“Does Training Enhance Professional Practice in Infant Mental Health?”

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Abstract

The lack of robust evaluation of training outcomes has been noted within the delivery of Health & Social Care across the UK. The impact on adult mental health of poor emotional care during infancy and early childhood has also been highlighted by the relatively recent advancements in neuroscience. This study used pre- and post-testing to assess practice across three key domains. The gains observed in staff knowledge and confidence post-training are directly attributable to the training: p < .001 (Knowledge Scores) and p = .001 (Self-Efficacy Scores). Key findings also indicate that Infant Mental Health (IMH) training has potential to encourage staff in Adult Services to take more ownership of a family focused agenda and that current service provision struggles to meet the needs of high-risk infants. With a clear focus on robust methodology, this study measures IMH training outcomes on a multi-professional basis across Adult Mental Health and Children’s Services within one Health & Social Care Trust (NI). The findings also add to our understanding of the interface between social work and other services who seek to support families with complex needs.

Keywords: infant mental health; adult mental health; children’s services; training outcomes
Impact of IMH Training on Professional Practice

Introduction

There is now a well-established evidence base that the quality of the emotional care provided during early childhood not only influences the brain growth of infants but has significant implications for mental health in later life. Whilst there is the possibility of repair of damage caused to the infant brain, it is recognised that this requires considerable skill, time and effort as well as incurring a high level of expenditure. Consequently, considerable emphasis is now placed on promoting positive infant mental health in order to achieve better outcomes for the mental health, functioning and emotional well being of adults.

Given the current climate of limited resources and the drive for evidence-based practice, “Does it work?” is an obvious question that needs to be asked in respect of any training delivered within Health & Social Care. The objectives of this study were to measure the effectiveness of Infant Mental Health training across the domains of Knowledge, Risk-Identification and Self-efficacy and to inform the delivery of future training across the Trust.

The evaluation focused on the delivery of 3 levels of training: - a) Beginner, b) Intermediate & c) Advanced. Beginner level was delivered for 2 hours within “Think Family” a pilot project that aims to promote the development of family focused practice in the context of adult mental health. Intermediate involved the delivery of 2-day Solihull training to Children’s Services staff. Solihull is IMH training that focuses on the importance of emotional
containment for infants, a reciprocal relationship between child and caregiver and behaviour management to achieve security of attachment and healthy brain growth for infants. Advanced level training from the Anna Freud Centre was cascaded over 3 days to staff undertaking specialist assessments in the area of IMH. This was targeted primarily at the family centres within the Trust and senior staff from the “Home on Time” project which is an intensive parental assessment process involving high risk infants and based on concurrent planning.

Literature Review

Evaluation of Training Outcomes

Theoretical models for the evaluation of training have emanated from a 4 level model created by Donald Kirkpatrick in 1967, which he updated in 1975 and again in 1994 (Kirkpatrick, 2006). Whilst the first level of this model i.e. “Learner’s Reaction” has been deemed in itself an “insufficient” evaluation method of training, the combination of the various levels of this model has continued relevance (Carpenter, 2005, p 7). Kirkpatrick’s concepts of the “Acquisition of Knowledge and Skills”, “Changes in Behaviour” and “Results” all remain relevant measures of teaching outcomes.

Lack of Research on the Impact of Training

Systematic reviews have highlighted the lack of evaluative research on the impact of social work education across mental health trusts and social services departments. Significant methodological flaws have also been found
in many of the studies available (Carpenter, 2005 & 2011). The “contemporary demand for the evaluation has not filtered through” to the area of child protection work even though professional and academic literature highlights training and education as “the key to addressing social work’s ills” (Ogilvie-Whyte, 2006, p.3 & 4).

_Evaluation of Infant Mental Health / Solihull Training_

Within the UK outcomes of Infant Mental Health training are again limited and based solely on the Solihull Approach although there is evidence of some studies moving beyond self-report as a measurement tool. The impact of Solihull training has primarily only been considered from the perspective of health visiting. In 2013, it was investigated for the first time across other health disciplines (Moore et al., 2013) and the study was based on self-assessment and a ‘post only’ design.

