Metaphors in the Making: Illuminating the Process of Arts-Based Health Research Through a Case Exemplar Linking Arts-Based, Qualitative and Quantitative Research Data

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Abstract

Background: The potentials of arts-based health research are increasingly being realized as an approach to understanding and communicating the complexities of the human experience of health and illness. Despite this, arts-based health research often remains shrouded in obscurity, limiting its potential utility. Arts-based health research offers unique opportunities to integrate evidence of patients’ lived experience with other forms of research evidence to improve understanding and knowledge translation, but transparent descriptions of this praxis are generally lacking. In response, this article offers methodological insight and guidance through an in-depth case exemplar of an arts-based health research process linking qualitative research with diverse evidence sources in the context of frailty research. Methods: Responding to research data generated within a Centre of Research Excellence in Frailty and Healthy Ageing, we adopted a researcher-as-practitioner stance to produce research-based artworks to integrate and communicate conflicting research findings. We structure this process according to Ecker’s seven domains of qualitative inquiry, demonstrating parallels between the arts-based research and qualitative inquiry processes and offering opportunities for engaging with “evidence misalignments” resulting from incongruent evidence sources. Findings: Arts-based health research can enable meaningful reflection upon, integration, and communication of “evidence misalignments” in research spanning the health and social sciences. Such misalignments are problematic when the lived experience of health and illness conflicts with other empirical evidence, including gold standard evidence guiding treatment decisions. These in turn, can function as plausible barriers to self management and to achievement of health outcomes. Interpretation: Through the researcher-as-practitioner lens, and with an orientation to production, this work engaged with a new means of materiality—one that extends beyond text and numerical representations—and whose meaning and connections may not be immediately apparent. These relationships change how the researchers-practitioner engages with, understands, explores, and represents concepts, enabling epistemological and ontological gains of benefit to the health and social sciences.

Keywords
arts based methods, case study, focus groups, interpretive description, methods in qualitative inquiry, mixed methods, arts-based knowledge translation, arts-based research
user experiences are likely to be more satisfactory, reflective of participant priorities, and effective than strategies overlooking stakeholder perspectives (Graham et al., 2018; Greenhalgh et al., 2011). In pursuit of these understandings, and amidst growing recognition that “gold standard” research evidence (e.g., evidence from randomized controlled trials [RCTs]) may not align with the patient experience of health and illness, arts-based health research (ABHR) is gaining popularity in the health sciences (Boydell et al., 2012).

Despite a growing interest in ABHR, there remains uncertainty about the ABHR process. ABHR is a broad concept involving participation in the arts process (Archibald, Caine, & Scott, 2017; i.e., a participant stance which enables knowing through the artistic process) but also as an observer of the arts-process (e.g., digital storytelling, wherein the researcher is not the maker of the art-work but rather the facilitator of the process). Although theoretical writings about the merits of ABHR and literature reviews that map the research terrain continue to emerge (Archibald et al., 2014; Boydell et al., 2012; Scott et al., 2013), empirical examples explicating the ABHR process are less common. The health literature emphasizes a “researcher-as-observer” stance of ABHR, wherein participants use arts in data collection, which are often reduced to units of analysis by researchers. The alternative researcher-as-practitioner stance is less developed and involves a systematic process of arts-mediated investigation by the researcher. Nursing professionals whose orientation to knowledge production has been significantly shaped by recognition of aesthetic knowledge (Carper, 1978) may be particularly inclined toward this perspective (Archibald, 2012). The aim of this paper is therefore to provide insight into the ABHR process from the researcher-as-practitioner stance, to improve understanding and transparency and of this process for others engaged in ABHR. To achieve this, we provide a case exemplar structured according to Ecker’s (1966) seven domains of qualitative inquiry, thereby enabling accessible comparisons and access points to qualitative and mixed methods research practitioners.

**Researcher-as-practitioner stance.** Partaking in ABHR as a maker of artwork changes the nature of engagement between the researcher, practitioner, participant, and subject of study. Here, researchers’ relationships to research concepts extends beyond communicable data forms to generate non-discursive data attainable only through the process of making. This praxis-based orientation mirrors the experiential learning gathered through clinical practice via direct and embodied engagement (Archibald, 2012). Data are constructed through the arts-based process rather than exclusively obtained through distal means such as interviews or surveys. The researcher-as-practitioner stance also modifies engagement with form: concepts previously regarded cognitively are positioned in iterative dialogue with perception, cognition, emotion, and the senses (Wesseling, 2016). Through these means, and with an orientation to artistic production and process, the researcher-practitioner engages with a new means of materiality—one that extends beyond text and numerical representations—and whose meaning and connections may not be immediately apparent (Pigrum & Stables, 2005). These relationships change how the researcher-as-practitioner, engages with, understands, explores, and represents concepts, enabling epistemological and ontological gains of benefit to the health and social sciences. What is inaccessible through the ABHR as observer stance is the tacit knowing-through-doing (Polanyi, 1967/1983), the process-based understanding made possible only through first-hand engagement with form.

