative proportions in the post-measure).

Forty dyads where the mother indicated BPD were observed in pre and post NCAT measures. Significant improvements were observed for ‘Caregiver Total’ ( $M_{diff}=2.68, t(39)=3.82, p<.01$ ) with a medium effect size ( $d .56$ ), and for the ‘Caregiver/Infant Total’ ( $M_{diff}=2.28, t(39)=2.33, p<.03$ ), with a small-medium effect size ( $d .32$ ). While there was some improvement in the ‘Child Total’ ( $M_{diff}=.65$ ) this was not significant; however, the numbers of children scoring >-1SDs from the normative mean reduced from 11 (27.5%) in the pre-measure to 7 children (17.5%) in the post measure.

**Table 8:** NCAT Caregiver-Infant Total Scores – Vulnerable Sub-Populations  
Pre & Post Measures t-test, p values and effect sizes

NCAT Caregiver-Infant Total Scores	Pre		Post				
	M	SD	M	SD	t(df)	p	d
<b>All</b>	51.98	7.12	54.65	8.02	4.39 (144)	<.001	.37
<b>BPD Indicated</b>	52.05	7.02	54.32	6.09	2.33 (39)	.025	.32
<b>Non-English spoken at Home</b>	50.79	8.25	52.74	5.58	1.32 (18)	.202	.23
<b>2+ children ≤ 36 months</b>	52.50	6.71	56.04	6.69	2.63 (27)	.014	.53
<b>Single</b>	50.47	8.27	54.47	7.61	2.26 (16)	.038	.48
<b>Main household income Government Benefit</b>	51.92	8.87	54.87	7.20	2.12 (38)	.041	.33
<b>School Level ≤ Year 12</b>	52.21	7.96	54.65	6.63	2.04 (28)	.051	.31



# 7.0 Program Outcomes

**Table 9:** NCAT scores Pre & Post located in Standard Deviations from Normative Mean (Count / %)

	>-2		-2 to -1		-1 to 0		0 to 1		1 to 2	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
<b>CAREGIVER (MOTHER)</b>										
<b>Sensitivity to Cues</b>	10 <i>6.8</i>	11 <i>7.6</i>	21 <i>14.5</i>	9 <i>6.2</i>	62 <i>42.8</i>	55 <i>37.9</i>	44 <i>30.3</i>	57 <i>39.3</i>	8 <i>5.5</i>	13 <i>9.0</i>
<b>Response to Distress</b>	17 <i>11.7</i>	11 <i>7.6</i>	19 <i>13.1</i>	19 <i>13.1</i>	23 <i>15.9</i>	34 <i>23.4</i>	86 <i>59.5</i>	81 <i>55.9</i>	0 <i>0</i>	0 <i>0</i>
<b>Socio-Emotional Growth Fostering</b>	13 <i>9.0</i>	7 <i>4.8</i>	47 <i>32.4</i>	47 <i>32.4</i>	41 <i>28.3</i>	49 <i>33.8</i>	40 <i>27.6</i>	32 <i>22.1</i>	4 <i>2.8</i>	10 <i>6.9</i>
<b>Cognitive Growth Fostering</b>	18 <i>12.4</i>	16 <i>11.0</i>	49 <i>33.8</i>	35 <i>24.1</i>	41 <i>28.3</i>	45 <i>31.0</i>	28 <i>19.3</i>	35 <i>24.1</i>	9 <i>6.2</i>	14 <i>9.7</i>
<b>Caregiver TOTAL</b>	20 <i>13.8</i>	21 <i>14.5</i>	31 <i>21.4</i>	24 <i>16.6</i>	57 <i>39.3</i>	57 <i>39.3</i>	35 <i>24.1</i>	37 <i>25.5</i>	2 <i>1.4</i>	6 <i>4.1</i>
<b>INFANT</b>										
<b>Clarity of Cues</b>	17 <i>11.7</i>	2 <i>1.4</i>	18 <i>12.4</i>	8 <i>5.5</i>	34 <i>23.4</i>	48 <i>33.1</i>	63 <i>43.4</i>	66 <i>45.5</i>	13 <i>9.0</i>	21 <i>14.5</i>
<b>Responsiveness to Caregiver</b>	8 <i>5.5</i>	9 <i>6.2</i>	26 <i>17.9</i>	21 <i>14.5</i>	52 <i>35.9</i>	55 <i>37.9</i>	49 <i>33.8</i>	45 <i>31.0</i>	10 <i>6.9</i>	15 <i>10.3</i>
<b>Infant Total</b>	10 <i>6.9</i>	10 <i>6.9</i>	30 <i>20.7</i>	15 <i>10.3</i>	49 <i>33.8</i>	57 <i>39.3</i>	50 <i>34.5</i>	50 <i>34.5</i>	6 <i>4.1</i>	13 <i>9.0</i>
<b>CAREGIVER-INFANT</b>										
<b>Total</b>	6 <i>4.1</i>	7 <i>4.8</i>	44 <i>30.3</i>	29 <i>20.0</i>	61 <i>42.1</i>	74 <i>51.0</i>	31 <i>21.4</i>	42 <i>29.0</i>	3 <i>2.1</i>	3 <i>2.1</i>
<b>CONTINGENCY</b>										
<b>Caregiver</b>	16 <i>11.0</i>	17 <i>11.7</i>	42 <i>29.0</i>	30 <i>20.7</i>	60 <i>41.4</i>	52 <i>35.9</i>	21 <i>14.5</i>	36 <i>24.8</i>	6 <i>4.1</i>	10 <i>6.9</i>
<b>Infant</b>	5 <i>3.4</i>	6 <i>4.1</i>	18 <i>12.4</i>	16 <i>11.0</i>	63 <i>43.4</i>	60 <i>41.4</i>	47 <i>32.4</i>	47 <i>32.4</i>	12 <i>8.3</i>	16 <i>11.0</i>

Improvements in child ‘Clarity of Cues’ as measured by the NCAT are particularly noteworthy here as proportionately less Acorn children performed poorly in the post-measure than in the normative population (6.6% vs a normative proportion of 16.0%). Twenty-one children (14.4%) scored >+1SD above the mean in the post measure, 8 more than in the pre-measure. Taken with the significant improvement with medium effect size, this provides strong evidence that children attending Acorn have markedly improved the clarity of their cues in interacting with their mothers. Improvements in child interactive behaviour were confirmed in mums’ subjective accounts of the ‘most significant change’ in their lives attributable to the Acorn program (section 7.5), and in accounts provided during the focus group discussions:

I think we’d stopped playing really or else he didn’t want to play with me anymore. Well, I wasn’t the greatest mum or greatest company for anyone at the time really. It taught us how to play again really. I’d forgotten how warm it felt and that kind of came back but even better than before. And he tries to talk to me and listen more. It’s like I’ve stepped into the light, and he’s seeing me and wants to play with me.

(Focus Group Discussion - Wave 4)

I think before Acorn it was like we just kept missing each other like I couldn’t pick up on how she was trying to communicate or just wrongly you know. And she didn’t seem to me at any rate to be responding to me... I can’t say it was just the dance play. But that’s what really started to change things and then just thinking about different scenarios in the (reflective) diarying (sic) and coming back and seeing her so happy and having a great time just little by little lifted me up and then I lifted her, and we started connecting... and it’s just like it just started from there, this new journey.

(Focus Group Discussion - Wave 5)



## 7.0 Program Outcomes

'Clarity of Cues' can be affected by past poor responses of parents and may be associated with infants who are insecure-avoidant as they have learnt over time that trying to communicate needs has not positively influenced the behaviour of the mother. Conversely poor cue clarity from the infant, particularly if this has continued over time, may also impede the parents ability to accurately perceive and interpret the child's signals and behaviour and subsequently limit prompt appropriate parental reactions to these signals for some mums (Ainsworth et al., 1978). The substantial improvement following participation in Acorn may be attributable to dance play activities enacted in the program where child expression is encouraged. This improvement was the main contributory factor to the significantly improved 'Child Total' score and contributed to the overall significant improvement in the quality of the interaction reflected in the 'Caregiver/Infant Total'.

While encouraging, the significant improvements in the 'Caregiver Total', should be considered in the light of very low base-line scores on commencing the program for the measures which contributed to this score; improvements were evident in all domains, but the percentages of mums scoring  $>-1SD$  below the NCAT normative database mean remained high in some post measures, particularly 'Socio-Emotional Growth Fostering' where more than a third of mums scored  $>-1SD$  below the NCAST population mean in the post measure. Nonetheless, the NCAT observations provide evidence of significant improvement in the quality of the mother-child interaction, and given the myriad issues experienced by Acorn mums the improvements evident are substantial and reflected in their self-reported indications of enhanced relationships with their children.





# 7.0 Program Outcomes

## 7.1.2 Self-Reported Measures

Table 10 presents a summary of findings from the post client self-completion questionnaire and follow-up survey relating to each Acorn objective. Significant improvement in the observed quality of the mother-child interaction were supported by mothers' self-reports in the post-measure.

Around 9 in 10 (or more) Acorn mothers indicated they had improved across all items related to the quality of the parent-child interaction in the self-completion questionnaire, with over half indicating they had improved 'a great deal' or 'quite a lot' for each item including: *Understanding my child's need to be in a close relationship with me* (248, 70.5%); *understanding my child's feelings and how they impact on behaviours* (228, 64.6%); *identifying my child's needs* (182, 51.6%); and in their *ability to respond appropriately to my child's needs and behaviours* (193, 54.7%). Perhaps a culmination of improvements in these parenting areas has resulted in 312 mothers (88.4%) agreeing (including 152 'strongly') that *I interact better with my child because of attending this group*, and most mothers (328, 92.9%) indicating that *the group has helped me to feel closer to my child* (with 180 mothers indicating 'strongly agree'). Just over nine in ten mothers indicated that they felt more comfortable with their child being physically close to them, with just under seven in ten indicating this had improved 'a great deal' or 'quite a lot'. The improvement in children's interactive skills evident in the NCAT were reflected in the mothers' almost universal view that *My child has benefitted from my attending the group* with nearly seven in ten mothers strongly agreeing this was the case in the post measure.

The group has been absolutely fantastic. Thank you to all the support workers/leaders at ACORN. I can't thank you all enough for everything. Before I started ACORN (sic) I would be so annoyed at [child]. He was such a hindrance. Now I see him as an individual and his own little personality and a hinderance is the last word I'd call him.

(Acorn) has given (son) confidence around people & the ability for me to have free time to spend with adults.

You have no idea how generous it is and how much it helps. I went from not being able to be alone with my son, to loving every minute of motherhood thanks to Acorn.

(Post-measure responses)

In responding to the open question '*What would you say are the most significant changes in your parenting and your family life as a result of attending the group*', the second most common written answers provided related to 'improved quality of interaction with child' with this being spontaneously recorded by just over one quarter of Acorn mothers who completed the program (section 7.5).

Improvements in child interactive behaviour were confirmed in accounts provided during the focus group discussions:

I think we'd stopped playing really or else he didn't want to play with me anymore. Well, I wasn't the greatest mum or greatest company for anyone at the time really. It taught us how to play again really. I'd forgotten how warm it felt and that kind of came back but even better than before. And he tries to talk to me and listen more. It's like I've stepped into the light, and he's seeing me and wants to play with me.

(Focus Group Discussion - Wave 4)

I think before Acorn it was like we just kept missing each other like I couldn't pick up on how she was trying to communicate or just wrongly you know. And she didn't seem to me at any rate to be responding to me... I can't say it was just the dance play. But that's what really started to change things and then just thinking about different scenarios in the (reflective) diarying (sic) and coming back and seeing her so happy and having a great time just little by little lifted me up and then I lifted her, and we started connecting... and it's just like it just started from there, this new journey.

(Focus Group Discussion - Wave 5)

The above findings were broadly consistently indicated by mothers in the semi-structured follow-up interviews providing verification and evidence of sustained impact six-eight months after program completion for the large majority of mothers on the program. Just under 92% agreed that *I interact better with my child because of attending this group* and over one third strongly agreeing this was the case.



# 7.0 Program Outcomes

**Table 10:** Self-Reported Post-Measures (n=353) & 6-8 Month Follow-Up Interview (n=135)

	% AGREED (STRONGLY) <sup>a</sup> OR % IMPROVED (GREAT DEAL/QUITE A LOT) <sup>b</sup>	
	Post Measure	6-8 Month Follow-Up
<b>Obj 1: To enhance the quality of the parent-child interaction</b>		
My child has benefitted from my attending the group	98.9 (69.1)a	95.5 (56.0)a
The group has helped me to feel closer to my child	92.9 (51.0)a	91.8 (42.5)a
I interact better with my child because of attending this group	88.4 (43.1)a	91.8 (37.3)a
Understanding my child's need to be in a close relationship with me	98.0 (70.5)b	91.7 (69.2)b
Ability to appreciate my child's perspective of the world	97.2 (77.5)b	96.2 (66.2)b
Understanding my child's feelings and how they impact on my child's behaviours	96.0 (64.6)b	94.0 (61.7)b
Ability to respond appropriately to my child's needs and behaviours	95.5 (54.7)b	95.5 (50.4)b
Identifying my child's needs	94.1 (51.6)b	88.7 (53.4)b
Feeling comfortable with my child being physically close to me	91.0 (69.7)b	77.6 (55.2)b
<b>Obj 2: To improve parenting confidence, competence, and enjoyment for vulnerable mothers</b>		
I have gained more confidence as a parent by attending the group	87.5 (33.7)a	85.2 (35.6)a
I learned a lot about parenting from attending Acorn	75.9 (23.9)a	76.3 (25.9)a
Using range of ways to interact with my child (e.g., through songs, games, activities to do together)	99.2 (79.6)b	97.7 (77.4)b
Feeling comfortable with my child exploring the world through play	98.3 (77.3)b	97.0 (75.9)b
Enjoying my role as a parent	97.5 (70.5)b	93.2 (63.9)b
Feeling comfortable playing and interacting with my child	97.4 (73.9)b	94.7 (72.9)b
Ability to reflect on how my current health impacts on my relationship with my child	96.6 (67.7)b	96.2 (69.2)b
Ability to reflect on how my past experiences impact on my parenting	95.7 (68.9)b	92.4 (62.1)b
<b>Obj 3: To enhance mothers' wellbeing, coping skills, resilience, and self-efficacy</b>		
The group has made me feel better about myself as a parent	90.4 (38.8)a	93.3 (43.7)a
The group has helped me to cope better as a parent	89.2 (33.8)a	89.6 (37.8)a
The group has made me more confident to access other family services if I need them	66.0 (17.3)a	76.3 (22.2)a
The group has helped our family to be more independent and resilient	59.1 (12.8)a	67.4 (13.3)a
Recognising that I am not alone in the struggles I can face as a parent	99.4 (83.0)b	95.5 (77.3)b
<b>Obj 4: To Expand and Strengthen Social/Community Supports and builds Social Connectedness</b>		
I will (have) share(ed) what I have learnt from the Group program with other parents like me	89.5 (37.6)a	89.6 (44.4)a
I made friends with other parents in the group	83.8 (38.1)a	76.3 (39.3)a
I feel more connected to my community because of attending the group	63.9 (13.9)a	56.3 (11.1)a
I am more aware of other services and community supports for myself or my family as a result of attending the group	62.9 (15.0)a	67.4 (17.0)a
The group has helped our family to have better relationships	62.3 (18.1)a	76.9 (24.6)a
<i>*The group was not very helpful for me</i>	1.1 (0)a	1.5 (0) a

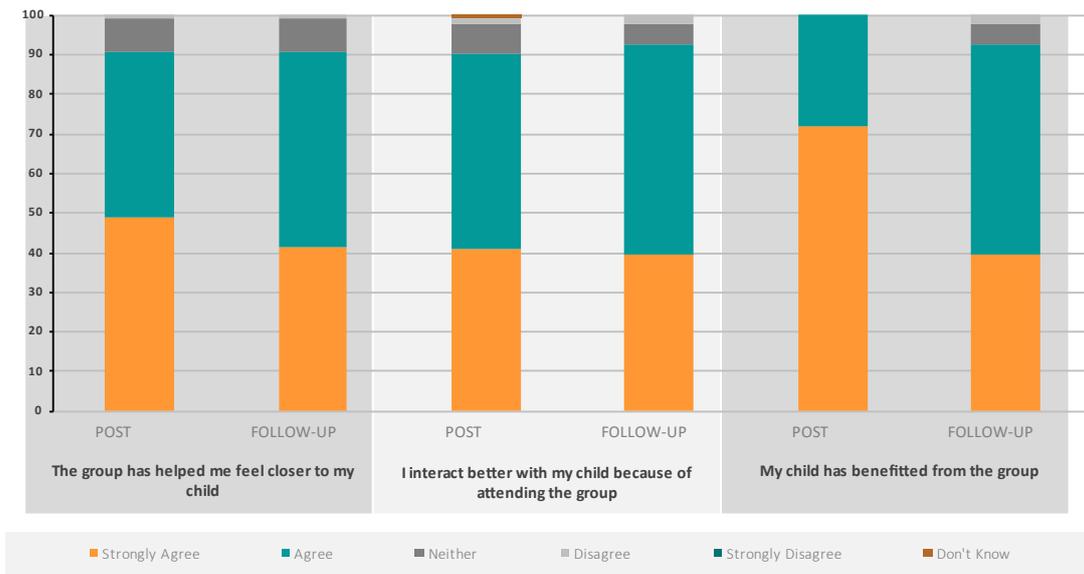


# 7.0 Program Outcomes

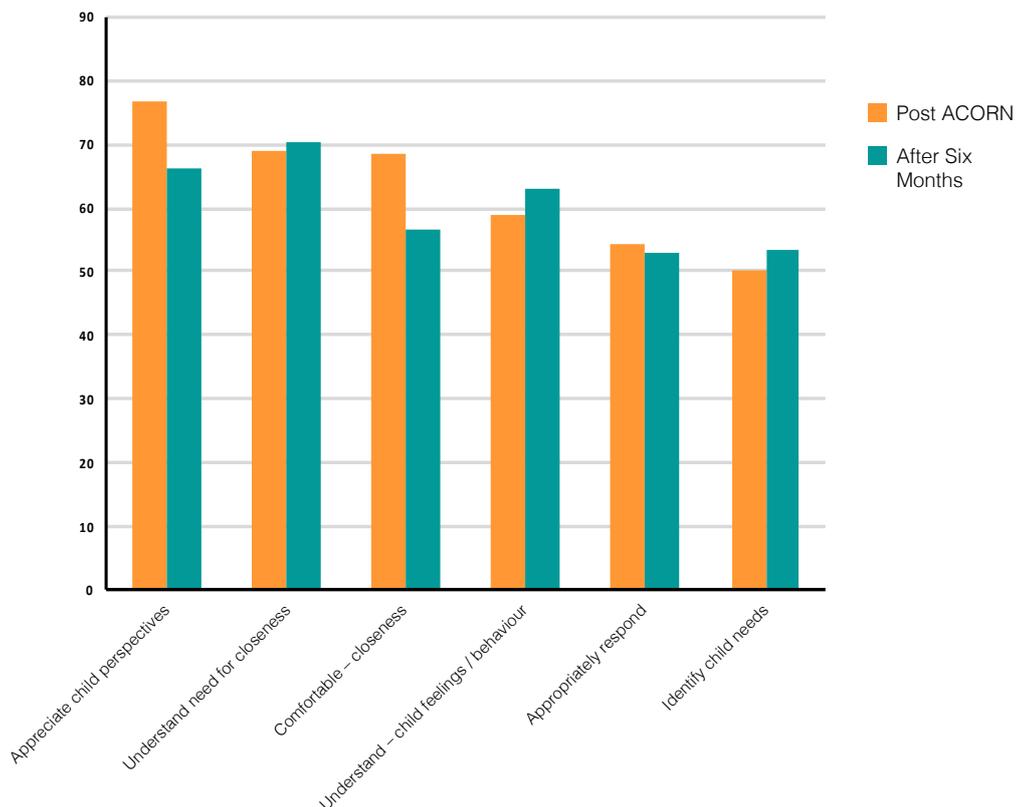
Table 10 presents a summary of findings from the post self-completion questionnaire and follow-up survey relating to each Acorn objective. This table is characterised by the similarity of overall responses from the 353 mothers who completed Acorn with those of the 135 mothers who were interviewed six-eight months after completing the program and a broad range of sustained benefits are indicated for the large majority of participating mothers and

their children. There was only one indicator where the positive follow-up measure was lower than eight percentage points than the post-measure that being *feeling comfortable with my child being physically close to me*. However, it was still the case that for this indicator 77.6% indicated improvement with 55.2% indicating this improved 'a great deal' or 'quite a lot' in the follow-up measure.