_The Emergence of Self-efficacy as an Outcome Measure_

The reliance on self-report has been closely scrutinised and seriously undermined within higher education for some time. Empirical evidence began to point to self-efficacy as a more reliable predictor of academic attainment when higher levels of confidence in one’s ability to perform were found to have a positive influence on academic performance, persistence outcomes & empowerment (Holden et al., 1999). This study points to the
limitations of a single group, pre and post-test design, as it could not draw any real inferences about the cause of observable changes and advocates that multiple replications would have been needed.

**Key Infant Mental Health Concepts**

“The early beginnings of human life indelibly impact all later stages” (Schore, 2013 p.429). Relatively recent advances in neuroscience and developmental psychology have now validated the significance of attachment theory. It is now accepted that the growth of the human brain occurs most extensively and rapidly during infancy as opposed to any other life stage and is indelibly shaped by parental sensitivity to the emotional needs of the child (Schore, 2013).

Security of attachment influences a child’s capacity for joy and other positive arousal states such as excitement or pleasure as well as promoting emotional regulation in later life (Schore, 2005). Conversely, the brains of children that experience a lack of emotional responsiveness or safety during this critical stage of development (0 – 3 years) will be hard-wired differently, resulting in life-long adverse consequences (Schore, 2013). Antenatal and postpartum depression is associated with delays in offspring neurodevelopment as early as 18 months of age after adjusting for a large number of variables (Koutra *et al.*, 2014).
The impact of emotional neglect / abuse during the first 3 years of life is more damaging than if this were to occur at any other stage of the life span. When an infant is threatened in a prolonged or repetitive fashion this repeatedly activates the stress response, which in turn leads to a permanent alteration of the neural structure of the brain (Perry, 2009).

Policy Context in Northern Ireland

The Policy context in Northern Ireland is guided by the Department of Health and is based on the recent Infant Mental Health Framework for Northern Ireland (Public Health Agency, 2016). The plan prioritises the dissemination of evidence and research, staff training and service development to include targeted support for high-risk infants. Each of the 5 Health Trusts in Northern Ireland are currently tasked with developing an action plan in line with each of these priorities. Historically, relevant policy documents have included: - “Healthy Child, Healthy Future” (OFMDFM, 2010), the “Northern Ireland Suicide Prevention Strategy” (DHSSPS, 2012) & "Making Life Better: A Whole System Strategic Framework for Public Health” (DHSSPS, 2014).

Practice Issues re: Vulnerable Infants

a) Children’s Services

Lengthy delays in safeguarding and achieving permanence for young children points to an arduous decision-making process that pays insufficient attention to the potential impact of abuse and neglect on children’s long-term life
chances. (Brown and Ward, 2014). The optimal amount of parental contact following maltreatment or neglect of young children should largely depend on the costs involved for the child. Relevant factors include the separation from the new caregiver; lack of attachment figure during transport; the disruption of sleep, play and other daily routines and mis-attuned or distressing interactions with the parents. The role of infant mental health practitioners is critical in “articulating the infant’s perspective” (Miron et al., 2013).

b) Adult Mental Health

The limited focus on research informed practice with regard to the application of recovery approaches suggest the need for a more evidenced based approach to training, education and practice. More concerted discussion is needed about how the principles of recovery can be translated into the realities of everyday policy and practice (O'Hare et al., 2013).

Family focused practice is an integral part of client recovery as it bolsters important family relationships and enhances the strengths a parent with a mental illness (Goodyear et al., 2015). Family inclusive practice is also an early intervention strategy given its potential to prevent the transmission of mental health disorders in families (Maybery et al., 2015). Mental illness is generally associated with parents being less emotionally available to their children and the subsequent disruption to the attachment relationship (Goodyear et al., 2015).
Methodology

*Design:* The study was informed by a detailed literature review using a number of archives: Assia, Cochrane, Google Scholar, Honni, Med-line, Psych Info, & SCIE. Key word search terms included Impact of Neglect or Abuse AND Brain Development AND Infant* or Bab* or Child*. Other terms were also used such as “Research” AND “Infant Mental Health Training” & “Emotional Security” AND “Emotional Regulation”. Searches were further refined by limits such as Peer Reviewed, English Language & Year. Other searches included ‘snowballing’, citation tracking, websites and email contact with authors.

