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Child-Centric Intervention Research: The Devil is in the Detail

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Abstract
This paper discusses conceptual, ethical, pragmatic and paradigmatic constraints encountered in a T2 ‘bench to bedside’ translational research endeavour piloting an early intervention program for young children who have experienced sexual abuse. The resultant child-centric intervention research framework emerged from the challenges associated with trauma-related clinical work, the absence of an evidence-base and the difficulties of adopting traditional positivistic methodologies when evaluating practice in this complex field. Critically, the resultant framework was person-centred and, hence, individually responsive. More specifically, it was child-centred and so developmental and systemic issues were privileged.

Keywords
Child-centred research, mixed method program evaluation, person-centred evidence-based practice, person-centered healthcare

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Introduction
Faced with developing and evaluating early intervention programs for a young and subclinical population of children (4-10 years) who had experienced sexual abuse (CSA), we, like others in this research field, encountered many challenges. Children did not fit neat diagnostic categories and their symptoms were diverse. Indeed, previous research has noted such diverse subclinical features are present in 40\% of sexually abused children \cite{1}. This posed irreconcilable challenges for the application of traditional positivistic RCT methodologies that are focused on minimizing variance amongst participants. Yet, trauma poses inherent threats to brain development, cognitive and emotional development \cite{1-4} and that there are attendant risks of latent onset of post-trauma symptoms \cite{5}, which suggests early intervention is warranted before symptomatology becomes more severe and more differentiated \cite{4}. The limited evidence-base guiding targeted intervention is testimony to the challenges of working with this heterogeneous group of children and their families, as well as the challenges of applying traditional research epistemologies more broadly \cite{6,7}.

The first program evaluated was a locally available Protective Behaviours (PB) program, for young children (4-7 years) who had either experienced sexual abuse or who were considered ‘at risk’. Latter studies focussed on evaluation of our newly developed Little Steps program, a more targeted intervention informed by our investigation of the PB program. We sought a framework to systematically guide our research practice that was developmentally responsive to participants’ clinical needs. Reid’s person-centric framework prioritises practitioner values and is comprised of 6 key principles to keep the person and in our case the child and family, at the centre of methodological decision-making \cite{8}. This framework suggests that fulfilling the dual demands of practice and research requires: (i) infusion of the axiomatic practice elements of ethics and accountability into the research process; (ii) setting research practice within a relational frame rather than methodologically diminishing consideration of human factors; (iii) prioritising a commitment to capturing the complexity of real-world change processes; (iv) encouraging idiothetic levels of analysis so as to understand both individual and group needs and effects; (v) prioritizing reflective practice and (vi) understanding that contextually valid human research is an emergent, often messy, unfolding process. These principles, described in more detail elsewhere \cite{8}, guided the conceptual and methodological operationalization of person-centered principles in the context of intervention in childhood.
Clinical translational research with children: unique challenges and opportunities

In conceptualizing methodological needs for the treatment evaluation and in accordance with person-centered practice, we began by considering the specific needs of our child clients to inform what questions needed to be asked and how we might best ask those questions.

In working with young children who had experienced sexual abuse, the first and most salient observation was the pervasive impact of this life context on their engagement in both the intervention and the process of monitoring progress toward intervention goals. Indeed, these children brightly illuminated both the importance and the difficulty of achieving external validity in translational research. Even at the simplest level, engaging a young child in conversations about experiences which may be clouded by guilt, shame, confusion and fear, highlighted the imperative to create what practitioners might call a therapeutic space or a trusting relational environment in order to collect valid and relevant data. Mindful that these children have often had several abuse-specific conversations as they navigate the medical and legal response systems, further highlighted the sensitivity needed for data collection.

Secondly, our experiences illustrated that developmental and maturational differences impact substantially on the child’s experience of a program and their engagement in an evaluation process. Further, in the few instances where this has been addressed in the literature, development is routinely indexed in research by chronological age rather than by social, emotional and psychological maturation, yet we know this maturation can be impacted significantly by trauma [9]. Further, while adult participants can be explicitly engaged in an evaluative process, limitations in insight and reflective capacity constrain the data collection options available for use with even typically developing children. These limitations in a child’s developmental competence to draw meaning from their experience are exaggerated further when discussing atypical sexualised experiences and additionally compounded by developmental constraints in more basic communication and language skills. These issues affect not only treatment outcomes, but the evaluation questions that may be asked [10]. The methodological literature is bereft of direction for developmentally responsive approaches to research.