**Figure 6a:** Post & Follow-Up Measures Objective 1 – Levels of agreement with Likert items (n=122)



**Figure 6b:** Post & Follow-Up Measures Objective 1 - Improved a 'Great Deal' or 'Quite a Lot' (n=122)





# 7.0 Program Outcomes

Figures that follow comparing post with follow-up measures present findings for those 122 mothers for whom both measures were available; in this way similarities and differences between the two measures are clearer as these are the same mothers in each measure.

Figures 6a and 6b presents findings for those mothers for whom both post, and follow-up measures were available.

The Acorn program has also helped to enhance the quality of the mother’s interaction with their second (usually older) attending child. These mothers endorsed improvements in relation to parenting their second attending child across all the above indicators in Table 10. Of the 19 mums providing post data specifically for their second child, 15 (78.9%) agreed that *I interact better with my child because of attending this group* (7 ‘strongly’) and 16 (84.2%) that *the group has helped me to feel closer to my child* (8 ‘strongly’). With one exception, all mums agreed that *My child has benefitted from my attending the group*, with 12 (63.2%) strongly endorsing this item. All these mums indicated their *Ability to respond appropriately to my child’s needs and behaviours* had improved because of participating in Acorn with 8 (42.1%) indicating ‘yes, a great deal’ or ‘quite a lot’.

- Just helped me react better in situation that would have normally got me flustered. Also, I can do a lot more with them now
- 2 hands clap song is a big deal in my household. My son loves this song just as much as my baby.
- It has helped me to see things from her point of view and to help me with how I am feeling towards her and her behaviour.

(Post-Measure Responses)

## 7.2 Objective 2: To improve parenting confidence, competence, and enjoyment for vulnerable mothers

### 7.2.1 KPCS Measures

Improvement in perceived parental self-efficacy (PPSE) was assessed by applying pre and post measures of the KPCS for the 221 mothers who completed the program whose children were aged 8 months or less on commencing Acorn<sup>23</sup>. PPSE significantly and substantially increased for mothers attending Acorn ( $M_{diff} = 3.24$ ,  $t(220)=8.55$ ,  $p<.0001$ ) with a medium effect size ( $d=.56$ ). The proportion of mothers in the ‘non-clinical’ range almost doubled in the post-measure (from 17.6% to 35.7%) and the proportions of mothers in ‘severe clinical range’ more than halved (from 24.9% to 9.5%) (Table 11). Sixty mothers (27.1%) had a positive change in their PPSE score equal to or greater than the KPCS ‘reliable change score’ of 6 (section 3.3.4).

**Table 11:** KPCS Scores Pre and Post (n=221)

Score	Label	Pre ACORN Frequency (%)	Post ACORN Frequency (%)
40+	Non clinical range	39 (17.6)	79 (35.7)
36-39	Mid clinical range	62 (28.1)	74 (33.5)
31-35	Moderate clinical range	65 (29.4)	47 (21.3)
<31	Severe clinical range	55 (24.9)	21 (9.5)

Significant  $t=8.549$   $p<0.001$  )

Effect Size  $d=0.560$  (medium)

Mean diff 3.24

<sup>23</sup> This was to ensure that children were still of eligible age for this standardised tool on completing the program.



# 7.0 Program Outcomes

Similar improvements were also found for a diversity of vulnerable sub-populations of Acorn mothers (Table 12), including those indicating BPD, mothers (d .54) those who spoke a language other than English at home (d .58), and single mothers (d .49). There was also significant improvement with medium effect sizes for mothers for whom government benefits or pension was the main source of household income (d .48) and for mothers with low educational levels having left school at Year 12 or below (d .49).

Table 12: KPCS Scores – Vulnerable Sub-Populations Pre & Post Measures t-test, p values and effect sizes

KPCS (child ≤1year)	Pre		Post				
	M	SD	M	SD	t(df)	p	d
All	33.95	5.78	37.19	4.66	-8.55 (220)	<.001	.56
BPD Indicated	33.22	5.58	36.24	5.03	-3.70 (40)	.001	.54
Non-English spoken at Home	33.03	7.43	37.37	4.86	-3.03 (29)	.005	.58
2+ children ≤ 36 months	32.00	6.53	36.91	4.54	-4.55 (34)	<.001	.75
Single	35.26	4.48	37.45	4.21	-3.33 (30)	.002	.49
Main household income Government Benefit	34.81	4.76	37.09	4.49	-4.48 (60)	<.001	.48
School Level ≤ Year 12	34.59	5.29	37.20	4.24	-3.59 (48)	.001	.49

Mothers with two young children appear to have benefited most regarding PPSE and their youngest child (for whom the KPCS was a valid tool) ( $M_{diff} = 4.91$ ,  $t(34)=4.55$ ,  $p<.0001$ ,  $d.75$ ) with a medium-large effect size.

It was also the case that significant improvements in PPSE occurred with medium effect sizes at different time groupings across the 5.5 years duration of the program. For mothers attending Waves 1-3 in the first 1.5 years of the program ( $M_{diff} = 3.67$ ,  $t(48)=4.36$ ,  $p<.0001$ ,  $d.69$ ); for Waves 4-7 ( $M_{diff} = 2.51$ ,  $t(90)=4.61$ ,  $p<.0001$ ,  $d.46$ ); and for Waves 8-11 ( $M_{diff} = 3.80$ ,  $t(80)=5.77$ ,  $p<.0001$ ,  $d.59$ ). Taken with the accumulated evidence from triangulated sources including mothers' self-reports, in the absence of a comparison group, this would strengthen the case for causal attribution of the program as the improvement has been relatively consistent over these three different time periods.



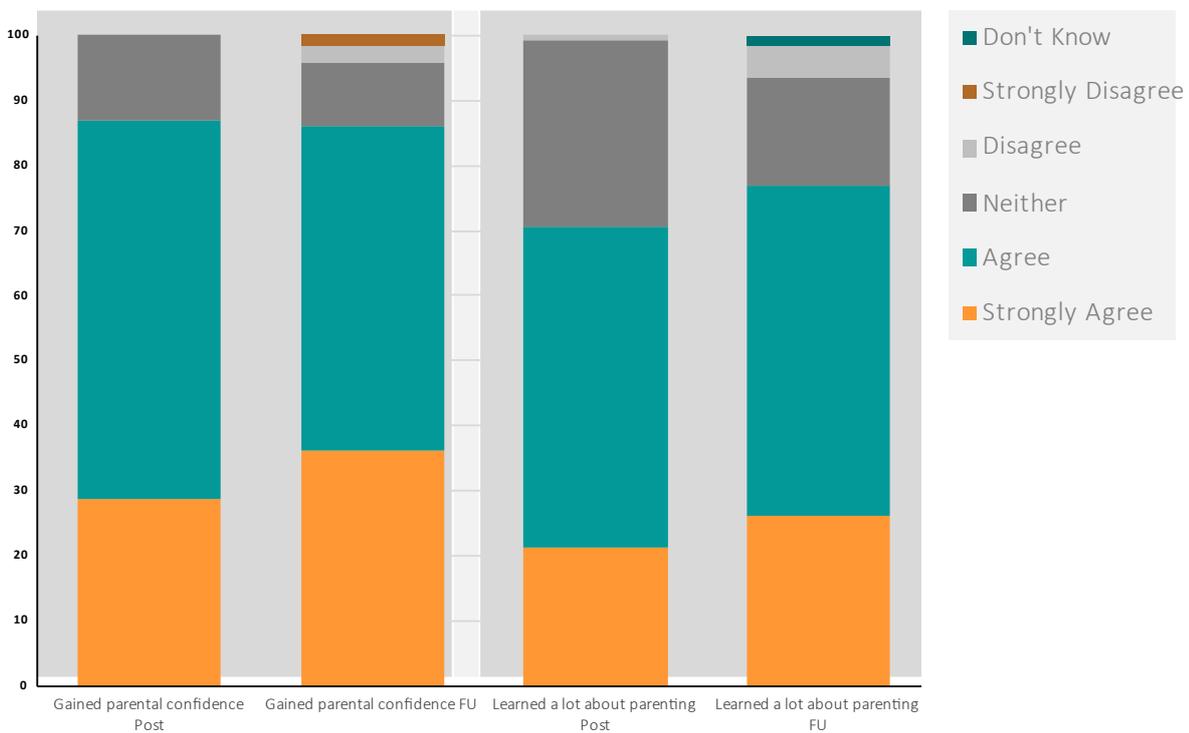


# 7.0 Program Outcomes

## 7.2.2 Self-Reported Measures

On completing Acorn, 309 (87.5%) indicated that *I have gained more confidence as a parent by attending the group*, with around one third strongly agreeing (Table 10), and this applied equally to parents of older and younger eligible children attending Acorn. Moreover, reported improvements in parental confidence was sustained six-eight months after completing the program with a slight shift toward strongly agreeing that this was the case (figure 7a).

**Figure 7a:** Post & Follow-Up Measures Objective 2 – Levels of agreement with Likert items (n=122)



Acquiring enhanced self-confidence was the most common spontaneous answer provided by mothers on completing Acorn to the open question *‘What would you say are the most significant changes in your parenting and your family life as a result of attending the group’*, with this being confirmed six-eight months after leaving Acorn (section 7.5).

I cannot explain just how beneficial the ACORN group has been for me. It has changed the way I look at my beautiful boys and the way I parent (for the better). I feel like a more confident mum and know that there are so many little things I can do from day to day that will benefit the boys/shape their lives in a positive way. It has made me slow down and try and take control of what I'm doing, rather than rushing through the days.

(Post-measure response)





# 7.0 Program Outcomes

Acquiring more confidence was also cited by three of the eight ATSI mothers completing Acorn as the most significant change for them.

268 completing mothers (75.9%) indicated they had learned a lot about parenting from attending Acorn Similarly, and 103 mothers (76.3%) reaffirmed this in the follow-up measure (figure 7a). Given that Acorn does not set out to impart parental 'knowledge' this reflects learning acquired through participation in play and reflection rather than instruction. This was accompanied by a 'rippling' effect of learnings disseminating to peers in the broader community addressed in Objective 4 (section 7.4).

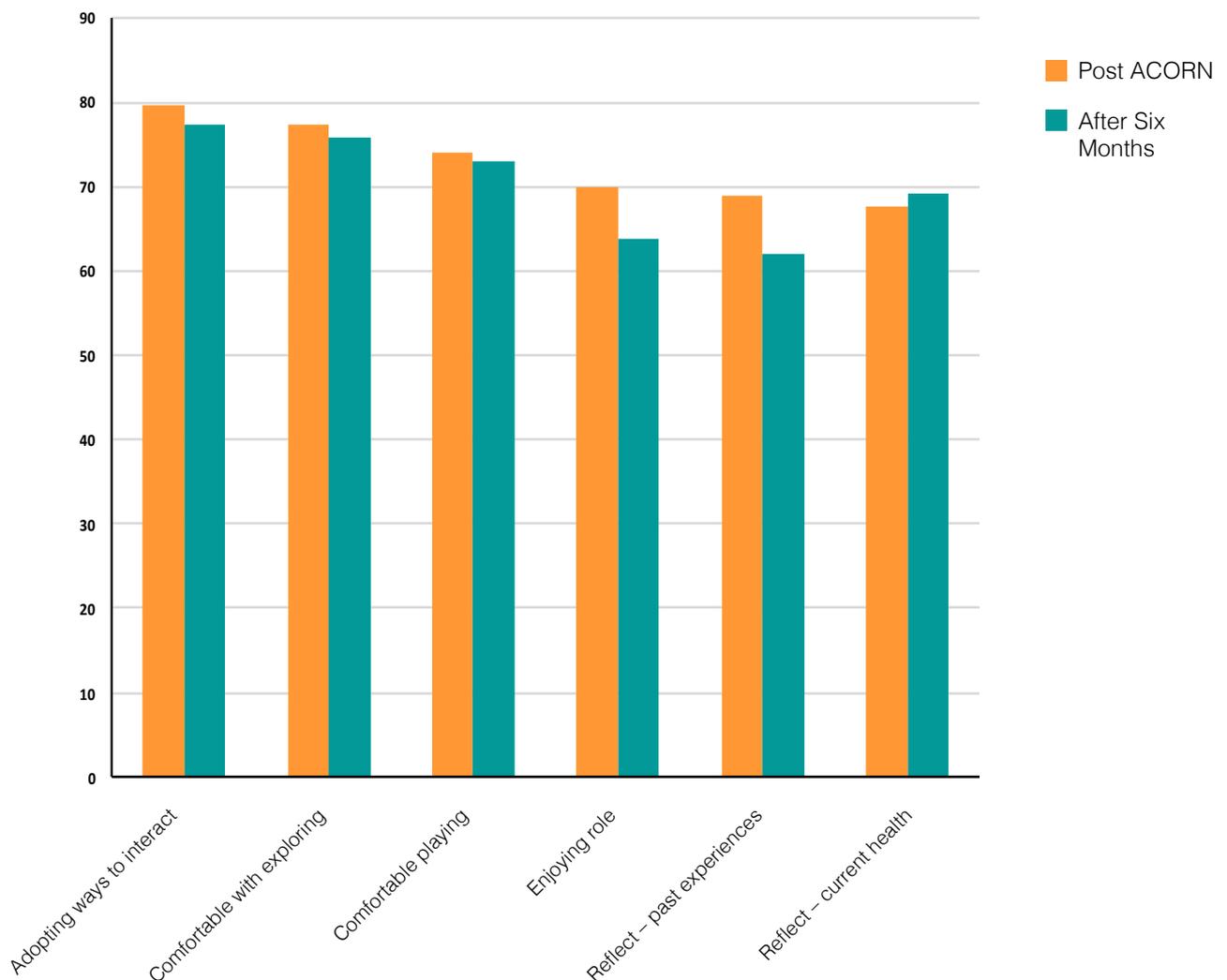
Not so much about parenting but more about me as a parent and that benefitted my parenting.

Really enjoyed going. Really appreciated the opportunity to reflect on my parenting and his development and catching precious moments I'd have missed otherwise.

Follow-Up Interviews)



Figure 7b: Post & Follow-Up Measures Objective 2 – Improved 'A Great Deal' or 'Quite a Lot' (n=122)





# 7.0 Program Outcomes

Nearly all Acorn mothers (99.2%) indicated improvement in *Using a range of ways to interact with my child (e.g., through songs, games, activities to do together)* because of attending Acorn with 281 (79.6%) indicating 'yes, a great deal' or 'quite a lot' of improvement (figure 7b). Again, near universal improvement was indicated for: *Feeling comfortable with my child exploring the world through play*, with 273 mothers (77.3%) indicating a 'great deal' or 'quite a lot', and for *Feeling comfortable playing and interacting with my child*, with 260 mothers (73.9%) indicating a 'great deal' or 'quite a lot'.

This was accompanied by 341 (97.2%) of Acorn mothers indicating improving their *Ability to appreciate my child's perspective of the world*, because of attending Acorn, with nearly 8 in 10 indicating this improved 'a great deal' or 'quite a lot' (272, 77.5%). An almost identical number (344 mothers) indicated improvements in *Enjoying my role as a parent*, with 249 (70.5%) indicating this improved 'a great deal' or 'quite a lot' because of attending Acorn:

Just learning how to play and interact and you know sing and a little bit of dancing

Learning you're not alone and that it's alright not to be perfect and to try to see the world through his eyes and understand there's a reason for when he's stroppy and it's not about just getting at me... you learn to be calmer and not react in some negative way.

It has helped me to see things from her point of view and to help me with how I am feeling towards her.

(Post-Measure Responses)

Taking the 108 Acorn mothers who completed a post-measure and had older children who had not attended Acorn, when asked *has Acorn helped with your parenting for any other children who did not attend*, 95 (87.9%) indicated in the affirmative with 40 (37.0%) indicating 'Yes, a great deal'. This may have contributed to improvements in the family lives of Acorn mums (Objective 4 below). Moreover, of the 47 mothers with older non-attending children who completed the follow-up interview, 33 (70.2%) indicated the program had helped in this area with 14 (29.8%) indicating 'yes, a great deal'.

Over 9 in 10 Acorn mothers reported improvements in their ability to reflect both with regard to: *Ability to reflect on how my past experiences impact on my parenting* (with 242, 68.9% indicating this improved 'a great deal' or 'quite a lot' as a result of attending Acorn) and *Ability to reflect on how my current health impacts on my relationship with my child* (239, 67.7% indicating 'a great deal' or 'quite a lot' of improvement), and these improvements were sustained six-eight months after completing the program. These positive outcomes also applied to second attending children at Acorn; thirteen of the nineteen mothers with two children (68.4%), indicated their ability to reflect on how current health impacts relationship with their child improved 'a great deal' or 'quite a lot' and fifteen (78.9%) indicated this level of improvement regarding how their past experiences impact their parenting.





# 7.0 Program Outcomes

## 7.3 Objective 3: To enhance mothers' wellbeing coping skills, resilience, and self-efficacy

There are strong indications that the Acorn approach has provided holistic benefits for engaged mothers. When asked: 'What would you say are the most significant changes in your parenting and your family life as a result of attending the group?' the third most frequently and spontaneously expressed change concerned 'Improvements in personal wellbeing' impromptu raised by around one quarter of completing mothers (section 7.5). A broad range of improvements were expressed (e.g., Being calmer or more relaxed; Being less depressed/anxious; General feelings of greater wellbeing/happiness; More patience; and feeling less stressed). These improvements have been further authenticated through the application of standardized tools.