Repeated messages from the literature advised on the need for more robust methods to be employed when attempting to evaluate the impact of educational training. Consequently a mixed methods approach was adopted based on pre & post-testing of multiple groups and involved the collection of empirical evidence across 3 key domains i.e. Knowledge, Risk-Identification and Self-efficacy. In addition because one type of evidence may not tell the entire story (Creswell, 2003 p.33) a qualitative aspect through the use focus groups, was also incorporated.

Quantitative data was gathered from a census population of staff (85) from children and adult services that attended Infant Mental Health Training (Think Family, Solihull & Anna Freud) between March 2015 and June 2015. Two focus groups were formed by purposive sampling whereby participants were
selected based on their expressed interest in attending. Participants involved in the pre and post-tests provided their information anonymously. Six groups were identified incorporating a range of professionals including social work, health visiting and psychiatric nurses who received 1 of the 3 levels of IMH training. In response to an informed request for participation in a follow up focus group discussion 17 people responded generating 2 groups with 9 and 8 participants respectively.

In acknowledging the advantages of validated tools for comparative purposes (Engel & Schutt, 2013) the feasibility of using such tools particularly around self-efficacy (Fischer & Corcoran, 2007) was explored. These scales were however considered too generalized for the purposes of this evaluation. Consequently, a measurement tool was designed that would gather data on key IMH concepts across the domains of Knowledge, Risk Identification & Self-efficacy. Such an approach has the benefit of being customized to the exact domains of the study, and culturally specific.

_Pilot:_ A pilot exercise helped determine that the design would produce analyzable data that was fit for purpose (Bazeley, 2013). It provided reassurance on test and re-test reliability particularly in relation to the domains of knowledge and risk which proved highly reliable. There was greater variation with regard to the self-efficacy component of the questionnaire, which is consistent with the literature that suggests that some constructs such as mood states will not remain stable (Pallant, 2010). In addition to changes
in wording and format of the tool, the pilot exercise facilitated a few practical refinements to the process that helped guarantee effective and consistent data collection.

An initial scoping exercise was undertaken to identity key themes and areas emerging from the quantitative data. This in turn helped generate the questions for the focus groups alongside key issues such as participants’ perception of what enables or prevents the application of learning to practice.

_Data analysis:_ The Statistical Package for Social Sciences was used for the analysis of the data. Total scores were calculated for each of the three domains achieved by attributing 1 point for each correct response and zero points to all other responses including any missing or invalid data.

Variables were created for Total Pre Knowledge score, Total Post Knowledge scores and the differences in knowledge scores. Total mean scores were calculated for the 5 training groups within each of these variables. (The Anna Freud group could not be included in this knowledge domain, as the same questions could not be given to this training type due to the advanced level of the training). The same procedure was then carried out for Risk Identification and Self-efficacy so that each of these variables had total mean scores for all 6 training groups. This enabled parametric tests to be run using the correct degrees of freedom (Dancey & Reidy, 2011).
The data was analyzed using descriptive statistics, frequencies and cross-tabulations. The total Pre Knowledge & Post Knowledge scores were analyzed in paired t-tests with the group means for the Pre Knowledge and Post Knowledge tests being the pair.

The Pre and Post Knowledge scores were analysed with one-way anova firstly across the 2 training types (Think Family & Solihull) and repeated for the other 2 domains across the 3 training types (Think Family, Solihull & Anna Freud). The effect size for each was calculated by obtaining the value for partial eta squared (Dancey & Reidy 2011).

Thematic Analysis of the outcomes from the focus groups was undertaken and completed manually through reading and re reading the transcripts and discussion. The key themes identified were peer reviewed in order to check for consistency and reduce the possibility of researcher bias.

_Ethics:_ Ethical Approval was secured from the sponsor in January 2015 based on the classification of a project as a service evaluation. The key ethical issues addressed involved informed consent, invasion of privacy and deception.

Results
In total 68 participants completed both pre and post questionnaires (n=68) across the 3 training types i.e. Think Family (n=36), Solihull (n=23) and Anna
There were 6 replicate groups within the study: 3 groups from Think Family, 2 Solihull groups and 1 Anna Freud group. The 2 focus groups had 8 & 7 participants respectively (n=15).