Thirdly, we noticed that parent, child and practitioner perceived the markers of change and/or wellbeing quite differently. While practitioners can be over-focused on symptom change, parents may be focussed on behavioural change that impacts their parenting capacity (i.e., ‘is my child behaving well?’). But children, through play or story telling, can often elucidate conceptual changes in their understanding of their world - while these changes are more subtle, they are equally powerful mediators of the child’s future experience. To illustrate one such marker of change, an 8 year-old girl initially presented as unable to recall the names of her teacher or classmates (¾ of the way through her school year). She was not experiencing social isolation at school and was described by her mother as ‘popular’ among her peers. These memory difficulties fell in the context of intra-familial sexual abuse as well as a family history of ADHD and learning difficulties. While a learning disorder was among the many differential formulations, we suspected that her day-to-day difficulty of recalling names of familiar people was underpinned by emotion regulation difficulties related to sexual abuse. Certainly, improving recall of the names of her teacher and classmates was not targeted by the Little Steps program, nor with her individual therapist, her mother or the school.

Yet, mid-way through the program, during an activity aimed at identifying safe and available adults, this girl spontaneously recited the names of her teacher and students in her class. Such markers of conceptual change are particularly important with subclinical populations where clinical symptomatology is minimal or absent. This is not to say that the child’s view is the only important one. Instead, variations in a child’s and family’s experience of their world, relationships, perceptions of safety and threat (including inter-generational transmission of experience) may potentially accelerate or impede intervention gains and mean that interventions have both a positive and negative impact on the child’s life. Understanding each viewpoint is critical.

Finally, we found that each child’s engagement in both the intervention and evaluation process was inextricably tied to important, although not always obvious, ecological variables. The process of engaging children and families included pragmatic considerations, such as social and economic factors affecting attendance. It also extended to include the multiple and panoptical issues of adult surveillance in a child’s ecological environment [11]. Each of these factors contributed to diverse competencies and variable willingness of children to express their views to an adult at the point of data gathering. These critical systemic issues are particularly salient when working with families who have experienced child sexual abuse and in which the family equilibrium has been disrupted.

The complex web of influential factors in recovery from childhood sexual abuse is captured in Figure 1 and highlights the need for an evaluation methodology that can accommodate this complexity.

A child-centric intervention research framework: the unfolding story

Our early clinical experiences and each of the observations outlined above led us to understand that the meaning that each child makes of their experience of sexual abuse is unique and complex. The meaning made by families may be different again and equally complex. To date, the literature privileges the voice of the parent or therapist. What is clear is that hearing the child’s voice in research, while methodologically challenging, is critical to
understanding the issues and developing a responsive intervention plan [12]. To fully extract the richness of the child’s experience potentially locates them as central and active generators of data and, more broadly, as contributors to an evidence-base that can have a substantive impact on them and others who have shared similar experiences [11,13,14]. For intervention to succeed, both parent and child experiences must be acknowledged in a respectful way that is reflected in an accessible evaluation methodology. In turn, this methodology must be wrapped in a therapeutic context to ensure the psychological safety of participants.

Therapeutic awareness of, and empathy with, these children and their families needs to infuse and inform not just our intervention design but, crucially, the associated research design. Operationally, a child-centered approach required: (i) engaging multiple client perspectives through relational support of both parent and child; (ii) negotiating a child’s participation flexibly, sensitive to the myriad of challenges that may confront a child’s and parent’s (or caregiver’s) ongoing decision to participate; (iii) addressing power differentials, by being careful to conduct research in the child’s space and on their terms; (iv) understanding that paediatric populations are more heterogeneous than adults because differences in maturation have not yet stabilized and (v) understanding that developmental and relational disruptions are a potential consequence of trauma and that need to be addressed in selecting a research methodology [11,15-22]. These clinically informed decisions required a sympathetic research methodology, set within a relational context, where abuse-related issues of trust and power could be systematically resolved. The resultant macro-level taxonomy of a child-centred approach is depicted in Figure 2. Research options and relational and developmental considerations are then discussed at a micro-level implementation of this model.

**The Research Context**

The *person-centric* commitment to ethics and accountability in research demands a micro-analytic and iterative process of therapeutic review to ensure that the dual demands of client safety and externally valid evidence-generation are met. Nowhere is this more important that in child-centered research, given the additional vulnerabilities of child participants. Two methodological approaches, when synthesized addressed these criteria: ‘Developmental Intervention Research’ [23] and ‘Participatory Action Research’ [24-26].