### 7.3.1 PHQ-9 Measures

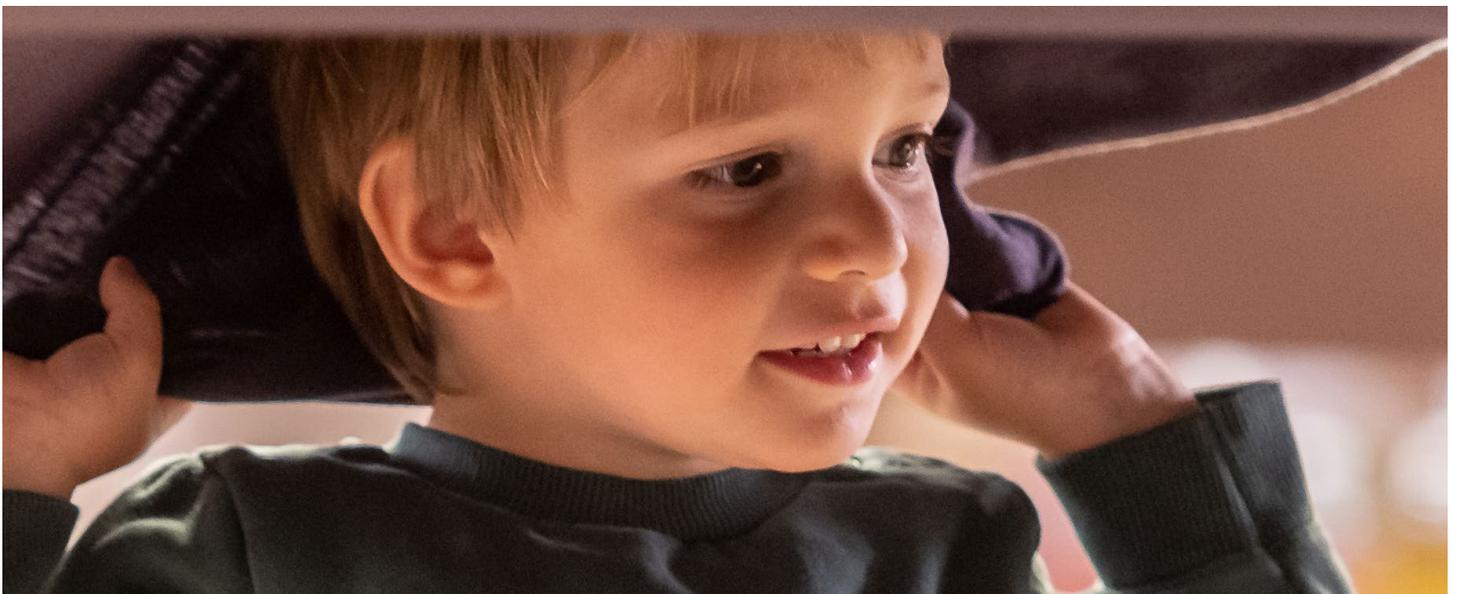
Clearly depression was a pronounced issue in the sample of mums recruited to Acorn. Pre and post measures of depression were provided by 344 Acorn mums, whose demographic profile was very similar to the broader profile of all mums commencing Acorn; the distribution of pre-measures of PHQ-9 for mothers who completed a post-measure of the tool closely mirrored that of all mums at the beginning of the program (refer to Table 3).

The PHQ-9 has demonstrated significant improvement in depression scores pre and post Acorn ( $M_{diff} = 2.27, t(343)=8.90, p<.0001$ ) with a small-medium effect size ( $d=.39$ ). For mothers who provided pre and post measures, those with 'Minimal' or 'No' symptoms improved to a majority in the post-measure from 154 (44.8%) to 212 (61.7%), with over one in four having no symptoms of depression at the end of Acorn (26.2% compared to 13.1% in the pre-measure). Reductions in 'Major Depression moderately severe to severe' were also evident, from 97 (28.2%) indicating this in the pre-measure to 60 mothers (17.4%) in the post-measure (Table 13).

Table 13: PHQ-9 scores Pre & Post (n=344)

Severity Score	Label (Provisional Diagnosis)	Pre ACORN Frequency (%)	Post ACORN Frequency (%)
<5	'No Symptoms'	45 (13.1)	90 (26.2)
5-9	'Minimal Symptoms'	109 (31.7)	122 (35.5)
10-14	'Minor Depression / Major Depression mild	93 (27.0)	72 (20.9)
15-19	'Major Depression, moderately severe'	60 (17.4)	39 (11.3)
20+	'Major Depression, severe'	37 (10.8)	21 (6.1)
Total		344	344

Mean diff: 2.265 Significant:  $t=7.898, p<.0001$  )  
Effect Size  $d = 0.386$  (medium)



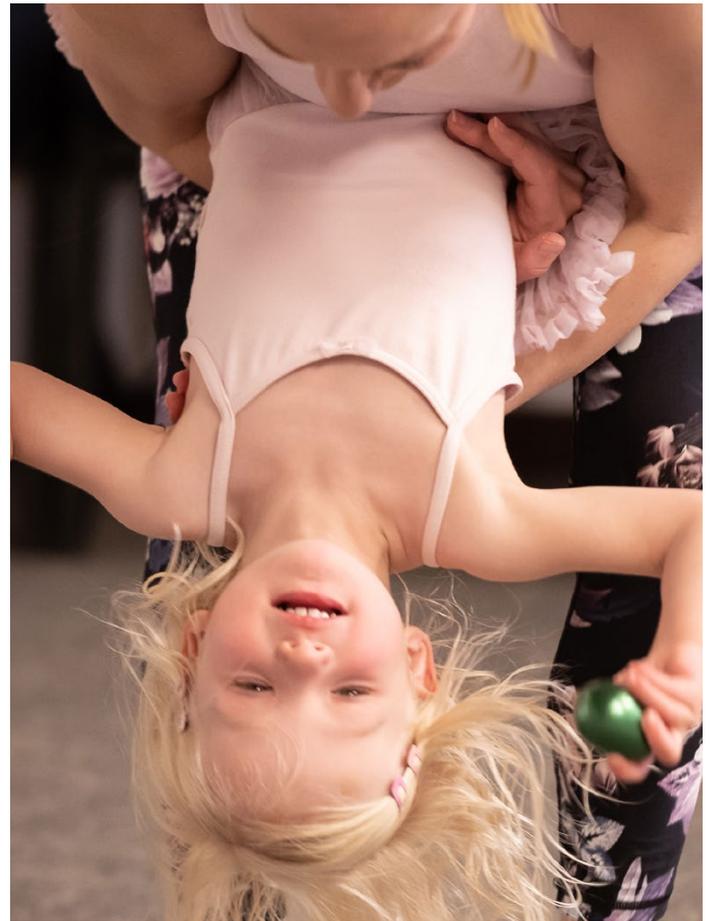


# 7.0 Program Outcomes

Clinically significant improvement (from a ‘clinical’ to ‘non-clinical score’) were calculated for the 190 mothers scoring in the clinical range in the PHQ-9 pre-measure for whom post-measures were obtained (section 3.3.3); 50 of these mothers (26.3%) met these criteria for ‘clinically significant’ improvement.

It was also the case that significant improvements in PHQ-9 scores occurred with small-medium effect sizes at different time groupings across the 5.5 years duration of the program. For mothers attending Waves 1-3 in the first 1.5 years of the program ( $M_{diff} = 2.00, t(76)=2.85, p<.006, d.33$ ); for Waves 4-7 ( $M_{diff} = 2.35, t(135)=5.26, p<.0001, d.38$ ); and for Waves 8-11 ( $M_{diff} = 2.33, t(130)=5.44, p<.0001, d.42$ ).

Depression also reduced significantly for those indicating BPD ( $M_{diff} = 2.77, t(78)=4.14, p<.0001$ ) (with a larger effect size  $d.43$ ). Similar significant improvements were also found for other sub-groupings of more vulnerable mothers including those who spoke a language other than English at home  $M_{diff} = 4.55, t(54)=2.24, p<.05, d.26$ , single mothers  $M_{diff} = 2.38, t(52)=3.18, p<.005, d.34$ , mothers with two children aged three years or less  $M_{diff} = 2.35, t(46)=3.34, p<.005, d.40$ , mothers for whom government benefits or pension was the main source of household income  $M_{diff} = 5.40, t(109)=4.15, p<.001, d.34$ , and mothers with low educational levels having left school at Year 12 or below  $M_{diff} = 5.53, t(86)=3.58, p<.005, d.35$ ). – Table 14.



**Table 14:** PHQ-9 scores - Vulnerable Sub-Populations Pre & Post Measures t-test, p values and effect sizes

	Pre			Post				
	PHQ-9	M	SD	M	SD	t(df)	p	d
<b>All</b>		11.24	5.87	8.98	5.57	7.90 (343)	<.001	.38
<b>BPD Indicated</b>		14.16	6.48	11.39	5.27	4.14 (78)	<.001	.43
<b>Non-English spoken at Home</b>		10.76	6.21	9.13	6.13	2.24 (54)	.029	.26
<b>2+ children ≤ 36 months</b>		11.26	5.90	8.91	5.51	3.34 (46)	<.005	.40
<b>Single</b>		11.47	7.00	9.09	6.02	3.18 (52)	.002	.34
<b>Main household income Government Benefit</b>		11.75	6.35	9.62	5.95	4.15 (109)	<.001	.34
<b>School Level ≤ Year 12</b>		11.48	5.95	9.40	5.53	3.58 (86)	.001	.35

Acorn mums who had indicated any issues in the PHQ-9 were asked: ‘...how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?’. Those finding coping with their depressive symptoms ‘very’ or ‘extremely’ difficult reduced from 101 mothers (29.4%) to 43 (12.5%) signifying a clear improvement in coping with depressive symptoms for many mums following Acorn.



# 7.0 Program Outcomes

## 7.3.2 PSI-SF Measures

The distribution of pre-measures for the PSI-SF for mothers who completed post-measures mirrored that of all mothers recruited to the Acorn program (section 5.3.2). There has been a clear significant improvement in overall parenting stress and in each of the PSI-SF domains: For Total Parenting Stress ( $M_{diff}= 8.14, t(343)=9.27, p<.0001, d.42$ ); Parental Distress ( $M_{diff}= 3.36, t(343)=8.58, p<.0001, d.40$ ); Parent-Child Dysfunctional Interaction ( $M_{diff}= 2.78, t(343)=7.71, p<.0001, d.36$ ) and Difficult Child ( $M_{diff}= 1.81, t(343)=4.86, p<.0001, d.22$ ).



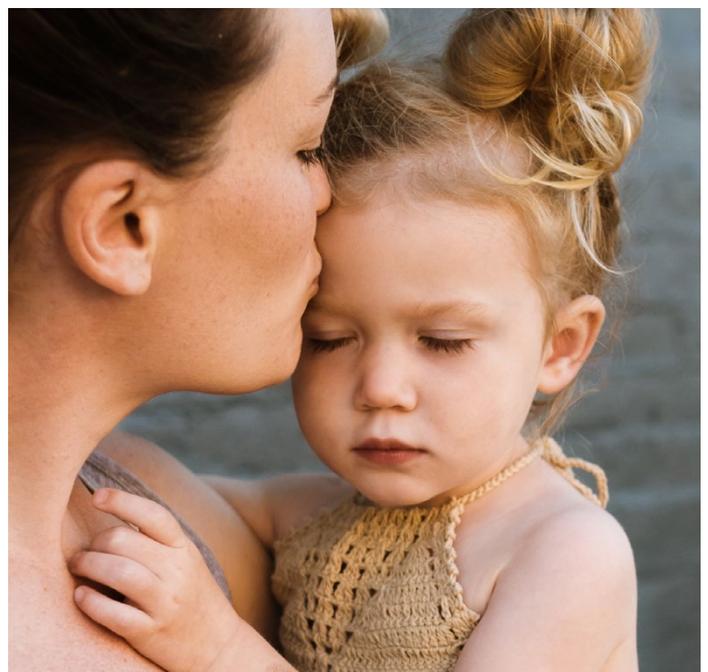
**Table 15:** PSI-SF & Domains addressing youngest child pre & post (n=344) [Level score range, no' mums, % mums]

PARENTAL* DISTRESS	PARENT-CHILD* DYSFUNCTIONAL INTERACTION	DIFFICULT CHILD	TOTAL* PARENTING STRESS	LEVELS OF PARENTING STRESS
40-60 (159 v 112) (46.2% v 32.6%)	36-60 (32v 14) (9.3% v 4.1%)	40-60 (37 v 25) (10.8% v 7.3%)	114-180 (40v 20) (11.6% v 5.8%)	Clinically significant
38-39 (31v 32) (9.0% v 9.3%)	34-35 (10 v 6) (2.9% v 1.7%)	38-39 (11 v 7) (3. 2% v 2.0%)	110-113 (20v 10) (5.8% v 2.9%)	High
18-37 (151 v 195) (43.9%v 56.7%)	15-33 (274v 269) (79.7% v 78.2%)	19-37 (253 v 244) (73.5% v 70.9%)	54-109 (277v 301) (80.5% v 87.5%)	'Normal Range'
12-17 (3v5) (0.9% v 1.5%)	12-14 (28 v 55) (8.1% v 16.0%)	12-18 (43v 68) (12.5% v 19.8%)	<54 (7v 13) (2.0% v 3.8%)	Low

Taking those 344 mothers for whom we have pre and post measures, the numbers indicating 'clinically significant' or 'high' levels of Total Parenting Stress halved from 60 (17.4%) to 30 (8.7%), and for Parental Distress (the most prevalent stress related issue for Acorn mothers), the numbers at these levels moved from 190 (55.2%) to 144 (41.9%) – (Table 15).

Sixteen mothers scored in the 96<sup>th</sup> percentile or higher for Parent-Child Dysfunctional Interaction in the pre-measure and this reduced to four in the post-measure, moving twelve mothers away from indications of potential child abuse that this measure identifies (R.R. Abidin, 2012).

Significant improvements in Total Parenting Stress, Parental Distress and Parent-Child Dysfunctional Interaction also occurred for all selected sub-populations (Table 16).





# 7.0 Program Outcomes

**Table 16:** PSI-SF scores - Vulnerable Sub-Populations Pre & Post Measures t-test, p values and effect sizes (\* with bootstrapping)

PSI-SF: Total Parenting Stress	Pre		Post				
	M	SD	M	SD	t(df)	p	d
<b>All</b>	90.89	19.53	82.75	18.93	9.27 (343)	<.001	.42
<b>BPD Indicated</b>	99.98	19.97	92.54	19.30	4.13 (79)	<.001	.37
<b>Non-English spoken at Home</b>	88.96	20.84	80.29	19.79	3.47 (54)	.001	.42
<b>2+ children ≤ 36 months</b>	96.16	18.86	84.24	16.27	4.34 (44)	<.001	.63
<b>Single</b>	90.51	23.30	82.08	19.48	3.77 (52)	<.001	.36
<b>Main household income Government Benefit</b>	89.75	21.97	82.05	20.22	5.08 (109)	<.001	.35
<b>School Level ≤ Year 12</b>	89.92	19.98	80.83	18.32	5.15 (85)	<.001	.45
<b>Second older attending Child*</b>	100.06	19.90	81.93	24.85	3.52 (15)	.003	.91
<b>PSI-SF: Parental Distress</b>							
<b>All</b>	38.44	8.49	35.09	8.22	8.58 (343)	<.001	.40
<b>BPD Indicated</b>	43.64	7.42	39.29	7.76	5.59 (79)	<.001	.59
<b>Non-English spoken at Home</b>	37.45	9.07	33.73	10.0	3.31 (54)	.002	.41
<b>2+ children ≤ 36 months</b>	39.02	8.10	34.11	6.97	4.97 (44)	<.001	.61
<b>Single</b>	38.58	10.11	35.30	8.34	3.29 (52)	.002	.32
<b>Main household income Government Benefit</b>	38.06	9.10	34.55	8.49	4.90 (109)	<.001	.39
<b>School Level ≤ Year 12</b>	38.17	8.53	34.64	7.66	4.53 (85)	<.001	.41
<b>Second older attending Child*</b>	38.69	9.25	33.56	10.03	3.50 (15)	.003	.55
<b>PSI-SF: Parent Child Dysfunctional Interaction</b>							
<b>All</b>	24.54	7.72	21.76	6.96	7.71 (343)	<.001	.36
<b>BPD Indicated</b>	27.33	8.95	24.53	7.20	3.34 (79)	.001	.31
<b>Non-English spoken at Home</b>	24.10	7.20	20.98	6.87	3.07 (54)	.003	.42
<b>2+ children ≤ 36 months</b>	27.00	7.32	22.53	5.57	4.39 (44)	<.001	.61
<b>Single</b>	25.46	9.43	21.90	7.34	3.65 (52)	.001	.38
<b>Main household income Government Benefit</b>	24.29	8.70	21.73	7.31	4.23 (109)	<.001	.29
<b>School Level ≤ Year 12</b>	24.28	8.23	20.99	7.19	4.24 (85)	<.001	.40
<b>Second older attending Child*</b>	28.43	7.71	22.19	8.93	3.74 (15)	.002	.81
<b>PSI-SF: Parental Distress</b>							
<b>All</b>	27.83	8.14	26.03	8.02	4.86 (343)	<.001	.22
<b>BPD Indicated</b>	29.24	8.64	28.76	9.11	.66 (79)	.510	.05
<b>Non-English spoken at Home</b>	27.55	8.44	25.60	7.98	2.32 (54)	.024	.23
<b>2+ children ≤ 36 months</b>	30.58	9.28	27.67	8.81	1.98 (44)	.054	.31
<b>Single</b>	26.62	7.71	25.06	7.99	1.71 (52)	.093	.20
<b>Main household income Government Benefit</b>	27.31	8.10	25.87	8.61	2.30 (109)	.019	.17
<b>School Level ≤ Year 12</b>	27.22	7.54	25.31	7.87	2.96 (85)	.004	.29
<b>Second older attending Child*</b>	32.94	9.14	26.19	10.97	2.77 (15)	.014	.62

\*With Bootstrapping



# 7.0 Program Outcomes

Parenting stress was noticeably higher in relation to the second older attending child at Acorn and this improved significantly and substantially with a large effect size (d.91). Mothers bringing two children to the program appear to have benefitted greatly in this regard as the effect size of the improvement with their youngest child was also larger than for the broader group of mothers (d.63). While improvements were significant overall for the Difficult Child measure, this did not apply for some vulnerable sub-populations and notably those indicating BPD. One half of the 32 mothers scoring 'clinically significant' or 'high' levels for Difficult Child in the post-measure had indicated BPD (16 mums), and these mums had all indicated this level in their pre-measures for this domain. While it is noteworthy that the remaining 64 BPD indicating mothers scored within the 'normal' range in this domain in the post-measure, improvements in this area for mums indicating BPD may be more difficult to achieve.

Taking Total Parenting Stress, significant improvements in PSI-SF scores occurred with small-medium effect sizes at different time groupings across the 5.5 years duration of the program. For mothers attending Waves 1-3 in the first 1.5 years of the program ( $M_{diff} = 10.41, t(75)=4.95, p<.001, d.49$ ); for Waves 4-7 ( $M_{diff} = 8.36, t(137)=6.91, p<.0001, d.47$ ); and for Waves 8-11 ( $M_{diff} = 6.58, t(129)=4.40, p<.0001, d.32$ ).

## 7.3.3 Self-Reported Measures

The large majority of mothers (314, 89.2%) reported that the program *has helped me to cope better as a parent*, with 119 (33.8% indicating 'strongly agree'). For mothers indicating BPD, the wish to cope better as a parent was more broadly and strongly expressed as a reason for attending Acorn (section 6.2) and nearly nine in ten of these mothers (72, 88.9%) agreed that Acorn had helped them in this regard (30.9% 'strongly'). 319 (90.4%) mothers indicated that *the group has made me feel better about myself as a parent* with 137 (38.8%) strongly agreeing this was the case; 71 mothers indicating BPD (87.7%) agreed with this item, 29 (35.8%) 'strongly'.

It's like the axel's back on the wheels are back on and you know it's still sometimes a bumpy road we're on and sometimes things can get rough they can get hard, but it's not like it's all broken down like you're bogged down, and the wheels are spinning and you're getting nowhere you know. I've stopped that because like now I can just stop you know and I can just like reflect and think and just cope better, and you can see a way forward...I just couldn't do that before; I was just lost in a very dark place you know and I was, I felt really alone. I wasn't but it felt like I was. And it was hard just to live with myself you know.