**Impact of Training on Knowledge**

<table>
<thead>
<tr>
<th>Training Groups</th>
<th>Group Mean Scores for Knowledge before training</th>
<th>Group Mean Scores for Knowledge after training</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (TF1)</td>
<td>2.00 (33%)</td>
<td>4.14 (69%)</td>
<td>+2.14 (↑36%)</td>
</tr>
<tr>
<td>2 (TF2)</td>
<td>2.15 (36%)</td>
<td>4.38 (73%)</td>
<td>+2.23 (↑37%)</td>
</tr>
<tr>
<td>3 (TF3)</td>
<td>2.89 (48%)</td>
<td>5.56 (93%)</td>
<td>+2.67 (↑45%)</td>
</tr>
<tr>
<td>4 (S1)</td>
<td>2.75 (46%)</td>
<td>4.92 (82%)</td>
<td>+2.17 (↑36%)</td>
</tr>
<tr>
<td>5 (S2)</td>
<td>2.73 (46%)</td>
<td>4.82 (80%)</td>
<td>+2.09 (↑34%)</td>
</tr>
</tbody>
</table>

This improvement in knowledge after training is statistically significant \( t (4) = 21.68 \) with a \( p \) value of \( < .001, r = .97 \); the effect size is large and so represents a substantive finding. The Null Hypothesis that the true mean of the post knowledge test is the same as the true mean of the pre knowledge test (or equal to zero) can therefore be rejected.

This analysis is based on group means and therefore the assumption of independence is valid given that degrees of freedom (4) are correct i.e. 5
independent measures – 1 = 4. In these circumstances the significance of the paired sample ‘t’ test can be trusted.

A group from the beginner level training delivered over 2 hours had the highest post knowledge score i.e. 93% (See Table 1). However, the analysis of variance between the 2 training types shows that any observed differences are not statistically significant F (1,3) = 1.07, p = .378, partial eta squared = .26. Consequently, the null hypothesis that there is no difference in the true means of the 2 training types cannot be rejected.

Evidence from the focus groups indicates that whilst many people within wider society can have an intuitive awareness about Infant Mental Health and some capacity to identify risk, it is only with the knowledge gained from the training that timely and effective interventions can take effect.

“As an undergrad I know about the development of the brain but it was only when they honed in on the whole understanding around the impact on the child from mum’s mental health, how she has been through the pregnancy…all of that was like someone just switched the light bulb on…”
(Participant – Focus Group1)

**Impact of Training on Self-Efficacy**

The improvement in self-efficacy after training is statistically significant t (5) = 6.68 with a p value = .001, r = .94; the effect is large. This improvement is
therefore a direct result of the training and is not due to sampling error. Evidence from the focus groups indicates that increased confidence represents a considerable benefit of IMH training and enables staff to respond to their clients in a more positive way: -

“Having that training gave me the increased confidence to have the conversations with people about being a parent and the children in their lives. It’s not like I wasn’t doing that… Just the importance I put on it and the time I spend on it…”

(Community Mental Health Nurse – Focus Group 1)

“By attending IMH training I think Social Workers bring it to the fore more in their assessments…. That’s what I probably see more in social workers coming through; they are more confident in presenting that information and acknowledging to parents that these are the things you have to look at…”

(Assistant Principal Social Worker– Focus Group 1)

Impact of Training on Risk Identification

Although differences in staff capacity to identify risk after training were not statistically significant when the domain was examined according to Service Directorate there were some interesting findings. There was a significant difference between the baseline scores of staff in Adult Services (68%) and Children’s Services (88%). However, after training these differences reduced with a significant rise in the post-test scores for Risk Identification of Adult
Services staff (80%) and only a marginal increase for Children's Services staff (91%).

Relevance of infant mental health training

Key findings suggest that IMH training has significance across professions and disciplines: -

1) Develops greater insight & understanding of the client

It was found that IMH training provides staff with greater insight into the reactions and behaviours of their clients. It was reported that IMH training enables professionals to recognise the “stressed infant” within adult clients as well as children. It was also acknowledged that IMH training supports staff to be able to go beyond a focus of targets and tick boxes within their practice and develop a better understanding of the real person in front of them.