**Context: An Empirical Case Example of Qualitative Research in Frailty and Healthy Ageing**

In 2017, a large qualitative and arts-based study was conducted across five stakeholder groups to understand perspectives of frailty and frailty screening (Archibald, Ambagtsheer, et al., 2017; Archibald et al., 2020a, 2020b), as part of a mixed methods research program and as a fundamental aspect of a knowledge translation (KT) platform underpinning a National Health and Medical Research Council funded Centre of Research Excellence (CRE) in frailty and healthy ageing. The CRE aimed to mobilize transdisciplinary research to improve understanding, recognition, and management of frailty in South Australia. Defined as the generation, synthesis, exchange and ethically sound application of knowledge for decision making (CIHR, 2016), KT can also take arts-based forms (Archibald et al., 2014; i.e., arts-based KT), particularly when there is an interest in integrating, exploring, and communicating possible “disconnects” between evidence sources (i.e., “evidence-misalignments”; Archibald, Ambagtsheer, et al., 2020)

The lead author conceptualized a consumer-driven and arts-based approach to KT as central to the project. In alignment with the collaborative KT framework underpinning the program (Kitson et al., 2013), we first sought comprehensive understanding of older adults’ perspectives on frailty and frailty screening, in order to inform KT initiatives and screening implementation. An interpretive qualitative study was conducted with 39 older adults (65–99 years), from residential aged care, community, and assisted living (Archibald et al., 2020a). This work generated a schematic representation of older adults perceptions of frailty. A problematic misconception was identified wherein frailty was regarded as an inevitable and unmodifiable result of ageing. Participants communicated this perspective through the metaphor of a breaking cup (i.e., “frailty is like breaking a cup on the ground to smash) (Archibald et al., 2020a). This misconception motivated ABHR explorations including various performance (e.g., Untangling Frailty; A Perfect Simple https://www.youtube.com/watch?v=tTu-8k9Hlk), as well as other video (e.g., https://www.youtube.com/watch?v=41cMkvsuOOM&t=7s) and installation works, in order to provide a counter narrative sensitive to participants’ experiences and the contrasting empirical evidence (i.e., systematic reviews [SRs], RCTs) demonstrating the modifiability of frailty through
appropriate screening and interventions (e.g., protein rich diet and exercise) (Cameron et al., 2013; Jadezak et al., 2018).

**Case Example of “Beyond Measure”: Creating an Arts-Based Health Research Process**

Contrasting the research question drives the methods approach characteristic of other research methodology, ABHR as practitioner requires first-hand engagement with form and often generates new lines of inquiry. This relational engagement in turn influences ones’ understanding of the nature of the problem. As established interdisciplinary artists, we (i.e., the two collaborating artists on this work) had existing independent “ways of working” with various artistic modalities, none of which involved the ceramics suggested in the striking visual metaphor of the breaking cup. As such, we recognized the need to engage with the materiality of the cups and possible mechanisms of their repair, as a parallel to the materiality of the frail body and associated treatments. This process was largely exploratory, and involved the primary sourcing of second-hand materials (cups), adhesives (various types of glue), and a preliminary investigation of processes (e.g., breaking and repair using various methods, including Kintsugi). Kintsugi is an ancient Japanese approach using gold or other precious metal to repair and celebrate imperfection. Early on in the process, we began considering the Kintsugi method in contrast to the rapid, yet less aesthetic repair provided by superglue and other strong adhesives.

The very process of sourcing the materials instigated further reflection and inquiry. While scouring second-hand stores or op-shops, we were struck by the beauty of the discarded. Objects that previously held distinct purposes and were likely sources of aesthetic or functional appreciation in the lives of their owners were no longer. Presumably, the objects were considered worthy enough to be transferred to a new environment (e.g., a store) rather than facing disposal (e.g., as garbage). We contemplated the parallels between this object-mediated process and the social and familial “handling” of older persons in Western society. We questioned the sensation of each object being fundamentally displaced from its original home, and grouped together in an alien environment, such as a residential-care environment. This parallel reflection functioned as a conduit, bridging our experiential sourcing of objects with our previously collected qualitative data—particularly in reference to maintaining independence at home—and those experiences of residential care shared by participants in three of the seven focus groups (Archibald et al., 2020a).