(Focus Group Discussion - Wave 5)

While still a majority, Acorn mothers were less likely to agree that *the group has made me more confident to access other family services if I need them*, with 233 (66.0%) endorsing this item, 61 (17.3%) 'strongly'. This lower level of agreement was partly explained by some mothers expressing existing confidence in this area prior to Acorn<sup>24</sup>.

I was already confident to access services and have done so prior to coming to the group and will do so after if me or my daughter needs them.

(Post-Measure Response)

However, confidence to access suitable family services was both sustained and improved for some mothers; taking just those 122 mothers interviewed in both the post and follow-up measures, 81 (66.4%) indicated improvement on completing the program in their post-measures, with this raising to 94 (77.0%) indicating this six-eight months later. Having engaged with Acorn over the three-month period and grown in confidence, it appears that at least in some cases the realisation that this has helped them access other services grew after their involvement in Acorn completed.

Well, I guess that I had no idea that Acorn even existed and one of the girls I met at the group is awesome at connecting into local groups and so now I'm attending some community events like music for babies and an exercise class for mums.

(Follow-Up Interview)

We both really came out of shells through going to Acorn. She's (daughter) way more outgoing now and really loves playing and music with other kids so much more. So, we've gone to like mums and bubs music groups and tried some other things which well no way we'd have done before (Acorn). It kind of showed us the way and we're so much happier about just doing stuff now, trying stuff and being more confident that it will be just worth doing at all... no, before going to Acorn I just couldn't bring myself to even try stuff. I didn't have much self-worth really and I know like (other mum) you felt like that too, you know just shut yourself away, keep safe, never go out! I just didn't think it was worth trying anything really. It was like what we talked about, like being afraid of failing again kind of like, so you kind of avoid stuff (because) you don't want that getting that smacked down again thing by that stuff.

(Mum's name) right! It's like building yourself up again in confidence and being confident you can actually get things done and be a good mum and still do other things too for yourself

(Focus Group Discussion - Wave 4)

24 All mothers were referred to Acorn from existing services.



# 7.0 Program Outcomes

Most mothers in the post-measure (208, 59.1%) indicated that the group has helped our family to be more independent and resilient. This appears to have improved over time, taking those 122 mothers for whom post, and follow-up measures are available, 55.4% (67 mothers) indicated agreement in the post measure with this improving to 69.7% (85 mothers) in the follow-up measure. While still a personal objective for a majority, this was the least endorsed of the Likert items for mothers commencing the program (section 6.2) and a sizable minority did not indicate the desire to seek this change. Of the 115 mothers who strongly agreed in the pre-measure that they would like their family to be more independent and resilient, 85 (73.9%) agreed that the group had helped achieve this in the post-measure; 35 of these mothers were interviewed in the follow-up where 25 (71.4%) agreed this was the case six-eight months after completing the program. Clearly, Acorn is achieving this outcome for the majority of mothers who indicated this need.

Bringing mothers together in a group-based program has clearly reduced perceived isolation for nearly all the Acorn mothers; 351 (99.4%) indicating improvement in *Recognising that I am not alone in the struggles I can face as a parent*, with 293 (83.0%) indicating this had improved 'a great deal' or 'quite a lot':

The group was most helpful because I have made 2 close friends from attending. Our husbands now go on fishing trips together.

(Follow-Up Interview)

Coming in and seeing other mums who are struggling with the same things I struggled with everyday isn't it (names other participant) and talking to other mums and sharing our experiences and how we feel and just that alone has made such a difference for me, that it's not just me, that it's not 'wow look at

her what a terrible parent', or 'why can't you pull up your socks?' And all that guilt stuff that 'what's wrong with me?' stuff that comes with that. That's what this group did for me Paul. Just that was such a huge weight just lifted off me right there.

(Focus Group Discussion - Wave 5)

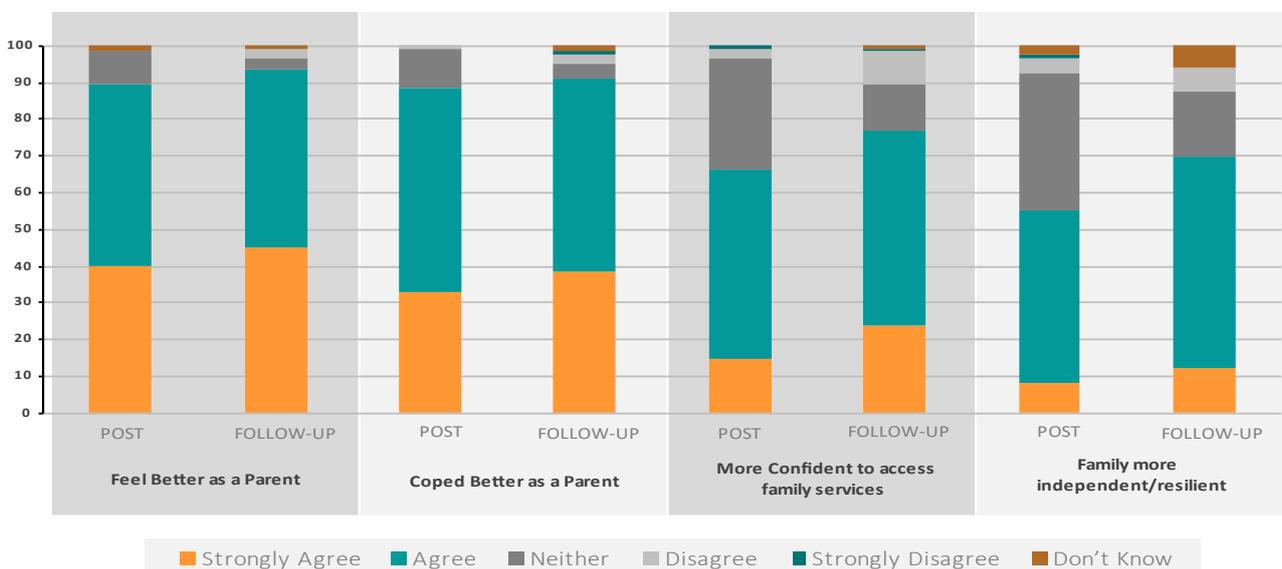
I always thought it was just me that had all these stupid problems and I was just stupid and couldn't do anything right way round so I just stopped seeing people because I didn't want to compare myself to them and I felt ashamed of myself and anyway, I just think some of my old friends just got fed up with me anyway, so it all just got worse and worse and I stopped bothering... Coming to Acorn was really hard for me but I was just desperate by then and it was then... after a couple of weeks really I started seeing things a bit differently. That thing that no-one's perfect and we all have issues, and you can't get it right all the time. And hearing some of the stories from the other girls I just thought, God, this is so much what I'm feeling and it's just me. And that, I think that helped me like so much and it really spurred me on to come every week.

(Focus Group Discussion - Wave 5)

Given the tendency for mothers with maternal mental illness to feel a strong sense of shame, guilt, and isolation, this is a pertinent finding and an important step toward greater social connectivity addressed in section 7.4.

Figure 8 presents the findings from the same 122 mothers who completed both the post and follow-up measures. For each of these areas relating to Objective 3, mothers indicated improvements since completing the program which they attributed to participation in Acorn six-eight months earlier.

Figure 8: Post & Follow-Up Measures Objective 3 – Levels of agreement with Likert items (n=122)





# 7.0 Program Outcomes

The concept of resilience was further explored qualitatively during focus group discussions. While some mothers considered themselves to possess these qualities prior to attending Acorn others expressed improvements in these areas due to attending the program and in some cases linked these specifically with the primary components of the program. This was often articulated in relation to improvements in the relationships with their children and is illustrated in the following exchange:

I think reflecting on things, I just wasn't coping with (child) and, well some of his behaviours just drove me up the wall and I just couldn't handle him and now looking back yeah, I wasn't meeting his needs I supposed. It was just so draining, you know really sapping because I was tired all the time anyway, and I ended up like not responding at all (to child) just clamming up... it was almost like me versus him sometimes and he's really strong willed even for a 2-year-old... Its, God, looking back at it now... Doing the dance play and the diary as well... just got me to a different place. You know you kind of learn how to react better I suppose and think through what's going on and what you bring into it too and be calmer without hiding... It's like, you think about how they're feeling and how you're feeling and step back a bit so like when you get those moments like when (child) is playing up or whatever you can adjust better and not get sucked down that horrible dark hole where you just feel so miserable.

Yes, I know what you mean but I think for me it also that because when you respond better so does your child, so you work things through quicker with a lot less drama because you know you're on the same side and ...

Not against (*sic*) competing against each other.

...have fun together later. So, you grow stronger. In yourself as a parent (name's other participant) and in the relationship too. So, you get to like be more confident because you know you can manage things better that you know before there'd just be no way, so it all mushrooms in a good way.

Acorns.

Yes (laughing) not mushrooms, Acorns.

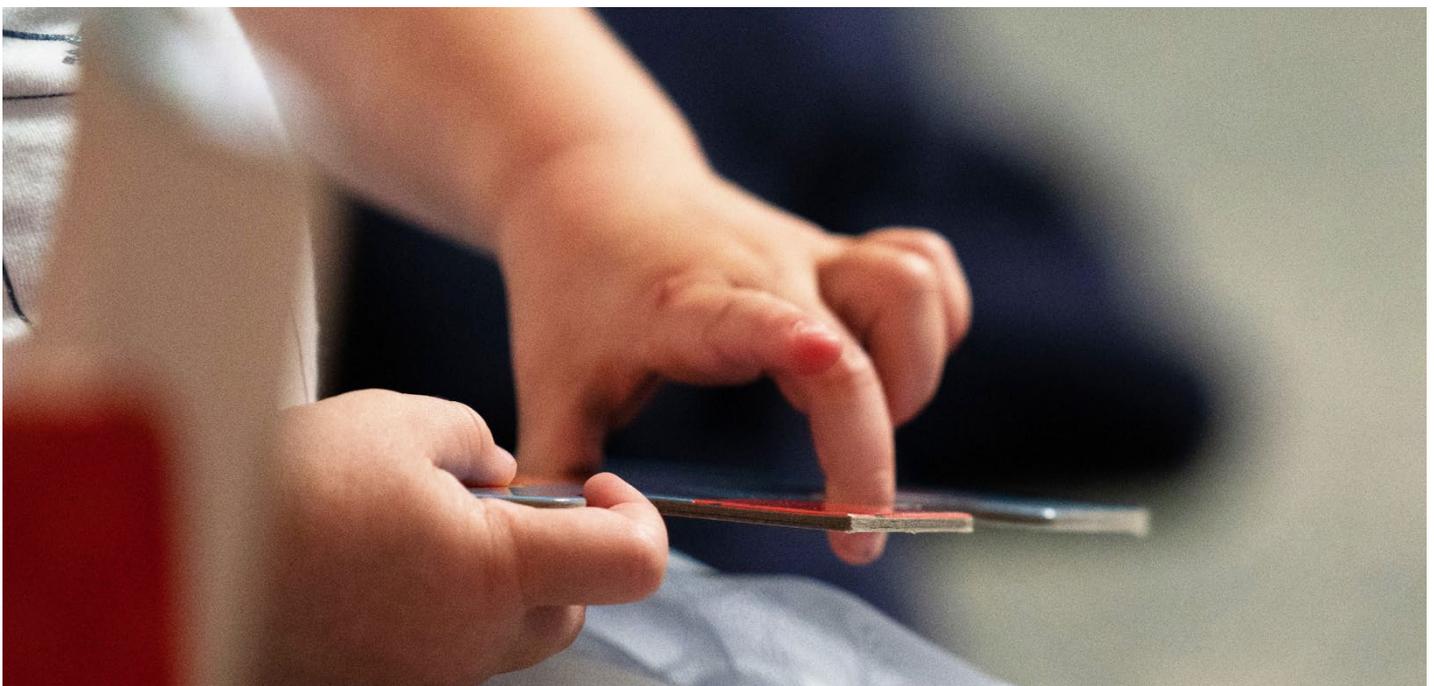
(Focus Group Discussion - Wave 5)

I think the reflective diaries helped me be more resilient and just talking to other mums and hearing some of the shitty things going on in their lives and coming to the realisation that you've got your own strengths and you know 'you can do this'...

It's mostly about confidence, I think. Building that confidence in yourself to deal with negative stuff that gets thrown at you from time to time without it ruining your whole day or the important things in life... I suppose you could call it resilience. Well, I wouldn't describe myself as a resilient person, but I'm sure I'm more resilient than I was when I came to Acorn.

For me it was receiving all the positivity from everyone kind of gave me a boost and got me to thinking 'yeah, I am a good mum, and I can do this and look after (child) and play and have fun and it doesn't have to be doom and gloom... Things can still get on top of me sometimes yeah... I think it's part of my makeup really for that to happen sometimes, but I know I can handle things heaps better now. Heaps better. I get out the house heaps more you know sometimes I force myself whereas before... before Acorn yes, I'd just let things get on top of me and it was all too hard.

(Focus Group Discussion - Wave 3)





# 7.0 Program Outcomes

## 7.4 Objective 4: To Expand and Strengthen Social/Community Supports and build Social Connectedness

A potential advantage of group-based programs is to provide opportunities for otherwise isolated individuals to develop new social relationships with each other, and the wish to get to know other mothers was indicated by the large majority of commencing Acorn mums (section 6.2).

Providing a safe, relaxed, and non-judgemental group environment of mothers with shared parenting and mental health issues and engaging them in collective interactive group activities with their children has encouraged friendships to develop. Over eight in ten mothers agreed *I made friends with other parents in the group*, with 134 (38.1%) strongly agreeing this was the case. There were similar findings for mothers indicating BPD with 77.8% agreeing they had made friends (39.5%) 'strongly'. Of the 168 Acorn mothers who completed the post measure and had 'strongly' indicated at the beginning of the program that a reason for attending was to become acquainted with other mothers, 86.3% (145 mothers) agreed that they had made friends with others in the group, 47.0% (79 mothers) 'strongly'.

Many of these friendships appear to have sustained with similar proportions indicating this in the follow-up measure, including a number who are participating in ongoing Facebook groups of former Acorn clients. It is notable that just under 4 in 10 mothers who participated in the follow-up survey indicated that they 'strongly' agreed *I have made friends with other parents in the group* six-eight months after leaving the program (Table 5). Moreover, one in ten mothers spontaneously cited feeling more socially supported, less isolated and acquiring friends as the most significant changes in their parenting or family life because of attending Acorn (section 7.5), and these views were also expressed during focus groups:

You make a connection (*with each other*) because we've experienced similar problems and you know like (*named mum*) walked in the same shoes and felt the same sorts of things you know so you get to know each other and there's not that feeling of being useless and wanting to avoid like just keep away from people judging you.

(Focus Group Discussion - Wave 4)

I got so much out of seeing (*child*) playing and being happy and the other children playing, especially (*child name*) and (*other mum*) like getting the same out of it as I was. So, you start to feel. Sometimes I think like out of just like the weight coming off... It's like when you start feeling a bit of happiness in your life, when you know you haven't felt happy for a long long time and you're all together then I think it's easier to make friends that way.

The biggest benefit for me, I think, in addition to the increased confidence and awareness for me and my daughter was just meeting the other mums and realising that I wasn't alone in the traumatic experience that I went through, and I guess that we've built a great supportive friendship as a result.

(Follow-Up Interviews)

I've kept in touch with one mum in particular from Acorn and we're good friends, and we also, most of us are part of a Facebook group now too so we still keep in contact and share things about the kids that way, so it's been going for quite a while now and it's a great way to support each other when you're feeling low or feeling high too.

We've got this Facebook group now too, so... I don't use it as much as some of the other girls. I mean (*named mum*) like, she's on it like every second day! Heaps more than me... but it's good to have it there so if I need to hook up with someone I can.

(Focus Group Discussion Wave 4)



# 7.0 Program Outcomes

Acorn has been more successful in fostering relationships and connections between attending mothers than between mothers and the broader community. However, it was still the case that 224 mothers, (63.6%) indicated *I feel more connected to my community because of attending the group*, with this proportion being similar for mothers indicating BPD (66.7%). Of the 98 completing mothers who strongly indicated that they wished to feel more connected to their community in the pre-measure, 75 (76.5%) agreed that this had been achieved in the post-measure (23.5% 'strongly'). Endorsement of this item decreased in the follow-up measure, but most mothers (53.6%) still agreed they felt more connected months after completing Acorn. Given that Acorn mums had been referred to the program by service providers, they clearly had prior experience with existing supports; nonetheless, 222 mothers (62.9%) agreed *I am more aware of other services and community supports for myself or my family as a result of attending the group*. Despite known high patterns of service usage among mothers indicating BPD, (see: Meuldijk, McCarthy, Bourke, & Grenyer, 2017), 57 of these mothers (70.4%) agreed with this item:

It became a bit like a family outing for me and my (*child*) and we got close to the other mums and children there. It was like an escape yeah. I didn't really feel much of a need to try to do other things because I'm tired a lot of the time, and this just did it for me now... We've tried some other groups since Acorn but it's not the same really. But we still see each other (*other mums*) so that kind of works better. Better for us.

We've found some really good connections with the other mums and babies and that's been so useful to support each other when we're down.

(Focus Group Discussion - Wave 5)

It was also the case that 314 mothers (89.7%) indicated they 'will share' their learnings through the Acorn program with their peers, and confirmation that this intention was enacted was indicated in the follow-up measure with 121 (89.6%) agreeing *I have shared what I have learnt from the group program with other parents like me*, (with just under half of these strongly agreeing this item). In this sense there has been a rippling effect of program messages in the community and clearly Acorn mothers have valued their experience to the point of being motivated enough to share their experiences with their peers. This is consistent with the development of improved confidence indicated by the majority of completing mothers and while for many this focussed on sharing elements of Dance Play at least for some mothers this also highlights a sense of empowerment to both discuss parenting issues with others and seek to use their acquired knowledge to help them:

Well, I told my sister (name) about Acorn because yeah, she was going through a tough time herself and wasn't really getting the help she needed and yeah... so we did some of the songs and stuff together as a little group and then we kind of made a point of you know doing that like little tradition amongst us you know that we talked about in the journaling. Yeah.

(Focus Group Discussion - Wave 5)

There was a mum in my daughter's play group, and you know how you can spot them? ... I mean I could just see she was going through a hard time, so I made a point of talking to her and got onto talking a bit about Acorn then. We'd moved by then so there wasn't a group she could join nearby... I told her about some of the songs and games and a bit later how the journaling can be helpful just to take stock of things. I think she took a bit of it in because she asked about it a few times after over a coffee afterwards, but you know it's hard you know really hard, so I don't know... I don't think so Paul (laughs), no. No, I wouldn't have made the first move before Acorn no. Well, I wouldn't of been there (at the playgroup) probably or at least not long enough and well you know you keep yourself to yourself you know, it's like you feel like you're the only one with these problems and like you don't want to draw attention to yourself or anything.