**Developmental Intervention Research (DIR)**

DIR is a planned and systematic approach to “capturing innovation in direct practice and involves the design of a viable intervention prototype, a reiterative process of testing and refinement and finally an evaluation of its effectiveness” [27]. DIR emphasises the importance of accountability through considering and reporting on, all stages of intervention development and evaluation rather than just its final, perfected, stages. In so doing, it prioritises the *why* and *how* of therapy rather than the often brutal summation of symptom change that can mislead practitioners.
Participatory Action Research (PAR)

PAR, in illuminating the why and how of treatment success or failure within each stage of the DIR model, suggests cycling through a process of intervention (action), reflection, hypothesis generation, data collection/action and analysis/reflection again. The aim of PAR is to evaluate the overall effectiveness of a program and evaluate each component as it progresses through exchange between practitioners and clients. PAR responds to the challenge of achieving external validity in applied research by grounding the research process in the lives of its participants. It is often synonymous with participant observation methodology [28]. This approach also encourages scrutiny of unintentional observations as data, so missing data and null results are not limited to an ‘opt out’ clause describing participant non-completers, nor relegated to the bottom of the “file drawer”, as is common in RCT studies [29].

The Relational Context

Two other methodological choices were made in our research series to acknowledge and reflect the child’s immersion in familial, social and abuse-related contexts. The first choice was use of a researcher-practitioner as participant-observer and the second was triangulation of information collected from multiple informants.
Researcher-practitioner as a participant observer

Sensitivity to childhood and the context of vulnerabilities encountered by young children who have experienced abuse, required the research and intervention process both to be physically and emotionally safe. In our research, participants included children, their families, program facilitators and service providers. Expert practitioners offer the possibility of representing a holistic perspective of intervention outcome and implementation and recognising it as a complex system that is more than the sum of its parts. The engaged relationship that develops between the researcher-practitioner and participants enhanced the capacity to digest complexity in the data gathered and, in addition, influenced the: (i) pace and nature of activities or conversations undertaken; (ii) questions that could safely be asked of a child and (iii) responses offered to the child and parent. Set within this relational frame, complex and rich information embedded within the data gathered, could be sensitively exhumed for the purpose of empirical discussion.

The use of a researcher-practitioner allowed access to both etic (i.e., objective, culturally neutral observations of behaviour) and emic (i.e., the culturally specific meaning made by participants about their behaviours) variables. For example, parents in our research often reported that their child engaged in pre-sexual developmental behaviours. These reports were based upon parental observations, such as a child playing with their genitalia in the bath, which parents described as 'sexually inappropriate'. Such parental attributions may reflect the impact a child’s sexual abuse has had on the parent. Another interpretation, frequently overlooked by parents, is that such behaviours reflect developmentally typical curiosity about ‘body’. Hence, capturing etic and emic descriptions of behaviour permits focus on the interdependence and dynamics among variables. The conversations and interpersonal exchanges between a practitioner and their client in a therapeutic context were purposefully facilitated in this research to extract meaning and differ markedly from the conversations in a routine research interview. To illustrate, a typical research interview might enquire about the presence or absence of symptoms for the purpose of diagnostic categorisation into experimental groups. While a clinical interview asks about symptomatology, the impact of these symptoms is then explored, along with the developmental course of these symptoms and how they are impacted by past and present events.

Triangulation

To improve the quality of inferences or validity of conclusions drawn from a study, Patton [30] recommends using triangulation with an eye for convergence, relatedness and divergence of rich data sources. A child’s immersion in rich relational contexts encouraged our decision to capture change in parent and child, as well as across families in each therapeutic group. A delicate ‘weighing of the evidence’ [31] that was generated from children, parents, practitioners, case workers and wider sources of the extended community, allowed generalised conclusions to be drawn about the effectiveness of each program iteration and the impact of each intervention program on the wider context of a child’s life. This strategy permits depth and breadth in analyses and so captures the complexity of contextually and clinically rich conclusions.

The Childhood Context

Play, in both structured and non-structured activities, is an important mode of communication through which children can ‘speak’ about their experiences [32]. Hence, we centered both our intervention approach and evaluation methodology within the context of play. To this end, evaluation activities in Little Steps were facilitated through: (i) storytelling and opportunity for individual conversations about drawing meaning from experiences of sexual abuse and the therapeutic concepts in a one-on-one context with a practitioner; (ii) group discussions with children about important program concepts and (iii) concurrent individual and group discussions with parents to address the relational aim of both the intervention and evaluation.

Play included painting, puppets/doll shows, worksheets, charades, photographs, videos and books. These activities provided multiple opportunities for both meaningful therapeutic exchange and a rich source of data. Children could contribute their own self-reflections and demonstrate knowledge of their experience of sexual abuse and of core program concepts in these exchanges.