The material sourcing and the related experimentation with diverse adhesives also provided an avenue for insight into our own biases. We questioned which factors were driving our selection of cups from the second-hand stores. Were we more drawn to those cups that seemed familiar, or perhaps were more ornate or conventionally beautiful? Were we more likely to carefully apply adhesive to the most beautiful cups, or those that seemed responsive to our efforts? Certain materials were less willing to submit to our efforts of repair. This in turn prompted musing into the relational aspects of fraility identification and treatment, and through the deliberate personification of the cups, we gained insight into the potential biases and barriers of health practitioners working with older adults along the frailty continuum who may or may not indicate responsiveness to management and treatment options.

**Determining Evidential Sources**

Within ABHR, evidence serves the myriad purposes of informing the research question, selection of materials, contextual positioning of the work, and technical components of “making.” However, perspectives on evidence often differ between ABHR and non-arts-based constructivist approaches, such as constructivist qualitative inquiry. Embodied, dialogic, and experiential evidence is generated through the ABHR as practitioner process; this footing in the subjective and relational is considered a strength of ABHR rather than a shortcoming or source of bias. However, in the context of ABHR with an orientation toward research dissemination and illumination of misalignments or “evidence-experience” gaps (Archibald, Ambagtsheer, et al., 2020), other sources of evidence are heavily drawn upon. Indeed, this diversity in evidence creates a productive space and tension for inquiry using ABHR.

The predominant sources of evidence for this work were derived from the (i) qualitative study with older adults (Archibald et al., 2020a, 2020b); (ii) extant SRs and RCTs on frailty treatment and management efficacy (Cameron et al., 2013; Jadezak et al., 2018); (iii) discussions with the collaborating artist and CRE team; and (iv) investigation of the materials and repair processes germane to the study focus. In reference to the qualitative research findings, several approaches to ABHR became apparent. Wherein interpretive qualitative thematic analysis and subsequent publication will most often seek to reflect the totality of themes pertinent to the research question and thereby provide an overview of the thematic content, ABHR can be decidedly more narrow. In this way, ABHR conducted in tandem with qualitative or mixed methods research can function as an in-depth analysis (e.g., sub analysis or accompanying analysis), providing a new perspective on components of thematic content. While divergent findings often arise, how to explore and (re) present their complexities is inherently limited by the linearity of traditional academic writing. Exploring the relationships of evidence in new material forms enables these ideas to interact freely without the confines of the two-dimensional form, stretching beyond the dogma of academic convention.

Considerations of repair required research into the ancient repair process of Kintsugi. This encouraged consideration of differing cultural perspectives on ageing and the value of the aged more generally, lending further spatial and cultural context to the work. A stark contrast arose between the time intensive and methodical process of repair using Kintsugi and the rapid solution offered by the superglue. We began...
questioning the underlying ideologies of these methods (e.g., the slow, visible and revered result of Kintsugi versus the rapid, hidden and unacknowledged result of superglue) in relation to frailty treatment and differing social perspectives on age, frailty and disability. This reflection became a meaningful evidential source that was present but not thoroughly investigated in the foundational qualitative research study.

**Initial Problem-Solving Phase/The Empty Canvas**

ABHR differs from other research approaches in the lack of certainty and cohesion in the formative stages of the project (Archibald & Clark, 2018). For approximately 6 months, we engaged in a playful exploration of the objects and their materiality, unsure of the final outcome, and in constant consideration of preserving integrity of original empirical data without stifling the creative process. This process involved trust in instinct; we sensed gathering diverse cups would be relevant but lacked clear justifications for this decision. However, this uncertainty in our instinctually driven decisions became clarified via our continuous and cyclical process of reflection and experimentation. After having determined the predominant evidence-misalignment (Archibald, Ambagtsheer, et al., 2020) to be explored through ABHR, and the general materials and process, we began engaging in a more systematic process of making. While encountering an “empty canvas” holds literal appeal for visual artists working with traditional wall-art, we were able to overcome some of this immobilization through the acquisition of the cups and other materials. The act of accumulation provided time and sufficient cursory material engagement. This provided further permission for exploration and a shared material space for collaborative discussion and musing.