(Focus Group Discussion - Wave 4)



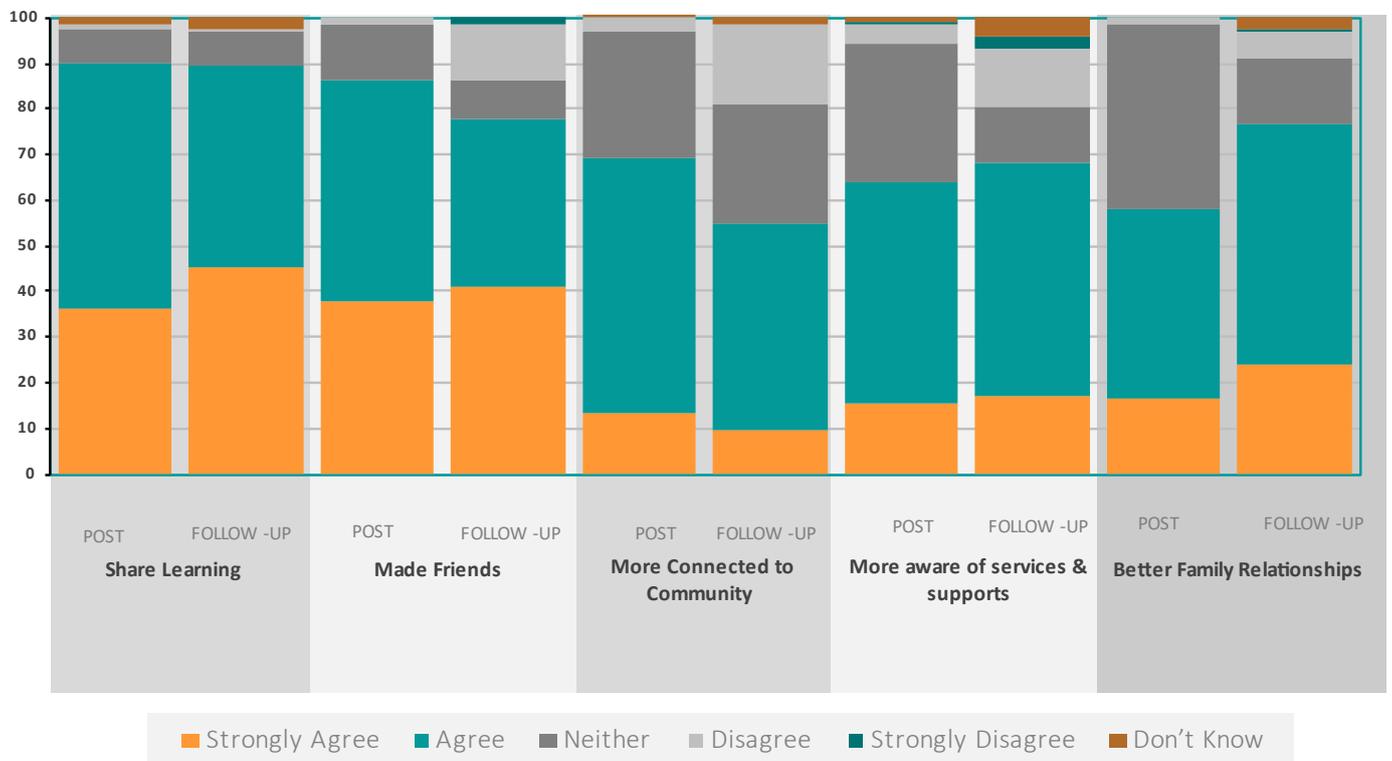
# 7.0 Program Outcomes

Most Acorn mothers indicated that participation in the program has enhanced their family situation with 220 (62.3%) of completing mothers indicating *the group has helped our family to have better relationships*. This appears to have improved over time; taking those 122 mothers for whom both post, and follow-up measures are available, 58.2% (71) of these mothers indicated Acorn had helped to improved family relationships in the post measure with this increasing to 76.9% (93 mothers) in the follow-up measure (figure 9). Of the 153 mothers who strongly agreed in the pre-measure that they wanted their family to have better relationships, 106 (69.3%) agreed that *the group has helped our family to have better re-*

*lationships* in the post-measure; 49 of these mothers participated in the follow-up interview where 38 (77.6%) agreed with this item six-eight months after completing the program.

Taken with the responses addressing family independence and resilience this suggests that for some mothers, improvements in family functioning may have taken time to come to fruition after the program, and that where this was the case, these mothers nonetheless still identified and acknowledged the role of Acorn in helping this to happen.

**Figure 9:** Post & Follow-Up Measures Objective 4 – Levels of agreement with Likert items (n=122)





# 7.0 Program Outcomes

Improvements in family relationships was largely explained in generic terms: “Things at home are just so much better now”. “It’s like we just all get along”; “Every thing’s better!”. However, 10 mums reported more profound changes in their family circumstances being related to sharing and enacting skills acquired through the program:

We taught my husband the Acorn songs and we all sing them together and its heaps better for all of us because it’s helped him develop a proper relationship with Josh and Josh just beams at him and it’s just lovely. Just so different and like it’s a growth thing for all of us too you know and it’s like made us stronger you know as a family to take on the world!

Absolutely. Totally. I’ve no doubt about it at all. It’s just changed everything. Well, it’s not, and it has. It’s changed how, my relationships are with both my children and my partner too and family. So that’s what’s changed for me. I can handle things much better. Much better and I feel better for it. And happier with my daughter

Family life’s just much happier now. Just so much happier with (child). Just feeling the joy with her. We’re both happier, happier mum happier bubs, so it makes a happier family life with her and seeing how she loves me and letting myself love her too.

I’ve learnt new ways to play with my baby and to simply relax and be in the moment which is really good for both of us plus I can show these skills to my husband and other parents.

(Follow-up Interviews)

For the above family-related indicators written explanations for non-agreement was provided, the large majority of these expressing existing family strengths which were unaffected by their

participation in the program; typically, “We already have good relationships”. In other cases, domestic issues beyond the scope of Acorn to address were cited:

No family support. It’s just me and (child).

I went through a messy divorce, and we never see him (husband).

(Post-Measure Responses)

...I was in an abusive relationship (and) I’m not with him now, but we’re by ourselves now so in some way’s family life’s a lot better but I still feel like we’re alone sometimes... so I can’t say we’re more resilient no

(Focus Group Discussion Wave 4)

While it is likely that some existing familial circumstances and contexts may be impervious to the influence of any single parenting program, it was still the case that some profound changes in family circumstances were raised. Several mothers described a mechanism for this being the sharing and enactment of parenting skills and strategies with their partners which had been acquired or honed through the program, with this subsequently improving their family life.

We do things more as a family with the songs and playthings particularly and I talk to my husband a lot more about looking after (daughter) and working out where she’s coming from. This had led to a happier family and happier life generally.

Better communication with my husband. We were going down before Acorn. It saved our marriage.

(Post-Measure Responses)





# 7.0 Program Outcomes

## 7.5 Self-Reported Most Significant Changes

Written responses to the question addressing the ‘most significant change’ were provided by 321 (90.9%) of the 353 mothers completing the post self-completion questionnaire and manifest content analysis applied to categories these; 130 (96.3%) of the 135 mothers interviewed in the follow-up six-eight months after completing Acorn also provided responses to this question and the categories yielded in the pre-measure applied to these in an adaptation of framework analysis (Srivastava & Thomson, 2009) to enable comparisons to be made. All but four mothers, including three who described no changes for them in the follow-up described positive changes which they attributed to the program.

For those mothers who took the option to express the most significant changes for them, the majority cited one aspect, but a sizable minority of responses were multifarious and compounding with some mothers providing an itemized listing while others expressed related changes in a more integrated holistic manner. In some cases, mothers clearly linked the changes identified to specific Acorn strategies in their descriptions or revealed their

on-going adoption at home (Acorn songs, dance and reflective diary keeping). Quotes below are indicative from the post-measure (PM) and follow-up survey (FU) with mothers and child’s ages on commencing Acorn.

The most cited cluster of changes related to *Enhanced Self-Confidence* which was expressed by 91 (28.3%) mothers in the post-measure and 38 (29.2%) in the follow-up. This was further broken down into *Parental Confidence* (61 mothers) which included confidence to allow children to explore and to be a ‘nurturing mother’ and *Social Confidence* (30 mothers) including confidence to participate in other activities and to assert their parenting views to others:

*Improved quality of interaction with child* was raised as the most significant change by 86 (26.8%) mothers in the post-measure and 27 (20.8%) in the follow-up with reference to Acorn songs and dance being made in both cases:

### Box 1 – Enhanced Self-Confidence – Indicative Comments (Wave, Mother’s age, Child age)

#### Client Self-Completion Questionnaire (Post)

#### 6-8 Month Follow-Up Interview

‘I have become a better and stronger mum. I now feel more confident in myself knowing I am doing a great job and need to stop being so hard on myself. The more I see my son grow and develop the more proud and content I feel’.

(Wave 4, 20 years; child 3 months)

‘When I started, I was so depressed that aside from essentials (like) changing nappies I felt like I wasn’t interacting much with my baby. It’s been fantastic to be encouraged to try new songs during the rest of the week and spend time with my baby playing. I know that I have skills to play well with my baby but my confidence to do so was very poor. My confidence has improved greatly in this way since coming to the group’.

(Wave 2, 33 years, child 6 months)

*“Felt a lot more confident taking (child) to other places and groups on my own as a result of the Acorn experience. Before attending Acorn, I hadn’t left the house since (child) was born. That’s 2 years of feeling like I couldn’t handle him outside of the house”.*

(Wave 1, 38 years, child 19 months)

*“I think, especially looking back on the really early days when I was in hospital, it all felt really overwhelming, being a first-time parent whereas now I feel really confident, and I know what he needs and know that I can meet his needs”.*

(Wave 9, 28 years, child 3 months)



# 7.0 Program Outcomes

## Box 2 – Improved quality of interaction with child - Indicative Comments (Wave, Mother’s age, Child age)

### Client Self-Completion Questionnaire (Post)

‘Getting joy out of singing and dancing.  
 Playing with baby at home. Seeing (the) joy she gets out of the songs and how much delight she has when we sing them at home’.  
 (Wave 4, 29 years, child 2 months)

### 6-8 Month Follow-Up Interview

*“The fun we have, the games the singing, the reaction to my son, seeing him play and do peak a boo, it’s wonderful”.*

(Wave 3, 36 years, child 4 months)

*“Singing and dancing is now involved daily in our routine as I can see how much my baby enjoys it and calms him. Having this tool to calm my baby easily makes me more confident as a parent and happier”*

(Wave 6, 27 years, child 2 months)

Improvements in personal wellbeing were cited by 75 (23.4%) mothers in the post measure and 23 (17.7%) in the follow-up measure. This was a broad category and included references to being calmer, more relaxed, more patient, coping better and feeling more resilient and optimistic. Some mothers made specific references to being less depressed, stressed, and anxious. Mothers

also highlighted improvements in self-esteem particularly in the relation to identifying their importance to their child. Feeling less guilt or shame and more positive about themselves as mothers were also included.

## Box 3 – Improvements in personal wellbeing - Indicative Comments (Wave, Mother’s age, Child age)

### Client Self-Completion Questionnaire (Post)

‘I am less anxious, calmer, more relaxed, flexible, mindful and I subsequently have a better relationship with [children]. I am also realizing that just being with [child] is more important than doing’.  
 (Wave 9, 38 years, child 10 months)

### 6-8 Month Follow-Up Interview

*“Well, I just wasn’t able to cope at all before the Acorn group. The depression consumed me really, everything was just so hard to do, and I was exhausted a lot of the time, just drained of energy and time just went past me... now I know things can actually be better and when it is with (child) it’s like a warm blanket on me and that gets me through it. So, Acorn gave me that really. Gave me the hope and the knowledge that things can be better for us”.*

(Wave 8, 34 years, child 2 months)

*“I was very stressed back then and now I’m more relaxed. I was just so uptight then and learnt to relax with what she was doing. I’m more relaxed and understand the effects of emotions on me and others around me. My outlook on things has changed dramatically not just for me but for my family”.*

(Wave 2, 41 years, child 4 months)



# 7.0 Program Outcomes

Improved Bonding, Attachment, Closeness was cited by 44 (13.7%) mothers in the post-measure and 22 (16.9%) in the follow-up.

## Box 4 – Improved Bonding, Attachment, Closeness - Indicative Comments (Wave, Mother’s age, Child age)

### Client Self-Completion Questionnaire (Post)

‘I have been able to in the last weeks start to bond with my daughter before this she was someone I fed, clothed and changed her nappy and put to bed, there was no emotional bond I just did what was needed to be done to keep her alive’.

(Wave 7, 25 years, child 3 months)

‘Now I can confidently say that I LOVE my child - at the start I hadn’t attached to him but now I have a strong attachment’.

(Wave 9, 26 years, child 3 months)

‘I feel that I have been able to bond with not only (child) but my other kids too through dance play and singing and I find that they are responding better to me’.

(Wave 2, 32 years, child 7 months)

‘My response & reaction to my child have vastly improved. My feelings of love and care and affection have gone from numb stone to actually talking to him & saying I love you - a massive improvement to me’.

(Wave 11, 35 years, child 3 months)

### 6-8 Month Follow-Up Interview

“I had no feelings toward my child or connection before the group. We have a fantastic relationship now”.

(Wave 6, 38 years, child 6 months)

“How to enjoy being with (child). I was scared of her, but they showed me that she loves me because I’m her mum. I enjoyed being with her at what was a very dark time for me so that was really nice... My child tended to cop the blame, but we are really good now”.

(Wave 2, 21 years, child 5 months)

“We formed a great relationship through what we did together at group - she was just a baby when we started, and I learned to sing to her and not worry about what I sounded like, and she still loved it. We grew through it together”.

(Wave 6, 27 years, child 2 months)

“The connection I have with my child is much greater than it was before Acorn and it’s because of Acorn. I wish I had known about Acorn when I was struggling to connect to my first child”.

(Wave 1, 34 years, child 3 months)

This was often cited in relation to *Being more reflexive, self-aware, and empathetic*, changes cited as most significant by 41 (12.8%) of mothers in the post-measure and 18 (17.5%) in the follow-up. This was sometimes linked to *Improved Parental Understanding and Response* (cited by 11.5% in the post and 16.9% in the follow-up) and *Being happier in their parenting role* (cited by 9.0% in the post and 7.7% in the follow-up). Other categories were: *Being more socially supported and connected*, which included acquiring new enduring friendships being raised by 10.9% of mothers post-Acorn and 8.5% six-eight months later and *Improved Family relations* cited by just over 5.0% in both post and follow-up measures. The final category referred specifically to improvements in Acorn children either in behaviour or demeanour which were cited by 3.1% and 3.0% respectively.





# 7.0 Program Outcomes

## Box 5 – Other Improvements - Indicative Comments (Wave, Mother’s age, Child age)

### Client Self-Completion Questionnaire (Post)

‘Being able to understand [child] as a person. Having the ability to reflect on the letters and each session to then recognise the positive things I give to my children and things that might need to change and following through.’

(Wave 5, 24 years, child 4 months)

‘Being mindful of the precious moments to see the world from my baby’s eyes’.

(Wave 8, 37 years, child 10 months)

‘I don’t bottle as much thoughts in my head as I used to. I’m able to communicate with my partner about my worries and why I react a certain way because I’ve reflected things during journaling’.

(Wave 7, 27 years, child 8 months)

‘My baby has loved each component also. He has developed amazing social skills and confidence and finds it a lot of fun’.

(Wave 5, 34 years, child 9 months)

‘Using the songs and playing with (child) at home and with my partner. Sharing and doing with her dad has helped him get close to (child) too so we’ve all grown together’.

(Wave 3, 29 years, child 9 months)

### 6-8 Month Follow-Up Interview

“I guess to some extent being mindful of my own emotions with her and how they impact on her”.

(Wave 3, 34 years, child 11 months)

“Recognising she is a little person just exploring and not understanding things. I relate to her now”.

(Wave 2, 30 years, child 9 months)

“...Definitely helped our family life, (husband) and I are a lot closer and better at communicating and we’re both understanding her a lot better and have learnt to cope better too. It just really helped a lot with our family situation, for sure. I was putting a lot of strain on our relationship so that’s definitely been a big lift off”.

(Wave 8, 21 years, child 4 months)

“Music & dance - [child] really enjoyed this. Has helped him come out of his shell & interact with other kids more”.

(Wave 6, 28 years, child 22 months)

“I just think the whole experience was beneficial to me. We’re just so much happier... in myself and with (son) in our relationship and closeness. As a family. It was so bleak before Acorn, and we actually do lots of things together now as a family you know it’s just a different world... I’m so so grateful to have found this help. It just turned my world around really”.

(Wave 5, 22 years, child 5 months)





# 8.0 Mums Identifying as Aboriginal Torres Strait Islander

*There were small numbers of ATSI mums engaged with Acorn; of the fourteen who enrolled, eight completed the program and their responses to both process and outcome related indicators in the pre and post self-completed questionnaires were similar to those of the broader group of mums. Of the six who withdrew from Acorn one indicated that they felt out of place, and one moved to the Sacred Little One's program. Reasons for withdrawal for the remaining four Aboriginal participants were not provided.*

When asked about the strengths of the program, three ATSI mums cited reflective journaling, with one including the dance play:

The dancing is amazing and getting time for myself e.g., the journaling is a great time for me to relax

The journaling time was helpful to reflect and think about things in a safe environment

Of the eight who completed Acorn, 5 indicated they would recommend the program for other parents like them with no changes, and the remaining 3 indicated 'Yes, with some changes'.



Seven of the ATSI mums provided responses to the question 'What would you say are the most significant changes in your parenting and your family life as a result of attending the group?'. These were:

- Able to part with my son, feeling more confident
- I can sing & dance with her more often now
- More confidence
- More confident in myself and parenting
- Patience and being with my child through play
- Understanding [child] and what she needs, different play activities I can do with her
- Understanding her needs more easily

These above findings indicate that for the small group of ATSI mums attending the Acorn strategies were valued and the program beneficial. However, for the sub-group of seven ATSI mums who completed pre and post measures with the standardized tools there were no significant improvements found in any of the psychometric assessments. While the numbers are very small here, and so interpretations are tentative there remain questions about the cultural appropriateness of these tools given the positive self-reported responses obtained for Aboriginal mums attending Acorn. This may be particularly so for the PHQ-9 where ATSI mums performed slightly worse after Acorn with a mean difference score between pre and post measures of .57. A culturally adapted version of the PHQ-9 (the aPHQ-9) has recently been developed as a screening tool specifically for Aboriginal Australians (The Getting it Right Collaborative Group, 2019) and may be considered as a possible alternative tool for Aboriginal mums attending Acorn

Findings from the Sacred Little One's evaluation using qualitative methods were very positive for a program that has culturally adapted Acorn strategies specifically for Aboriginal mums and children. Notwithstanding the benefits of the broader Acorn program for Aboriginal mums, this would suggest that where possible consideration be given to directing these mums to this program.



## 9.0 Dose/Response

*It was not possible to acquire 'post' data from participants who withdrew from the program early and most of these left Acorn within the first couple of weeks (42 recruited mothers did not attend any group sessions). However, there were 21 mothers that completed the program and provided post-measures, who had only attended 7 sessions or less (just under half the program) and this enabled some comparisons to be made with those who attended more often. The profile of these mothers was slightly healthier than those who completed more Acorn sessions with just over half having minimal (38.1%) or no (14.3%) symptoms of depression compared to 44.1% of all Acorn mothers. These mothers also tended to be experiencing less parental stress than the broader group with only 2 (9.5%) yielding total stress scored in the 'clinically significant' or 'high' range. However, similar proportions indicated experiencing 'parental distress' (11 mothers, 52.4%). For the 18 mothers whose child was aged 12 months or younger perceived parental self-efficacy as measured by the KPCS was similar to the broader group of mothers with 16 (88.9%) yielding scores at least at the 'clinical level' and 5 mothers (27.8%) indicating 'severe clinical'.*

Applying paired sample t tests for all psychometric scales where pre and post scores were available significant improvements for those who completed 7 sessions or less were found for all the PSI-SF measures: Total Parenting Stress ( $M_{diff} = 15.37, t(18)=3.50, p<.005$ ) with a medium-large effect size (.76); Parental Distress ( $M_{diff} = 6.00, t(18)=4.00, p<.001$ ) with a medium effect size (.63); Parent-Child Dysfunctional Interaction ( $M_{diff} = 3.16, t(18)=2.51, p<.05$ ) with a medium effect size (.45); and Difficult Child ( $M_{diff} = 4.58, t(18)=2.17, p<.05$ ) with a medium effect size (.49). However, there were no significant improvements evident in the PHQ-9 depression scores for these mothers, nor in the Perceived Parental Self-Efficacy (KPCS scores) for the 16 mothers whose children were aged 1 year or less on completion of the program. Only two of the mothers who had attended 7 times or less completed pre NCAT observations.