“I found the session on IMH really, really mind-blowing. It really was. It touched on attachment theory and I found it insightful for me to know those things and the impact it’s having on the people I’m working with because they were once infants in those situations....”

(Community Mental Health Nurse – Focus Group 1)

“I think that sometimes we get very driven by targets, this is what the service is about, tick that box and on you go...That has been the biggest change for me with Solihull – where is the wee one in the middle of all of this rather than I need this assessment done...end of".
(Speech & Language Therapist – Focus Group1)

2) Inter-generational Cycle of Mental Health Issues

Another key theme raised was the inter-generational transmission of mental health & / or parenting difficulties, often reflective of inter-generational trauma: -

“All that training has huge relevance… A lot of people we work with are parents themselves and that raises the risk inter-generationally…”

(Community Addictions Social Worker – Focus Group 1)

3) Relevance to various professions & disciplines

Staff considered that IMH training has relevance to all those in contact with children and referenced specific professions that required more IMH input i.e. teachers, social work, and the judiciary. Whilst it was acknowledged that Health Visiting has led on many aspects of Infant Mental Health within the Trust, the concepts were deemed equally important within social work.

It was recognised that there needs to be a high level of knowledge about IMH amongst social workers within Children’s Services in order for them to make well-informed and coherent arguments about these issues within a court process. The importance of timely decision-making for infants and IMH
training for all legal professionals working in the area of family law including the judiciary was also emphasised.

“IMH training is important for the legal system… General agreement within the group… Judges, barristers, solicitors …the whole legal system…”

(Senior Social Worker - Focus Group 2)

*Infant Mental Health and Child Protection*

The group in receipt of advanced level training (Anna Freud) were the most confident group before training with a confidence level of 61%. However, although this group had some gain in confidence after the training (8%), this represents only a marginal increase and falls far short of the improvements in confidence achieved by the other 5 groups within the study (range = 21% - 31%).

Some explanations offered by the findings include the dramatic increase in the level of training provided. Whilst the training gives staff greater insight into the workings of the inner emotional world of traumatised clients i.e. both adult and child, it also reinforces for staff what they don’t already know. The findings also highlight the lack of essential structures in place to support child protection work in this area of IMH. The importance of IMH training for the judiciary and managers within Children’s Services, the need for a specialist IMH team and clinical supervision for staff were all highlighted.
“It ties in with how empowered any of us feel within the system we work in…and the courts not understanding this (IMH) and our own senior managers not understanding…“

(Participant – Focus Group 2)

“We know how difficult it is to go into court and give evidence if it’s about the child’s emotional life and emotional abuse; it is really hard to get your evidence across there. It’s like you are talking a different language”.

(Participant – Focus Group 2)

“I suppose it is counter transference – if someone is putting their stuff into us and as workers that’s toxic – where does that go – does it either block us as practitioners or do we maybe (not meaning to) fire some of it back...”

(Participant – Focus Group 2)

Within the study staff had been specifically asked how confident they felt about being able to enhance the mental health of the families they work with. Although not statistically significant, the evidence indicates that professionals (n = 68) continued to feel more confident about their ability to enhance the mental health of adults and older children (75% confidence levels) as opposed to the stressed infants (70% confidence levels) after the delivery of IMH training.
Exploration of this issue evoked a strong emotional response within the focus groups. The evidence suggests that consideration of ‘the stressed infant that cannot be comforted’ is a painful proposition that can cause some professionals to turn away. Clear themes emerged of overwhelming fear, powerlessness and helplessness felt within the professional system.

“The mental health needs of a stressed infant… to me that just depicts horror and a screaming baby.”

( Participant – Focus Group 1)

“So that is talking about complexity…it is not just teaching…it is helping a mum or dad work through their own trauma and that is not an easy task…”

( Participant – Focus Group 1)

“That made me want to jump back into my box and say, “I work with adults”.