The decision to capture this range of information meant our research frame needed to be inherently multi-modal, consisting of data that could be both quantified and produce qualifiers of the observations made.

Mixed Method Enquiry

To collect information on ‘outcomes’ for our evaluations, we exploited a dialectical mixed method design in an attempt to: (i) uncover convergence in findings; (ii) elaborate and enhance knowledge of ‘what works’ and ‘how’; (iii) see program development as a process of refinement; (iv) discover paradoxes and contradictions and (v) expand the potential breadth and range of enquiry [33]. In mixed method vernacular, the quality of inferences made, from the triangulation of multiple findings, is a function of both design quality and interpretive rigor [34]. Berkowitz suggests that emergent evidence must withstand checks of sturdiness (among alternative explanations), plausibility and confirmability [31]. This research method involves consistency between procedures and the inferences that emerge; conceptual consistency with the known state of knowledge and theory; interpretive agreement across people and defensibility of interpretations against alternative explanations [34]. Mixed method investigations help researchers to better understand a particular research problem by triangulating numeric
trends from quantitative data with specific details from qualitative data [21,35]. The task for a dialectical mixed method enquiry is to ensure resulting knowledge claims are grounded in participants’ lives and enhanced by considering both unusual and representative cases through micro and macro lenses of analysis, even if accompanied by unresolved tensions [36]. Hence, in adhering to the person-centric dictum of capturing complexity, many sources of evidence need to be captured over time to offer the potential of contextually valid and accountable support for new intervention approaches.

The Devil is in the Detail

Our child-centred values commanded careful attention to the child’s experience of being assessed and what information would be relevant to capture, impacting: (i) the nature of evaluation questions (i.e., what could be asked); (ii) the process of asking evaluation questions (i.e., how questions would be asked); (iii) the level of opportunity created for children to respond to questions and (iv) technically, how behaviour, knowledge, learning, verbal communication, observations and engagement in play,
relationships with ‘other’ and a child’s core beliefs (cognition) could be systematically brought into the research frame. Capitalizing on Hogue’s [37] model for ‘adherence process research’, a micro level model of this research design is depicted in Figure 3. This micro level of the emerging evaluation framework can broadly be divided into: (i) a contextual appreciation of the impact of each program on the lives of participating families (contextual analysis); (ii) the extent of demonstrable concrete learning of targeted knowledge objectives and protective skills (via summative evaluation) and (iii) how well program delivery engaged and met a family’s emotional and relational needs (via formative evaluation).

Consideration of the particular resources available to the children we worked with, whose symptomatology was minimal or absent, in combination with the prophylactic nature of the intervention agenda, meant that outcome measures could not be logically tied to profiles of symptomatology. Instead, we explored broader concepts of wellbeing. This provided an impetus to develop a contextual appreciation of each child as they entered, progressed through and completed a program. We saw a child’s wellbeing and their ability to cope with the distress generated from experiences of sexual abuse, to effect and be affected by, the nature of their primary relationships, particularly across dimensions of power, trust and safety. These in turn were mediated by expressed feelings of shame, guilt and confusion. Vulnerability and wellbeing then had to be understood in more intricate ways, such as: (i) resources available and compromises to, a child’s primary relationships with parents/caregivers; (ii) a child’s perception about their own sense of resilience and how this might compare with their parent’s report on their socio-emotional strengths and difficulties; (iii) robustness or disruption to global development (e.g., achievement of developmental milestones, academic performance, sibling and peer relationships); (iv) targeted observations about their pre-sexual development, implicating their body awareness and (v) the presence or absence of trauma related symptoms. The idiographic nature of this contextual analysis allowed us to understand each child’s vulnerability relative to what else was known about that child and about other children, rather than as a cluster of symptoms.

Repeated Measures Idiothetic Single Case Analysis

With the above factors in mind, a series design for single cases offered opportunity to demonstrate both clinical efficacy (internal validity) of an intervention as well as its effectiveness (external validity) for individual participants [38]. While applied psychology has largely promoted extensive analysis of many cases over intensive analysis of few cases, research with small case numbers has unique strengths that are difficult to create using conventional positivist techniques. Systematically aggregated case formulation, particularly in instances of clinically complex cases, offers flexibility to practitioners and the applied researcher, in their decisions about intervention choice and delivery that are both theory driven and guided by results from iterative assessment rather than adherence to descriptions of standardized treatment protocols [39].