The 21 mothers who completed the Acorn program but attended less than half of the Acorn sessions also reported a range of improvements across the indicators addressing each outcome listed in Table 5 which largely mirrored the answers supplied by the broader group. Seventeen (81.0%) of the 21 mothers indicated that *The group has helped me to feel closer to my child* with 10 (46.7%) strongly agreeing this was the case, and identical numbers indicated *I interact better with my child because of attending this group*. In some instances these mothers provided more positive responses than the broader group, universally agreeing that *My child has benefitted from my attending the group*, and all but one agreeing that *I have gained more confidence as a parent by attending the group* (9 mothers 'strongly' agreeing). These mothers also tended to agree more strongly that *the group has helped me to cope better as a parent* (42.9% agreeing strongly) and that *the group has made me feel better about myself as a parent* (47.6% agreeing strongly). While 16 mothers (76.2%) indicated in the affirmative, having attended less group sessions than their peers, these mothers were less likely than the broader group to indicate that they had *I made friends with other parents in the group*, with 5 (23.8%) agreeing strongly this was the case. They were also more likely to agree that *I am more aware of other services and community supports for myself or my family as a result of attending the group* with 85.7% agreeing this was the case (23.8% 'strongly') compared to 62.9% (15.0% 'strongly') of the broader group.

Acorn mothers attending less than half of the Acorn sessions appear to still benefit from the program, notably in reducing dimensions of parental stress, and across the range of indicators addressing the program outcomes. However, unlike their counterparts who attended more sessions, they did not significantly benefit regarding their depression nor PPSE. While small numbers render interpretations tentative, clearly mothers who for whatever reason cannot attend the whole program are still experiencing positive outcomes. It is also noteworthy that whilst these mothers attended less sessions, their attendance was spread over the duration of the program with all attending the penultimate session to complete the evaluation instruments. This may have provided the time for mothers to enact strategies acquired through the program at their own pace between attended sessions. It is also the case that providing the current program over the three months may be particularly important as most Acorn mothers were unable to attend all 15 sessions (section 6.3). However, we can conclude that there are greater benefits for mothers who attend more than 7 Acorn sessions in terms of wellbeing and parental confidence/perceived parental self-efficacy.



## 9.0 Dose/Response

There were 51 mothers who repeated the program later (including one who attended on three separate occasions). There was little difference in these mothers compared with the broader group in terms of age (30.3 years, SD 5.6), educational level reached, marital status, country of birth, language spoken at home, or main source of household income. Repeating mothers were more likely to have had more children with 44.0% having two or more compared with 34.9% of the broader group, and the mean age of the youngest child was 8.4 months (compared to 9.1 months for the broader group).

Surprisingly, on their first occasion attending Acorn, repeating mothers scored within the 'normal' range in their pre-measures addressing parental stress except for Parental Distress which averaged at the 'clinical' level. Nonetheless, these mothers significantly improved across all Parental Stress domains in the post measure on their first-time attending Acorn, with the mean score of Parental Distress lowering from 40.24 to 36.02 to within the 'normal' range ( $M_{diff} = 4.21, t(41)=3.71, p<.005, d.45$ ). These mothers also improved significantly in their PHQ-9 depression scores ( $M_{diff} = 2.54, t(40)=3.14, p<.005, d.37$ ). For the 29 repeating mothers whose child was one year old or less, Perceived Parental Self-Efficacy also improved significantly after the first-time attending Acorn with a medium-large effect size ( $M_{diff} = 3.55, t(28)=5.17, p<.001, d.75$ ).

Thirty-nine repeating mothers completed pre and post PSI-SF and PHQ-9 measures on their second attending occasion. On repeating the program mothers' scores again significantly improved in depression ( $M_{diff} = 1.62, t(38)=2.24, p<.05, d.23$ ) and across all the Parental Stress domains again with their mean score in Parental Distress lowering from 40.43 to 36.17 ( $M_{diff} = 4.26, t(38)=3.46, p<.001, d.46$ ). However, while Perceived Parental Self Efficacy improved on the second occasion, this was marginally below the .05 significance level ( $M_{diff} = 1.72, t(24)=1.98, p=.059, d.41$ ). This may be explained by the higher mean baseline score for these mothers on commencing the second program (M 34.8, SD 4.20 compared to M 32.8, SD 4.76 on the first occasion).

NCAT data was available for 20 mothers who were to go on and repeat the Acorn program. On the first occasion of attending Acorn in their pre-measures these mothers and children tended to perform at a very similar level to the broader sample who did not go on to repeat the program with 7 mothers (35.0%) scoring  $>-1SD$  from the normative mean in their Caregiver Total scores (almost identical to the broader group), 25.0% of children scoring at this level for their total score (marginally better than the broader group at 27.6%), and 8 dyads (40.0%) scoring  $>-1SD$  from the normative mean in their Caregiver/Infant score. However, despite their children performing well in the post measures (as did children generally who attended the program), these mothers performed more poorly in the post NCAT compared to their peers, with 11 mothers (55.0%) scoring  $>-1SD$  from the normative mean in their Caregiver Total scores, and 8 dyads (40.0%) scoring  $>-1SD$  from the normative mean in their Caregiver/Infant score.

Interpretation is tentative here, but anecdotally clinicians reported that some mothers who later went on to repeat the program had been experiencing significant personal issues during their first engagement with Acorn, including domestic violence which may have exerted an influence on them during the NCAT post-measures taken in their homes (also highlighting a limitation of 'snap-shot' pre and post measures particularly for a small sample of vulnerable families). However, NCAT findings support the decisions taken by the clinician to invite these mothers to repeat the program. Unfortunately, the number of repeating mothers who completed the NCAT on a second occasion was too small to draw conclusions (6 mothers).

Clearly there is some evidence to support parental wellbeing improvements for mothers repeating the Acorn program, although many of those also benefited from the first occasion attending Acorn.





## 10.0 Discussion

*The Acorn program successfully engaged a varied range of vulnerable mothers whose mental health challenges were imposing on parenting their children. Depression, poor perceived parental self-efficacy, parental stress, and high parental distress levels were causes of concern for these mothers, many of whom indicating the need for clinical intervention at the beginning of the program. As expected, these mental health issues correlated, and comorbidity was common among Acorn mothers with around a third indicating BPD. Drawing on attachment theory, the program has blended strategies to successfully address both the quality of the mother-child interaction and psychosocial strategies known to help enhance maternal mental health wellbeing.*

The three Principal Components of the program, and its delivery have been broadly appreciated by participating mothers and the program is clearly aligned with and addresses the identified needs of its client base. Despite a number of group-based interventions addressing maternal mental health recording poor attendance with high drop-out rates (J. H. Goodman & Santangelo, 2011), Acorn has successfully encouraged engagement for the large majority of even the most vulnerable of its targeted population, and this level of engagement, and the perceived helpfulness of each of the Acorn Principal Components has increased over time as the program evolved (supporting the adapted PAR evaluation methodology and its concerns with ongoing program improvement). Engaged mothers almost universally recommended the program to their peers. This may be related to the program's commitment to providing an environment that felt safe, appropriate, and respectful, with clear resources and explanations, using facilitators who were almost universally perceived as understanding of client issues, and presenting opportunities for group-based peer support. Many of these elements harmonise with identified service provision wishes of postpartum mothers with depression detailed elsewhere (M. Muzik et al., 2013).

The Acorn program is clearly achieving its stated objectives and overall Goal. Dyads attending the Acorn program have enhanced the quality of their interactions, evidenced by significant improvements in the three most reliable totalled NCAT scales for the mother, child, and dyad. Given the relationship between the quality of the parent-child interaction and future child outcomes this is an encouraging finding. An advantage of this study was the inclusion of this direct observational measure applied independently of and triangulated with mother's self-reports. It is also noteworthy that the NCAT 'Caregiver Total' has strong predictive validity with measures of 'maternal support', and measures of 'maternal reflective functioning' (Byrne & Keefe, 2003; Nicole L Letourneau et al., 2018; Oxford & Findlay, 2013; Sumner & Spitz, 1994). 'Caregiver/Infant Total' scores also predict insecure attachment (Zaslow et al., 2009) and improvements here were significant for a range of 'most' vulnerable sub-populations taken from what can be considered an already vulnerable target population of mothers and children (mothers indicating BPD, mothers with 2+ children under the age of 3 years, single mothers, and those for whom Government Benefits were the main source of household income). Meta-analysis has also established the NCAT as a reliable outcome measure for interventions addressing parent sensitivity (Bakermans-Kranenburg et al., 2008); a central parenting concept in attachment theory and a key determinant to promote parent-child attachment (Ainsworth et al., 1978; Juffer et al., 2017). It is noteworthy that the mother's 'sensitivity of cues' sub-scale in the NCAT improved significantly in their post-measure.

An advantage of the NCAT is its ability to directly observe and measure the child contribution to the parent-child interaction. A surprising and highly encouraging finding from the NCAT observations was the significant improvement in child's 'Clarity of Cues' scores; by the end of the program there were substantially smaller proportions of Acorn children scoring  $>-1SD$  (6.9%) from the normative mean than in the broader population database. Much of the Dance Play component of Acorn engages children in active expression and this may have enhanced their skills considerably here to the point where cue clarity was more common among Acorn children than the broader population.



## 10.0 Discussion

However, improvements in the quality of the dyad interaction were not found to be significant in the NCAT for those who spoke a language other than English at home and for those with low education levels, although the latter was marginal ( $p=0.051$ ). Interpretation of why the non-English speaking household dyad did not improve significantly is difficult as this finding runs counter to the improvements indicated in self-reports for this group, and across all other standardized measures where significant improvements were found. For example, 89.3% of mothers from non-English speaking homes agreed that they interacted better with the child because of Acorn in the post measure (39.3% 'strongly'), and 100% that the group had helped them to feel closer to their child (50% 'strongly'). However, this small NCAT group of 19 dyads were culturally heterogeneous (speaking 7 different languages at home), and while the NCAT has been successfully applied with some ethnic communities it is possible that cultural barriers to be being observed and videoed with their children may have influenced behaviour for some of these dyads. It is also the case that while the above improvements are very encouraging across all NCAT measures, many of the dyads began the program at a very low baseline and the need for more assistance was indicated in the post-measures, notably in the areas of 'Socio-Emotional Growth-Fostering' and 'Cognitive Growth Fostering'.

The improvements observed in NCAT scores were supported in the Acorn mothers' self-reports. The large majority of mothers indicated that they interacted better with their children because of the program, that their child had benefitted, and that the program had helped them feel closer to their child with this being repeated six-eight months after completing the program. Mothers also indicated that the program has also almost universally helped in their parenting of other non-attending children. Most mothers reported improving substantially across a range of parenting qualities including identifying and understanding their child's needs, feelings, and perspectives of the world and enhancing their ability to respond appropriately with these again being reaffirmed six-eight months after leaving Acorn by the large majority of attending mothers. For the few who did not indicate improvements this was often qualified with comments indicating they were already capable in the specific area. Given the difficulties maternal mental illness can impose on mother-child interaction the above improvements are notable, and these were accompanied by widespread reporting of improved (and sustained) parental confidence and significant improvements in perceived parental self-efficacy (PPSE) with medium effect sizes for Acorn mothers and all vulnerable sub-groupings including those for whom Government benefits were the main source of household income and those with low formal education (known moderators of the effects of maternal mental illness on parenting behaviour). Again, given the importance of this dimension for successful parenting and its relationship to actual parenting competence this is very encouraging and supports the substantial improvements in

parental competence indicated by over 9 in 10 engaged mothers both on completing the program and six-eight months later. These included feeling comfortable playing and allowing their child to explore, and in employing a range of ways to interact with their child. Improvements in the ability to reflect on the impacts of their mental health and past experiences on their own parenting were also close to universally experienced. Over 7 in 10 indicated that their enjoyment in their parenting role had increased substantially on completing the program with this largely sustained six-eight months later.

In addition to improved parenting, mothers also provided indications that their wellbeing had been enhanced because of attending the program, with many reporting feeling better about themselves as parents and being better able to cope (with substantial numbers also indicating that they were better equipped to cope specifically with their depressive symptoms). Being more confident to access other suitable family services if needed was also reported by most mothers although this was expressed less strongly. Interestingly this appears to have continued to improve months after completing the program as have indications of increased family resilience and independence. Family relationship improvements were also noted by most mothers with this improving months after the program was completed. This suggests that for some mothers, improvements in family relations may have taken time to come to fruition after the program, but that where this was the case, these mothers nonetheless still identified and acknowledged the role of Acorn in helping this to happen. While it is likely that some existing familial circumstances and contexts may be impervious to the influence of a parenting program which did not include fathers, it was still the case that *improved family relations* were spontaneously raised as the 'most significant change' by some attending mothers. Several mothers described a mechanism for this being the sharing and enactment of parenting skills and strategies with their partners which had been acquired or honed through the program. Particularly noteworthy were the numbers of mothers (over 8 in 10) indicating substantial improvement in recognising they were not alone in their parental struggles.

There were also significant improvements in depression, Parental Stress, Parental Distress, Parent-child Dysfunctional Interaction and Difficult Child scores. This applied for Acorn mothers generally and for all vulnerable subgroupings considered with one exception, that being Difficult Child for those indicating BPD. While the large majority of 80.0% of mums indicating BPD scored within 'normal' limits in the post-measure of this domain, improving in this area for some of these mums appears to be more challenging. Clearly, the standardized tools applied in this evaluation clearly show that the well-being of most mothers attending Acorn has improved over the duration of the program, and their self-reported measures taken after program completion and six-eight months



## 10.0 Discussion

later attribute this improvement to their participation in the program. Moreover, given the known protective buffering effects of improved parent-child relationships and parental confidence, it is likely that for those mothers experiencing on-going maternal mental health issues (and notably those indicating BPD), there are still benefits acquired from the program in terms of reducing the detrimental impacts of their mental health on their children.

Finally social connectivity has been enhanced for Acorn mothers. Providing a safe, non-judgemental group environment of mothers with shared parenting and mental health issues and engaging them in collective interactive group activities with their children has encouraged friendships to develop for over 8 in 10 participants. Many of these friendships appear to have continued with similar proportions indicating this in the follow-up measure and around 4 in 10 mothers strongly agreed this was the case. A majority felt more connected to their community because of attending the group with this being restated six-eight months later. There was also a 'rippling' effect evident with nearly 9 in 10 mothers indicating they had shared learning from the program with other parents like them; over 4 in 10 mothers strongly agreeing this was the case six-eight months after completing the program. Given the known influences of social isolation and disconnect on maternal mental health, the program has clearly provided benefits in this regard for engaged mothers.





## 11.0 Limitations

*It took some time for the critical Reference Group to review and identify an appropriate and practically applicable standardized tool to measure the quality of the parent-child interaction for the Acorn program. A broad range of potential tools were reviewed including direct measures of attachment, but these were considered problematic in the 'real life' group-based community settings of the Acorn program particularly where proceedings required a degree of distress for the child and mother (such as Ainsworth's 'Strange Situation' measure) and concerns were raised about creating a further disincentive for targeted mothers known to be difficult to engage.*

These concerns were balanced by the potential benefits of implementing a measure that could directly observe the parenting interaction (both mother and child behaviour) to ensure the evaluation was not wholly reliant on the mother's self-reports for this Acorn objective. The application of the NCAT taken with the triangulated methods addressing mother's perceptions and experiences of child behaviour enabled Objective 1 to be addressed comprehensively. While the NCAT was applied from Wave 6 of the program, the demographic and psychological profile of attending mothers completing was very similar to that of all attending mothers which was consistent across all Acorn waves (a partial consequence of the consistency of referral pathways over the duration of the program – section 5.1). It was also the case that the ages of children and profile of mothers who completed the pre-measure for the NCAT but not the post-measure was again very similar to those that completed both measures. Given that there was little indication of systematic reasons for withdrawal from the program and the consistency with positive findings from self-completion measures, we are confident that the findings from the 145 dyads observed pre and post using the NCAT reflect those of Acorn mothers as a whole.

Comparisons between post-measures and follow-up interviews employed different methods to obtain responses from Acorn mothers. It is possible that respondents may have been more inclined to provide positive answers in the follow-up because of these being elicited in an interview as opposed to the demonstrable anonymity of a self-completion questionnaire. However, given that the interviewer for the follow-up was independent of the Acorn program, was not known to participants, and that all mothers were clearly informed their responses and names would remain strictly confidential, mothers had little motivation to stress positive outcomes

in their lives attributed to participating in a program they had completed months earlier. Moreover, it may have been expected that the perceived impact of a program would wane over time or possibly a contrast effect might occur whereby current impacts would be judged inferior in comparison to the largely positive impressions experienced immediately after the program by vulnerable mothers. However, arguably the most striking finding has been the consistency of responses between the two measures taken six to eight months apart, and we are confident that this consistency coupled with the above considerations have yielded authentic responses from mothers.

We were mindful of overburdening vulnerable women in the community setting with the demands of evaluation and focused specifically on addressing the objectives of Acorn; subsequently there were related dimensions which were not addressed in this exercise. We did not screen for substance use disorder, nor for long-standing clinical diagnosis of psychotic or bi-polar disorder, the presence of which may interfere with the score for the MSI-BPD (Zanarini et al., 2003). We did not measure post-traumatic stress disorder or anxiety. However, the measures selected provide a burden of relevant evidence to assess the extent to which the specified objectives have been achieved in moving toward the goal of the program. There are of course a range of alternative tools and dimensions which could have been included to measure 'wellbeing' given the multifaceted conditions that contribute to, and varied nature of maternal mental health illness. In the context of the emerging COVID-19 pandemic, the impact of Acorn on anxiety could be usefully explored in the future and this was included as a further indicator of wellbeing in our pilot study of a new on-line version of the Acorn program developed during lockdown.<sup>25 26</sup>

We included the question asking mothers to express 'the most significant change' for them because of participating in Acorn to acquire qualitative evidence of the impacts of the program in the mothers' own words. Given this response was written down in the post-measure this may have been less authentic for those for whom English was not their first language. It is also possible that coming toward the end of the questionnaire, fatigue may have influenced expression, and some priming may have occurred whereby mothers may have been disinclined to repeat answers provided earlier in the closed question options. In this regard, the data obtained from this question may be considered complementary to the quantitative data adding qualitative context rather than proving separate clear indications of the frequency of experiences expressed.

Finally, we chose a participatory action research design for this evaluation which precluded using a comparison/control group. Given the evolving nature of this community based multi-site,

<sup>25</sup> Aylward, P (2021) Acorn On-Line Parenting Program Evaluation Report. Hopscotch Foundation (available on request)

<sup>26</sup> Aylward, P. & Sved Williams, A. (2021) Can on-line group mental health programs replace face-to-face group mental health programs? Lessons from the ACORN parenting program. SA Population Health Virtual Conference Presentation . October.