( Participant – Focus Group 1)

Discussion

This small-scale study would have been strengthened by further replicates and a few minor amendments to the data collection tool e.g. increasing the level of difficulty of some questions in the risk domain. In the absence of follow-up testing, the positive impacts found may only apply in the short-term and a longitudinal evaluation would have been helpful.
The study validates the effectiveness of IMH training for social workers and other professionals as it clearly evidences that the gains observed in self-efficacy and staff knowledge following training are directly attributable to the training. Improvements were seen across various disciplines including Children’s Safeguarding, Community Addictions and Adult Mental Health (both community and inpatient). The findings also confirm that the confidence gained from increased knowledge encourages staff to put their learning into practice. Higher levels of confidence in one’s ability to perform correlates with increased persistence levels and people’s sense of empowerment (Holden et al., 1999).

The study builds upon the existing knowledge base about the relevance of IMH training beyond the fields of Health Visiting and Family Support Work (Moore et al., 2013). It is crucial that professionals become skilled and competent to articulate the infant’s perspective given the life-long adverse consequences for the child of emotional neglect or abuse (Miron et al, 2013).

Participants in the focus groups highlighted the importance of the judiciary being trained in IMH and the need for timely decision-making for vulnerable infants, which is consistent with previous study findings (Brown & Ward, 2014). Although IMH training is generally regarded as a preventative, therapeutic approach for families, the study clearly identifies IMH as a key child protection concern and therefore adds to the currently limited evidence base for child protection training (Ogilvie-Whyte 2006).
The study offered some unexpected insights into the potential benefits of IMH training for Adult Mental Health staff. Participants described how training provided them with greater insight into the presentation of their adult clients and helped them see the benefits of engaging clients in discussion about parenting.

It may be that as social workers and nurses become more conscious of the enduring legacy of adverse experiences in early childhood, they will take greater ownership of the family focused agenda and have greater motivation to expand their focus of interest beyond that of the adult client. This is considered crucial not only with regard to client recovery but also from the perspective of potentially preventing the inter-generational transmission of mental health disorders (Maybery et al., 2015). Another significant benefit was the increased capacity of Adult Services Staff to identify risk as a result of training. Although these staff had more to learn than their colleagues in Children’s Services, they clearly made good use of the training opportunity and are now better equipped to recognise vulnerability in infants if engaging in family focused practice.

The third priority of the Infant Mental Health Framework for Northern Ireland (Public Health Agency, 2016) is Service Development and the provision of targeted support for the most vulnerable infants. This is validated by the finding from this study that training of itself, is not sufficient to meet the needs
of high-risk infants and that other structural supports are necessary. This will present significant challenges for Health Trusts in Northern Ireland given current pressures of budget restraints and creative solutions may need to be found. However, it is clear from the evidence of neuroscience (Schore, 2013 and Perry, 2009) that any investment made in supporting high-risk infants will yield the highest return as compared to intervention at any other point within the lifespan.

Conclusion:
Relatively recent developments in neuroscience have resulted in a rapidly growing evidence base about the lifelong implications of the quality of emotional care provided during infancy for brain growth and key aspects of adult functioning. Such evidence has informed the current policy context within Northern Ireland and the establishment in 2016 of an Infant Mental Health Framework (NI). The policy impacts on social workers in adult and children’s services as it seeks to raise awareness of key issues and promote interdisciplinary and cross program working. With a robust methodology, this study aimed to measure the effectiveness of IMH training: one of the key priorities of the newly established IMH Framework (NI). The findings provide a valuable insight into the impact of a range of training but also the interface between social work and other elements of the health and social care services.
The study has confirmed the efficacy of IMH training for 2 of the 3 domains measured i.e. Knowledge and Self-confidence, across various disciplines including Children’s Safeguarding, Community Addictions and Adult Mental Health. Training of itself, has not been found sufficient to address the needs of high-risk infants and more structural supports are needed including training for the judiciary and managers within Children’s Services, the development of a specialist IMH team and clinical supervision for staff.

Findings have highlighted benefits of IMH training for Adult Services social workers and nurses including a better understanding of their adult clients and more appreciation of the need for family focused practice. The study has also found an improvement in the capacity of Adult Services Staff to identify vulnerability in infants if engaging in family inclusive practice.

REFERENCES