Integrating idiographic and nomothetic approaches to research help to illuminate nuances experienced in therapy [40]. While nomothetic analyses extract the most salient features of a sample, in isolation they obfuscate individual differences [41]. By contrast, idiographic approaches to data collection, analysis and interpretive inference, first introduced by Lamiell [42], seek patterns across individual profiles and allow focus on idiosyncratic cases that may be illustrative, exploratory or cumulative [43]. Tolerant of heterogeneity in participant samples, an idiographic approaches offer the possibility to exhume diversity and complexity, allowing examination of qualitative differences among similar cases. So, combining idiographic and nomothetic measurement as in Lamiell’s [42] idiographic approach, permits study of an individual participant’s progress over time to be understood within the context of unearthing general attributes applicable across individuals which is particularly important in translational research. Combining nomothetic and idiographic analyses serves a confirmatory function while revealing new questions that may not have been raised from either level of investigation when used independently [44,45].

Unlike statistical methodologies, idiographic analysis does not represent difference in terms of deviation from a central tendency [46]. Instead, it encourages both the identification and explanation of behaviour that varies from common outcomes. With this in mind, case portfolios were produced for each child and meaning drawn from what was known about each child. Then, across portfolio comparisons allowed for modest inferences to be made about general attributes of the participating sample. In this way, systematic case studies, while a pragmatic choice for this niche group, allowed the research to deliberately nomothetically on program-specific and client-determined change outcomes. To illuminate the change process idiographically, a contextual appreciation of each family was also undertaken [47].

The final methodological choice was to engage a Summative and Formative Evaluation, which addressed both how and why our particular interventions did or didn’t work. That both types of outcome occur in concert reflects the intrinsic and immediate relevance they have for one another. Given that programs can have both a positive and negative impact on a child’s life [48-51], we decided to undertake a summative evaluation that principally focused on detangling aspects of programs that enhanced or diminished a child’s capacity to cope with their experience. The summative evaluation, also called outcome or impact evaluation, investigated: (i) the extent to which the intervention achieved its stated aims; (ii) whether the intervention had uniform or variable success across participants; (iii) the effectiveness of each component of the intervention; (iv) whether the intervention had any unintended outcomes or impact and (v) whether the intervention was replicable [52]. In fulfilling these multiple objectives, the evaluation focused on a child’s ability to demonstrate learning of targeted program concepts and
assessed the impact of their participation on their general beliefs about appropriate touch and interpersonal boundaries. While iterative monitoring of wellbeing was undertaken to address accountability and to ensure the program and evaluation did no harm, iterative monitoring of knowledge offered unique opportunities to track the developmental progression of a child’s integration of target concepts and skills. To this end, we capitalized on Bloom’s Taxonomy of Learning Objectives (depicted in Figure 3 in italics) and assessed three levels of knowledge integration in each intervention: (i) recognition of relevant target concepts/skills (prompted responses); (ii) independent identification of relevant target concepts/skills (partially integrated knowledge) and (iii) applied knowledge (full integration of relevant knowledge). This allowed us to measure intervention objectives, along with any confusion that emerged about the prophylactic intervention goals. Only independent and applied levels of knowledge integration were considered markers of clinically significant change and were used as the standard to assess the program’s success.

A formative evaluation was also introduced and was critically informative in this translational process. Questions of intervention process can inform issues related to impact, facilitator and participant behaviours that shape summative outcomes and participant characteristics that may help predict differential responses [37]. Furthermore, our clinical experience underpinned our view that a detailed appreciation of the effectiveness of a program’s content is mediated by the culture of its delivery. Hence, in the formative evaluation we made systematic observations about procedures for administering program content and observations of therapeutic process. The iterative and formative focus fostered our awareness of the impact process variables can have on a program’s outcomes. These include: managing children’s distress and behaviour in session; the extent, nature and impact of parental participation in the therapeutic process; delivery methods applied to program content; closed versus open group policies and inclusion criteria. That these strategies could be tested and refined by way of the iterative design in the framework we adopted, facilitated our appreciation for practitioners undertaking this work and the processes confronting families in their decision to participate in psychotherapeutic intervention.

Conclusions

The child-centric intervention research framework described above was our response to the challenges of designing and evaluating psychological treatments for young children who had experienced sexual abuse. Unexpectedly, it has generated a framework for thinking about developmental research more broadly. The very nature of drawing practice into the research frame in this manner allowed conversations that engaged children and families into a therapeutic relationship and into evaluation procedures. These conversations in turn contributed to improved attendance at sessions and evaluation appointments and allowed the impact of those conversations on wider and more substantive outcomes to be understood. We present this work in the hope that this paper will generate discussion about the how and why of doing translational intervention research with children in a person-centred way that honours the world of childhood.

Conflicts of Interest

The authors declare no conflicts of interest.

References