## 11.0 Limitations

holistic program addressing a diversity of vulnerable mothers and children we believe this was most appropriate. The importance of utilizing the evaluation formatively was recognised in anticipation that program processes and early outcomes would need to be monitored closely to enable any issues to be identified and relayed to the Reference Group for consideration and potential program revision. The 'Wave' structure of the program facilitated action research cycles to be implemented with findings acted upon in a timely manner by the program team. Moreover, the geographical dispersion of the various Acorn groups necessitated enlisting the partnership of the service providers to administer and collect the range of evaluation data needed; the need for partnership in this endeavour was clearly apparent. It was also the case that an earlier version of Acorn had been running on a much smaller scale for several years with known (if anecdotal) benefits for participants which were well recognised by the service providers and referrers; these factors helped to inform the initial decision to fund and expand the program. There were therefore ethical concerns about identifying and recruiting appropriate vulnerable mothers and then denying them the intervention for the purpose of establishing a comparison group. Relatedly, this also ran the risk of alienating Acorn service providers and/or referring agencies who had been engaged with Acorn prior to and during the evaluation. A 'waiting list' comparison group was considered when the program reached a state of maturity, but in this case the host agency where unwilling to deny Acorn to their clients and the program expanded to accommodate all referrals who wished to engage with the program.

While there are clear associations between a range of improvements and participation in the Acorn program, causal attribution for this evaluation was premised on triangulating mixed methods and the inclusively developed 'theory driven' program logic stipulating the range of desired and predicted Acorn outcomes for the mothers and children. This approach enabled empirical evidence of 'causal' change to be accumulated across a broad range of relevant dimensions to establish the value and effectiveness of this holistic community program. Participant judgements of causality were also obtained directly through self-completion questionnaires and focus groups. The sustainability of the program impacts for mothers and children were also explored using individual telephone interviews six-eight months after completing the Acorn program, in which former clients could personally reflect on how the program had (or had not) achieved its objectives in relation to their own lives. The causal attribution of a range of deeply personal positive improvements to participation in the Acorn program was broadly indicated here and often strongly expressed months later to an independent interviewer over the telephone. Given the profound challenges experienced by Acorn mothers in the most intimate of their human relationships, providing this evidence strongly supports the effectiveness of the Acorn program. In addition, the impacts of the program in areas known to influence the quality of parenting were evidenced through the application of reliable standardised tools across a variety of vulnerable sub-populations of mothers in the program, and significant improvements were consistently found for these and over several time groupings during the 5–6-year period of program delivery. There has been an array of improvements broadly experienced by mothers and children attending Acorn, and the consistency of findings from the varied evidence accumulated over time has been supported by personal accounts of highly engaged mothers many of whom with profound on-going mental health challenges. Notwithstanding the strengths of quasi-experimental design, the case that Acorn has generated these outcomes and helped hundreds of vulnerable mothers and children is strongly supported by this evaluation.





## 12.0 Conclusions

*Acorn has been holistically achieving its stated objectives for the large majority of completing mothers. The program has clearly nurtured and enhanced parental wellbeing and the quality of the parent/child relationship for mothers experiencing identified mental health illnesses and their young children with enduring positive outcomes for both. Through enacting a program informed by attachment theory, Acorn has enhanced understanding of the relationship of child needs, feelings, and behaviours, for attending mothers who have acquired a greater ability to respond to these and to appreciate their child's perspective while developing their own reflective capacities concerning the impacts of their past experiences and current health issues on their parenting. This has further helped to enhance the parenting of older children in the family setting. Mothers have acquired greater parental competence and confidence to engage in a range of healthy interaction play activities freely and comfortably with their children who have also benefitted. Many mothers have grown to feel closer to their child with over half asserting this strongly and many are happier in their parenting. This has been accompanied by expanded social supports and friendships for many attending mothers.*

Moreover, there were clear improvements in mental health well-being: in depression and coping both with depression and parenting issues generally; in parental stress and distress; and in perceived parental self-efficacy. Clearly a broad array of known influences on the quality of the parent-child relationship have been significantly improved through the program for a broad range of vulnerable mothers.

Acorn mum's experiences have been shared with partners/spouses and this along with improvements in mothers' wellbeing has encouraged improved relationships within families. Learnings from this highly valued and universally recommended program have also been provided to peers in the broader community.

In conclusion, there is a strong weight of evidence accumulated from a range of triangulated data sources that Acorn is delivering a valued, appropriate, and effective program and through establishing stable referral pathways across the sector is reaching and engaging a diverse population of highly vulnerable mums and children. The program is achieving its stated objectives and the sustained nature of the impacts from Acorn six-eight months after its completion for the large majority of attending mums has been particularly impressive. The program is clearly aligned with and addresses the identified needs of its client base and has taken substantial steps toward holistically nurturing and enhancing parental wellbeing and the quality of the parent/child relationship for a large number of South Australian mothers.





## 13.0 References

- Abidin, R. R. (1995). *Parenting Stress Index (PSI) manual (3rd ed.)*. Charlottesville, VA: Pediatric Psychology Press.
- Abidin, R. R. (2012). *Parenting Stress Index (4 ed.)*. Florida: PAR Psychological Assessment Resources, Inc.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders: DSM-5 (5 ed.)*. Washington, DC: American Psychiatric Publishing.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., . . . Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience*, *256*(3), 174-186. doi:10.1007/s00406-005-0624-4
- Arante, F. O., Tabb, K. M., Wang, Y., & Faisal-Cury, A. (2020). The Relationship Between Postpartum Depression and Lower Maternal Confidence in Mothers with a History of Depression During Pregnancy. *Psychiatric Quarterly*, *91*(1), 21-30. doi:10.1007/s11126-019-09673-w
- Australian Government Department of Health and Ageing. (2009). *National Perinatal Depression Plan*. Retrieved from <http://www.health.gov.au/inter-net/mentalhealth/publishing.nsf/Content/perinatal-depression-2>
- Australian Institute of Health and Welfare. (2014). *Australia's Health 2014*. Retrieved from Canberra:
- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2005). Disorganized infant attachment and preventive interventions: A review and meta-analysis. *Infant Mental Health Journal*, *26*(3), 191-216.
- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2008). Less is more: meta-analytic arguments for the use of sensitivity-focused interventions. . In *Promoting positive parenting: An attachment-based intervention*. New York, NY: Taylor & Francis Group/Lawrence Erlbaum Associates.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.
- Barnard, K., & Martell, L. (1995). Mothering. In M. Bornstein (Ed.), *Handbook of parenting (3 ed., pp. 3-26)*. Hillsdale, NJ: Lawrence Erlbaum.
- Barnard, K. E., Hammond, M. A., Booth, C. L., Bee, H. L., Mitchell, S. K., & Spieker, S. J. (1989). Measurement and meaning of parent-child interaction. In C. L. F. Morrison & D. Keating (Eds.), *Applied developmental psychology (3 ed., pp. 39-80)*. New York, NY: Academic Press.
- Barr, J. A. (2008). Postpartum depression, delayed maternal adaptation, and mechanical infant caring: A phenomenological hermeneutic study. *International Journal of Nursing Studies*, *45*(3), 362-369. doi:<https://doi.org/10.1016/j.ijnurstu.2006.10.002>
- Bartsch, D. R., Roberts, R. M., Davies, M., & Proeve, M. (2015). Borderline personality disorder and parenting: clinician perspectives. *Advances in mental health*, *13*(2), 113-126. doi:10.1080/18387357.2015.1065554
- Beck, C. T. (1992). The lived experience of postpartum depression: A phenomenological study. *Nursing Research*, *41*(3), 166-170.
- Beck, C. T. (2001). Predictors of Postpartum Depression. *Nursing Research*, *50*(5), 275-285. doi:10.1097/00006199-200109000-00004
- Bednall, D., Spiers, M., Ringer, A., & Vocino, A. (2013). Response rates in Australian market research. Retrieved from <http://dro.deakin.edu.au/view/DU:30065463>
- Berlin, L., Zeanah, C. H., & A.F., L. (2008). Prevention and intervention programmes for supporting early attachment security. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: theory, research, and clinical applications (pp. 745-761)*. New York: The Guilford Press.
- Bilszta, J., Ericksen, J., Buist, A., & Milgrom, J. (2010). Women's experience of postnatal depression - beliefs and attitudes as barriers to care. *Australian Journal of Advanced Nursing (Online)*, *27*(3), 44-54.
- Bloomfield, L., Kendall, S., Applin, L., Attar-zadeh, V., Dearnley, K., Edwards, L., . . . Newcombe, T. (2005). A qualitative study exploring the experiences and views of mothers, health visitors and family support centre workers on the challenges and difficulties of parenting. *Health & Social Care in the Community*, *13*, 46-55.
- Bowlby, J. (1969). *Attachment. Attachment and Loss: Vol. 1. Loss*. New York: Basic Books.
- Byrne, M., & Keefe, M. (2003). Comparison of Two Measures of Parent-Child Interaction. *Nursing research*, *52*, 34-41. doi:10.1097/00006199-200301000-00005



## 13.0 References

- Caldwell, J., Meredith, P., Whittingham, K., & Ziviani, J. (2021). Shame and guilt in the postnatal period: a systematic review. *J Reprod Infant Psychol*, *39*(1), 67-85. doi:10.1080/02646838.2020.1754372
- Cicchetti, D., Toth, S. L., & Rogosch, F. A. (1999). The efficacy of toddler-parent psychotherapy to increase attachment security in offspring of depressed mothers. *Attachment & Human Development*, *1*(1), 34-66. doi:10.1080/14616739900134021
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale NJ: Erlbaum.
- Coleman, P. K., & Karraker, K. H. (1997). Self-efficacy and parenting quality: Findings and future applications. *Developmental Review*, *18*, 47-85.
- Coleman, P. K., & Karraker, K. H. (2003). Maternal self-efficacy beliefs, competence in parenting, and toddlers' behaviour and developmental status. *Infant Mental Health Journal*, *24*(2), 126-148.
- Conger, R. D., Belsky, J., & Capaldi, D. M. (2009). The intergenerational transmission of parenting: Closing comments for the special section. *Developmental Psychology*, *45*(5), 1276-1283. doi: <https://doi.org/10.1037/a0016911>
- Cornish, A. M., McMahon, C. A., Ungerer, J. A., Barnett, B., Kowalenko, N., & Tennant, C. (2006). Maternal depression and the experience of parenting in the second postnatal year. *Journal of Reproductive and Infant Psychology*, *24*(2), 121-132. doi:10.1080/02646830600644021
- COVID-19 Mental Disorders Collaborators. (2021). Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet*, *398*(10312), 1700-1712.
- Cox, E. Q., Sowa, N. A., Meltzer-Brody, S. E., & Gaynes, B. N. (2016). The Perinatal Depression Treatment Cascade: Baby Steps Toward Improving Outcomes. *Journal of Clinical Psychiatry*, *77*, 1189-1200.
- Crnec, R., Barnett, B., & Matthey, S. (2008a). *Karitane Parenting Confidence Scale: Manual*. Retrieved from Sydney South West Area Health Service. Sydney, Australia:
- Crnec, R., Barnett, B., & Matthey, S. (2008b). Development of an Instrument to Assess Perceived Self-Efficacy in the Parents of Infants. *Research in Nursing and Health*, *31*, 442-453.
- Crnec, R., Barnett, B., & Matthey, S. (2010). Review of scales of parenting confidence. *Journal of Nursing Measurement*, *18*(3), 210-240.
- Cruwys, T., Dingle, G. A., & Haslam, C. (2013). Social group memberships protect against future depression, alleviate depression symptoms and prevent depression relapse. *Social Science & Medicine*, *98*, 179-186.
- Cruwys, T., Haslam, S. A., & Dingle, G. A. (2014). Depression and social identity: An integrative review. *Personality and Social Psychology Review*, *18*, 215-238.
- Cruwys, T., Haslam, S. A., & Dingle, G. A. (2014). Feeling connected again: Interventions that increase social identification reduce depression symptoms in community and clinical settings. *Journal of Affective Disorders*, *159*, 139-146.
- Cuijpers, P., Brännmark, J. G., & van Straten, A. (2008). Psychological treatment of postpartum depression: a meta-analysis. *Journal of Clinical Psychology*, *64*, 103-118. doi:doi.org/10.1002/JCLP.20432
- Cuijpers, P., Quero, S., Noma, H., Ciharova, M., Miguel, C., Karyotaki, E., . . . Furukawa, T. A. (2021). Psychotherapies for depression: a network meta-analysis covering efficacy, acceptability and long-term outcomes of all main treatment types. *World Psychiatry*, *20*(2), 283-293. doi:<https://doi.org/10.1002/wps.20860>
- da Rocha, M., Rhodes, S., Vasilopoulou, E., & Hutton, P. (2018). Loneliness in Psychosis: A Meta-analytical Review. *Schizophrenia Bulletin*, *13*(44), 114-125.
- De L'Etoile, S. (2006). Infant behavioural responses to infant directed singing and other maternal interactions. *Infant Behaviour and development*, *29*, 456-470.
- De Wolff, M. S., & Van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, *68*, 571-591.
- Dennis, C. L., Falah-Hassani, K., & Shiri, R. (2017). Prevalence of antenatal and postnatal anxiety: systematic review and meta-analysis. *British journal of Psychiatry*, *210*(5), 315-323. doi:10.1192/bjp.bp.116.187179
- Dennis, C. L., & Hodnett, E. D. (2007). *Psychosocial and psychological interventions for treating postpartum depression*. Retrieved from
- Dittrich, K., Fuchs, A., Bempohl, F., Meyer, J., Führer, D., Reichl, C., . . . Resch, F. (2018). Effects of maternal history of depression and early life maltreatment on children's health-related quality of life. *Journal of Affective Disorders*, *225*, 280-288. doi:<https://doi.org/10.1016/j.jad.2017.08.053>



## 13.0 References

- Dunford, E., & Granger, C. (2017). Maternal Guilt and Shame: Relationship to Postnatal Depression and Attitudes towards Help-Seeking. *Journal of Child and Family Studies, 26*(6), 1692-1701. doi:10.1007/s10826-017-0690-z
- Eastwood, J., Jalaludin, B., Kemp, L., Phung, H., Barnett, B., & Tobin, J. (2012). Social exclusion, infant behavior, social isolation, and maternal expectations independently predict maternal depressive symptoms. *Open Access, Wiley Periodicals Inc, 14*-23. doi:doi: 10.1002/brb3.107
- Efron, B., & Tibshirani, R. (1993). *An introduction to the bootstrap*. New York: Chapman & Hall.
- Eisenhower, A. S., Baker, B. L., & Blacher, J. (2009). Children's delayed development and behavior problems: Impact on mothers' perceived physical health across early childhood. *Social Science & Medicine, 68*, 89-99. doi:doi:10.1016/j.socscimed.2008.09.033
- Epston, D. (1994). Extending the conversation. *Family Therapy Networker, 31*-63.
- Ericksen, J., Loughlin, E., Holt, C., Rose, N., Hartley, E., Buultjens, M., . . . Milgrom, J. (2018). A Therapeutic Playgroup for Depressed Mothers and their Infants: Feasibility Study and Pilot Randomized Trial of Community Hugs *Infant Mental Health Journal, 39*(4), 396-409. doi:<https://doi.org/10.1002/imhj.21723>
- Evans, C. A., & Porter, C. L. (2009). The emergence of mother-infant co-regulation during the first year: Links to infants' developmental status and attachment. *Infant Behavior and Development, 32*(2), 147-158. doi:10.1016/j.infbeh.2008.12.005
- Eyden, J., Winsper, C., Wolke, D., Broome, M., & MacCallum, F. (2016). A systematic review of the parenting and outcomes experienced by offspring of mothers with borderline personality pathology: Potential mechanisms and clinical implications. *Clinical Psychology Review, 47*, 85-105.
- Field, T. (2010). Postpartum depression effects on early interactions, parenting, and safety practices: a review. *Infant Behavior and Development, 33*, 1-6. doi:10.1016/j.infbeh.2009.10.005
- Field, T. (2018). Postnatal anxiety prevalence, predictors and effects on development: A narrative review. *Infant Behaviour and development, 101*. doi:10.1016/j.infbeh.2018.02.005
- Field, T., Hernandez-Reif, M., & Diego, M. (2006). Intrusive and withdrawn depressed mothers and their infants. *Developmental Review, 26*(1), 15-30.
- Field, T., Hernandez-Reif, M., Diego, M., Feijo, L., Vera, Y., Gil, K., & Sanders, C. (2007). Still-face and separation effects on depressed mother-infant interactions. *Infant Mental Health Journal, 28*(3), 314-323. doi:<https://doi.org/10.1002/imhj.20138>
- Finlayson, T., Siefert, K., Ismail, A., & Sohn, W. (2007). Maternal self-efficacy and 1-5-year-old children's brushing habits. *Community Dentistry and Oral Epidemiology, 35*, 272-281.
- Fonagy, P., & Target, M. (1997). Attachment and reflective function: Their role in self organization. *Development and Psychopathology, 9*, 679-700.
- Forman, D., O'Hara, M. W., Stuart, S., Gorman, L. L., Larsen, K. E., & Coy, K. C. (2007). Effective treatment for postpartum depression is not sufficient to improve the developing mother-child relationship. *Development and Psychopathology, 19*. doi:10.1017/S0954579407070289
- Gerdes, A. C., Hoza, B., Arnold, L. E., Pelham, W. E., James M. Swanson, Wigal, T., & P.S., J. (2007). Maternal Depressive Symptomatology and Parenting Behavior: Exploration of Possible Mediators. *Journal of Abnormal Child Psychology, 35*(5), 705-714. doi:<https://doi.org/10.1007/s10802-007-9134-3>
- Goodman, J. H., & Santangelo, G. (2011). Group treatment for postpartum depression: a systematic review. *Archives of Women's Mental Health, 14*(4), 277-293.
- Goodman, S. H., & Gotlib, I. H. (1999). Risk for psychopathology in the children of depressed mothers: a developmental model for understanding mechanisms of transmission. *Psychological Review, 106*(3), 458-490.
- Greene, J. C., & Caracelli, V. J. (1997). Defining and describing the paradigm issue in mixed-method evaluation. In J. C. Greene & V. J. Caracelli (Eds.), *Advances in mixed-method evaluation: The challenges and benefits of integrating diverse paradigms* (pp. 5-17). San Francisco, CA: Jossey-Bass.
- Hanington, L., Heron, J., Stein, A., & Ramchandani, P. (2012). Parental depression and child outcomes—is marital conflict the missing link? *Child: Care Health & Development, 38*, 520-529.
- Haslam, C., Cruwys, T., & Haslam, S. A. (2016). Groups 4 Health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of Affective Disorders, 194*, 188-195.



## 13.0 References

- Hoffman, C., Dunn, D. M., & Njoroge, W. F. M. (2017). Impact of Postpartum Mental Illness upon Infant Development. *Current Psychiatry Reports, 19*(12), 100. doi:10.1007/s11920-017-0857-8
- Holden, J. M. (1991). Postnatal depression: Its nature, effects, and identification using the Edinburgh Postnatal Depression Scale. *Birth, 18*, 211–221.
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: a statistical approach to determining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12-19.
- Jones, C. C., Jomeen, J., & Hayter, M. (2014). The impact of peer support in the context of perinatal mental illness: a meta-ethnography. *Midwifery, 30*(5), 491-498. doi:10.1016/j.midw.2013.08.003
- Jones, T. L., & Prinz, R. J. (2005). Potential roles of parental self-efficacy in parent and child adjustment: A review. *Clinical Psychology Review, 25*, 341–363.
- Juffer, F., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2017). Pairing attachment theory and social learning theory in video-feedback intervention to promote positive parenting. *Current Opinion in Psychology, 15*, 189-194.
- Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health 78*, 458–467.
- Keeter, S., Hatley, N., Kennedy, C., & Lau, A. (2017). *What Low Response Rates Mean for Telephone Surveys Telephone polls still provide accurate data on a wide range of social, demographic and political variables, but some weaknesses persist.* <https://www.pewresearch.org/>: Pew Research Center.
- Kindsvatter, A., Desmond, K., Yanikoski, A., & Stahl, S. (2013). The use of therapeutic letters in addressing parent-child attachment problems. *The Family Journal, 21*(1), 74-79.
- Kluczniok, D., Boedeker, K., Fuchs, A., Hindi Attar, C., Fydreich, T., Fuehrer, D., . . . Bermphohl, F. (2016). Emotional Availability in mother-child interaction: the effects of maternal depression in remission and additional history of childhood abuse *Depression and Anxiety, 33*(7), 648-657. doi:<https://doi.org/10.1002/da.22462>
- Knitzer, J., Theberge, S., & Johnson, K. (2008). *Reducing Maternal Depression and Its Impact on Young Children: Toward a Responsive Early Childhood Policy Framework, Project thrive issue brief 2.* Retrieved from Mailman School of Public Health:
- Kochanska, G., Aksan, N., & Carlson, J. J. (2005). Temperament, relationships, and young children's receptive cooperation with their parents. *Developmental Psychology, 41*(4), 648–660. doi:10.1037/0012-1649.41.4.648
- Kohlhoff, J., & Barnett, B. (2013). Parenting self-efficacy: Links with maternal depression, infant behaviour and adult attachment. *Early Human Development, 89*, 249-256.
- Krantz, D. L. (1995). Sustaining versus resolving the quantitative-qualitative debate. *Evaluation and Program Planning, 18*, 89-96.
- Kroenke, K., Spitzer, R., & Williams, W. (2001a). Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*, 606-616.
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001b). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606-613.
- Kroh, S., & Lim, G. (2021). Perinatal depression. *International Anesthesiology Clinics, 59*(3), 45-51. doi:doi: 10.1097/AIA.0000000000000325
- Letourneau, N. L., Dennis, C. L., Benzies, K., Duffett-Leger, L., Stewart, M., Tryphonopoulos, P. D., . . . Watson, W. (2012). Postpartum depression is a family affair: addressing the impact on mothers, fathers, and children. *Issues Ment Health Nurs, 33*(7), 445-457. doi:10.3109/01612840.2012.673054
- Letourneau, N. L., Dennis, C. L., Cosic, N., & Linder, J. (2017). The effect of perinatal depression treatment for mothers on parenting and child development: A systematic review. *Depression and Anxiety, 34*(10), 928-966. doi:10.1002/da.22687
- Letourneau, N. L., Tryphonopoulos, P. D., Novick, J., Hart, J. M., Giesbrecht, G., & Oxford, M. L. (2018). Nursing Child Assessment Satellite Training Parent-Child Interaction Scales: Comparing American and Canadian Normative and High-Risk Samples. *Journal of Pediatric Nursing, 40*, 47-57.
- Lieberman, A., & Zeanah, C. (1999). Contributions of attachment theory to infant-parent psychotherapy and other interventions with young children. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment* (pp. 555–575). New York: Guilford Press.
- Lieberman, A. F. (2004). Child-parent psychotherapy: A relationship-based approach to the treatment of mental health disorders in infancy and early childhood. In A. J. Sameroff, S. C. McDonough, & K. L. Rosenblum (Eds.), *Treating parent-infant relationship problems: Strategies for intervention.* New York, NY: Guilford Press.



## 13.0 References

- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20*(5), 561-592. doi:[https://doi.org/10.1016/S0272-7358\(98\)00100-7](https://doi.org/10.1016/S0272-7358(98)00100-7)
- Lumley, J., Austin, M. P., & Mitchell, C. (2004). Intervening to reduce depression after birth: A systematic review of the randomized trials. *International Journal of Technology Assessment in Health Care, 20*, 128-144.
- Malloch, S., Shoemark, H., Črnčec, R., Newnham, C., Paul, C., Prior, M., . . . Burnham, D. (2012). Music therapy with hospitalized infants—the art and science of communicative musicality. *Infant Mental Health Journal, 33*(4), 386-399. doi:<https://doi-org.ezproxy.flinders.edu.au/10.1002/imhj.21346>
- McBurney, D. H., & White, T. L. (2010). *Research methods* (8 ed.). Belmont, CA: Wadsworth.
- McMahon, C. A., Barnett, B., Kowalenko, N. M., & Tennant, C. C. (2006). Maternal attachment state of mind moderates the impact of postnatal depression on infant attachment. *J Child Psychol Psychiatry, 47*(7), 660-669. doi:10.1111/j.1469-7610.2005.01547.x
- Meuldijk, D., McCarthy, A., Bourke, M. E., & Grenyer, B. F. S. (2017). The value of psychological treatment for borderline personality disorder: Systematic review and cost offset analysis of economic evaluations. *PloS One, 12*(3), e0171592-e0171592. doi:10.1371/journal.pone.0171592
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
- Miller, W. (2014). Interactive Journaling as a Clinical Tool. *Journal of Mental Health Counseling, 36*(1), 31-42.
- Moules, N. J. (2009). The past and future of therapeutic letters: Family suffering and healing words. *Journal of Family Nursing, 15*(1), 102-111. doi:10.1177/1074840709332238
- Mulsow, M., Caldera, Y. M., Pursley, M., Reifman, A., & Huston, A. C. (2002). Multilevel factors influencing maternal stress during the first three years. *Journal of Marriage and Family, 64*(4), 944-956. doi:10.1111/j.1741-3737.2002.00944.x
- Muñoz-Navarro, R., Cano-Vindel, A., Medrano, L. A., Schmitz, F., Ruiz-Rodríguez, P., Abellán-Maeso, C., . . . Hermosilla-Pasamar, A. M. (2017). Utility of the PHQ-9 to identify major depressive disorder in adult patients in Spanish primary care centres. *BMC Psychiatry, 17*(1), 291. doi:10.1186/s12888-017-1450-8
- Murray, L., Cooper, P., Wilson, A., & Romaniuk, H. (2002). Controlled trial of the short-and long-term effect of psychological treatment of post-partum depression. *British Journal of Psychiatry, 182*, 420-427.
- Murray, L., & Cooper, P. J. (1997). Postpartum depression and child development. *Psychological Medicine, 27*, 253-260.
- Muzik, M., M., A., Bonham, C., Lisa Rosenblum, K., Broderick, A., & Kirk, R. (2013). Perspectives on trauma-informed care from mothers with a history of childhood maltreatment: a qualitative study. *Child Abuse & Neglect, 37*(12), 1215-1224. doi:10.1016/j.chiabu.2013.07.014
- Muzik, M., Rosenblum, K. L., Alfafara, E. A., Schuster, M. M., Miller, N. M., Waddell, R. M., & Stanton Kohler, E. (2015). Mom Power: preliminary outcomes of a group intervention to improve mental health and parenting among high-risk mothers. *Archives of Women's Mental Health, 18*(3), 507-521. doi:10.1007/s00737-014-0490-z
- Naber, D., & Bullinger, M. (2018). Should antidepressants be used in minor depression? *Dialogues in clinical neuroscience, 20*(3), 223-228. doi:10.31887/DCNS.2018.20.3/dnaber
- NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 958-978.
- Nilaweera, I., Doran, F., & Fisher, J. (2014). Prevalence, nature and determinants of postpartum mental health problems among women who have migrated from South Asian to high-income countries: a systematic review of the evidence. *Journal of Affective Disorders, Sep 166*, 213-226. doi:10.1016/j.jad.2014.05.021
- Nonnenmacher, N., Noe, D., & Ehrental, J. C. (2016). Postpartum bonding: the impact of maternal depression and adult attachment style. *Archives of Women's Mental Health, 19*, 927-935.
- Norhayati, M. N., Hazlina, N. H., Asrenee, A. R., & Emilin, W. M. (2015). Magnitude and risk factors for postpartum symptoms: a literature review. *Journal of Affective Disorders, 175*, 34-52.
- Nylen, K. J., Moran, T., E., Franklin, C. L., & O'Hara, M. W. (2006). Maternal depression: A review of relevant treatment approaches for mothers and infants. *Infant Mental Health Journal, 27*(4), 327-343.



## 13.0 References

- O'Connor, T. G., Monk, C., & Burke, A. S. (2016). Maternal Affective Illness in the Perinatal Period and child development: findings on developmental timing, mechanisms and intervention. *Current Psychiatry Reports, 18*(3), 24. doi:10.1007/s11920-016-0660-y
- Oxford, M. L., & Findlay, D. M. (2013). *NCAST Caregiver/Parent-Child Interaction teaching manual* (M. L. Oxford & D. M. Findlay Eds. 2 ed.). University of Washington, School of Nursing: NCAST Publication.
- Patel, A. B., Sharp, C., & Fonagy, P. (2011). Criterion Validity of the MSI-BPD in a Community Sample of Women. *Journal of Psychopathology and Behavioral Assessment, 33*, 403-408. doi:10.1007/s10862-011-9238-5
- Perkins, J. M., Subramanian, S. V., & Christakis, N. A. (2015). Social networks and health: A systematic review of sociocentric network studies in low and middle-income countries. *Social Science & Medicine, 125*, 60-78.
- Poobalan, A. S., Aucott, L. S., Ross, L., Smith, W. C., Helms, P. J., & Williams, J. H. (2007). Effects of treating postnatal depression on mother-infant interaction and child development: systematic review. *British journal of Psychiatry, 191*, 378-386.
- Pucker, H. E., Temes, C. M., & Zanarini, M. C. (2019). Description and Prediction of Social Isolation in Borderline Patients Over 20 Years of Prospective Follow-Up. *Personal Disord, 10*(4), 383-388. doi:10.1037/per0000337
- Ramsauer, B., & Achtergarde, S. (2018). Mothers with acute and chronic postpartum psychoses and impact on the mother-infant interaction. *Schizophrenia Research, 197*, 45-58.
- Rayce, S. B., Rasmussen, I. S., Væver, M. S., & Pontoppidan, M. (2020). Effects of parenting interventions for mothers with depressive symptoms and an infant: Systematic review and meta-analysis. *BJPsych Open, 6*(1), E9. doi:10.1192/bjo.2019.89
- Reck, C., Hunt, A., Fuchs, T., Weiss, R., Noon, A., Moehler, E., . . . Mundt, C. (2004). Interactive regulation of affect in postpartum depressed mothers and their infants: an overview. *Psychopathology, 37*(6), 272-280. doi:10.1159/000081983
- Reck, C., Zietlow, A.-L., Müller, M., & Dubber, S. (2016). Perceived parenting stress in the course of postpartum depression: the buffering effect of maternal bonding. *Archives of Women's Mental Health, 19*, 473-482. doi:10.1007/s00737-015-0590-4
- Reece, S. (1992). The parent expectation survey. *Clinical Nursing Research, 1*, 336-346.
- Rholes, W. S., Simpson, J. A., & Friedman, M. (2006). Avoidant attachment and the experience of parenting. *Personality and Social Psychology Bulletin, 32*, 275-285.
- Roessger, K. M. (2017). From Theory to Practice: A Quantitative Content Analysis of Adult Education's Language on Meaning Making. *Adult Education Quarterly, 67*(3), 209-227. doi:10.1177/0741713617700986
- Saeri, A. K., Cruwys, T., Barlow, F. K., Stronge, S., & Sibley, C. G. (2018). Social connectedness improves public mental health: Investigating bidirectional relationships in the New Zealand attitudes and values survey. *Australian & New Zealand Journal of Psychiatry, 52*(4), 365-374.
- Sankaran, S., Dick, B., Passfield, R., & Swepson, P. (2001). *Action learning and action research*. Lismore, NSW: Southern Cross University Press.
- Schore, A. (2001). Effects of secure attachment relationship on right brain development, affect regulation and infant mental health. *Infant Mental Health Journal, 22*(1-2), 7-66.
- Sidor, A., Kunz, E., Schweyer, D., Eickhorst, A., & Cierpka, M. (2011). Links between maternal postpartum depressive symptoms, maternal distress, infant gender and sensitivity in a high-risk population. *Child and Adolescent Psychiatry and Mental Health, 5*(1), 7. doi:10.1186/1753-2000-5-7
- Sit, D., Rothschild, A. J., & Wisner, K. L. (2006). A review of postpartum psychosis. *Journal of Women's Health, 15*, 352-368.
- Slade, A. (2005). Parental reflective functioning: An introduction. *Attachment and Human Development, 7*(3), 269-281.
- Spitzer, R. L., Kroenke, K., & Williams, J. B. W. (1999). Patient Health Questionnaire Study Group. Validity and utility of a self-report version of PRIME-MD: the PHQ Primary Care Study. *JAMA, 282*, 1737-1744.
- Spitzer, R. L., Williams, J. B. W., Kroenke, K., Hornyak, R., & McMurray, J. (2000). Validity and utility of the PRIME-MD patient health questionnaire in assessment of 3000 obstetric-gynecologic patients: the PRIME-MD Patient Health Questionnaire Obstetrics-Gynecology Study. *American Journal of Obstetrics & Gynecology, 183*, 759-769.
- Srivastava, A., & Thomson, S. B. (2009). Framework Analysis: A Qualitative Methodology for Applied Policy Research. *Journal of Administration & Governance, 4*(2), 72-79.
- Sroufe, L. A. (1997). *Emotional development: The organization of emotional life in the early years*. New York, NY: Cambridge University Press.



## 13.0 References

- Steffen, A., Nübel, J., Jacobi, F., Bätzing, J., & Holstiege, J. (2020). Mental and somatic comorbidity of depression: a comprehensive cross-sectional analysis of 202 diagnosis groups using German nationwide ambulatory claims data. *BMC Psychiatry*, *20*(1), 142. doi:10.1186/s12888-020-02546-8
- Stein, A., Malmberg, L. E., Sylva, K., Barnes, J., Leach, P., & the FCCC team\*\*. (2008). The influence of maternal depression, caregiving, and socioeconomic status in the post-natal year on children's language development. *Child Care Health Development*, *34*, 603-612.
- Stein, A., Pearson, R. M., Goodman, S. H., Rapa, E., Rahman, A., McCallum, M., . . . Pariante, C. M. (2014). Effects of perinatal mental disorders on the fetus and child. *The Lancet*, *384*(9956), 1800-1819. doi:10.1016/S0140-6736(14)61277-0
- Stephens, S., Ford, E., Paudyal, P., & Smith, H. (2016). Effectiveness of Psychological Interventions for Postnatal Depression in Primary Care: A Meta-Analysis. *The Annals of Family Medicine*, *14*(5), 463-472. doi:10.1370/afm.1967
- Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., . . . Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior*, *14*, 13-29. doi:10.1016/j.avb.2006.03.006
- Stright, A. D., Gallagher, K. C., & Kelley, K. (2008). Infant temperament moderates relations between maternal parenting in early childhood and children's adjustment in first grade. *Child Development*, *79*(1), 186-200.
- Sumner, G., & Spitz, A. (1994). *NCAST caregiver/parent-child interaction teaching manual*. Seattle, WA: NCAST Publications, University of Washington School of Nursing.
- Teo, A. R., Lerrigo, R., & Rogers, M. A. (2013 May). The role of social isolation in social anxiety disorder: a systematic review and meta-analysis. *Journal of Anxiety Disorders*, *27*(4), 353-364. doi:10.1016/j.janxdis.2013.03.010.
- Teti, D., & Gelfand, D. (1991). Behavioural competence among mothers of infants in the first year: the mediational role of self-efficacy. *Child Development*, *65*, 918-929.
- Tharner, A., Luijk, M. P. C. M., IJzendoorn, M. H. v., Bakermans-Kranenburg, M. J., Jaddoe, V. W. V., Hofman, A., . . . Tiemeier, H. (2012). Infant Attachment, Parenting Stress, and Child Emotional and Behavioral Problems at Age 3 Years. *Parenting*, *12*(4), 261-281. doi:10.1080/15295192.2012.709150
- The Getting it Right Collaborative Group. (2019). Getting it Right: validating a culturally specific screening tool for depression (aPHQ-9) in Aboriginal and Torres Strait Islander Australians. *Medical Journal of Australia*, *211*(1), 24-30. doi:10.5694/mja2.50212
- Thomason, E., Volling, B. L., Flynn, H. A., McDonough, S. C., Marcus, S. M., Lopez, J. F., & Vazquez, D. M. (2014). Parenting stress and depressive symptoms in postpartum mothers: Bidirectional or unidirectional effects? *Infant Behavior and Development*, *37*(3), 406-415. doi:<https://doi.org/10.1016/j.infbeh.2014.05.009>
- Tronick, E., & Reck, C. (2009). Infants of depressed mothers. *Harvard Review of Psychiatry*, *17*, 147-156. doi:10.1080/10673220902899714
- Usui, Y., Haruna, M., & Shimpuku, Y. (2019). Validity and reliability of the Karitane Parenting Confidence Scale among Japanese mothers. *Nursing & Health Sciences*, 1-7. doi:10.1111/nhs.12633
- Van Puyvelde, M., Rodrigues, H., Loots, G., De Coster, L., Duville, K., Matthijs, L., . . . Pattyn, N. (2014). Shall we dance? Music as a port of entrance to maternal-infant intersubjectivity in a context of postnatal depression. *Infant Mental Health Journal*, *35*(3), 220-232.
- Wadsworth, Y. (1998). What is Participatory Action Research? *Action Research International*, (Paper 2). Retrieved from <http://scu.edu.au/schools/gcm/ar/ari/p-ywadsworth98.html>
- Wang, Z., Liu, J., Shuai, H., Cai, Z., Fu, X., Liu, Y., . . . Yang, B. X. (2021). Mapping global prevalence of depression among postpartum women. *Translational Psychiatry*, *11*(1), 543. doi:10.1038/s41398-021-01663-6
- Williams, S. Z., Chung, G. S., & Muennig, P. A. (2017). Undiagnosed depression: A community diagnosis. *SSM - Population Health*, *3*, 633-638. doi:<https://doi.org/10.1016/j.ssmph.2017.07.012>
- Woolhouse, H., Gartland, D., Mensah, F., & Brown, S. J. (2015). Maternal Depression from Early Pregnancy to 4 years Postpartum in a Prospective Pregnancy Cohort Study: Implications for Primary Health Care. *BJOG: An International Journal of Obstetrics & Gynaecology*, *122*.3, 312-321.
- Wright, D. B., London, K., & Field, A. P. (2011). Using bootstrap estimation and the plug-in principle for clinical psychology data. *Journal of Experimental Psychopathology*, *2*(2), 252-270.



## 13.0 References

- Zanarini, M. C., Vujanovic, A. A., Parachini, E. A., Boulanger, J. L., Frankenburg, F. R., & Hennen, J. (2003). A screening measure for BPD: The Mclean Screening Instrument for Borderline Personality Disorder (MSI-BPD). *Journal of Personality Disorders, 17*, 568–573.
- Zaslow, M., Bronte-Tinkew, J., Capps, R., Horowitz, A., Moore, K. A., & Weinstein, D. (2009). Food security during infancy: Implications for attachment and mental proficiency in toddlerhood. *Maternal & Child Health Care Journal, 13*(1), 66-80.
- Zeanah, C. H. (2009). *Handbook of infant mental health* (Third ed.). New York, NY: Guildford Press.
- Zietlow, A.-L., Schlüter, M. K., Nonnenmacher, N., Müller, M., & Reck, C. (2014). Maternal Self-confidence Postpartum and at Pre-school Age: The Role of Depression, Anxiety Disorders, Maternal Attachment Insecurity. *Maternal and Child Health Journal, 18*(8), 1873-1880. doi:10.1007/s10995-014-1431-1