**Problem Refinement**

Our preliminary material exploration led us on a path toward clarity when we paralleled the diversity of materials with the diversity of older adults in and beyond our qualitative research sample. A predominant underlying sentiment of older adults in our qualitative sample was each person’s individuality and uniqueness that for many, was muted, diminished, or lost in correspondence with decreased functional ability. Notions of self and individuality permeated these discussions; older adults living in the community with more pronounced functional limitations and those living in residential aged care lamented on what they were still able to do to preserve their interests and sense-of-self. Frailty, for some, was what happens when you can no longer do what you used to do—when you can no longer do what makes you, you (Archibald et al., 2020a). We envisioned that these personal narratives were held, some visibly and some invisibly, in each specific ABHR object. The materiality of each cup was reconsidered in relation to the narrative that we presumed it once held. Individual narratives were more accessible through particular cup “features,” such as 25th anniversary or “Happy Mother’s Day” messages. We came to reflect more upon the function of these overt methods of communication; how a simple message on a cup provided insight into who owned it previously, the person’s role, and something about their social or familial circumstance. A mother once held this cup, we reflected: someone who cared for her gave this mother this cup. We were confronted by the temporality of this existence and questioned what had happened for the object to be donated. Was the cup no longer wanted? Was its owner no longer with us? Or perhaps, the cup was one of many casualties of downsizing to a new residence. Cups became object signifiers, holding individual narratives not apparent upon initial presentation. These reflections in turn encouraged a reconsideration of the reductive practices apparent in health (e.g., the frail patient in room 7); the need for more humanistic and holistic approaches (e.g., understanding who this person is), and how readily these integral narratives become lost or obscured by the next contexts and situations in which we find them.

**Concept Crystallization**

Reconsidering the individual nature of each cup, we moved toward concept clarity when we recognized parallels between the objective and subjective evidence sources (e.g., RCTs versus data on patient experience), and the nature of our process (as first predicated in the subjective experience). Specifically, we were struck by the rapid visual assessments that we would conduct on each cup prior to initiating their breaking. We reflected on how this assessment process mirrors that of the clinician who, through the client visit and history, creates a judgment on patient status and presumed frailty risk. In response, we introduced standardized assessments to our breaking of the cups. This functioned as a commentary on objectivism and the “visual recognition” of frailty by practitioners, which is often used to justify non-adoption of “objective” frailty screening (Ambagtsheer et al., 2019).

We were particularly motivated by questions regarding the (in)accuracy of our visual assessment process. Often, cups that appeared fragile and prone to shattering instead surprised us with their resilience. Conversely, it was common for cups that appeared robust (e.g., cups with thicker walls and no previous signs of damage, such as chipping) to shatter when dropped, contrary to our initial visual appraisal and corresponding assessment of risk. We reflected on this phenomenon in relation to older persons presenting to a primary care environment and the unlikelihood of an accurate frailty risk assessment based on visual presentation alone. In light of this, we independently assessed each cup for extent and degree of anticipated breakage. We used two metrics to aid this assessment, the (i) extent of damage (i.e., documented as minimal breakage, moderate breakage, and shattering), and the (ii) number of drops required to produce a break. To promote the rigor of our process, we dropped cups in controlled conditions (i.e., using the same interventionist, height of drop, concrete contact-point, force of drop). We jointly conferred on and documented the outcome of the break, and then compared this outcome with our previous visual assessments to determine their accuracy. While our visual assessments reflected a degree of accuracy that was
largely comparable to chance, our visual assessments were positively skewed in favor of cups with thicker materiality, which ironically often shattered extensively when dropped. The noted misalignments between our visual assessment and the outcome of exposure to the adverse stressor (i.e., the fall) contributed further understanding of the nature of the problem by exposing parallels between clinical practice and human bias, experienced firsthand through ABHR practice.

Composition
Throughout the continued systematic production and construction process of gathering, exploring, assessing, breaking, and re-assessing, we also engaged in the process of reconstructing, painstakingly trialing various methods of cup reassembly. Like clinical frailty, cups (or persons) further along the frailty trajectory most often “shattered” and were less amendable to repair. Repair methods, such as superglue and Kintsugi were at our disposal, raising questions regarding which cups should be selected for which repair method (low–high resource), and upon which basis these decisions should be considered. Through this process we drew parallels to the under acknowledged ethics of frailty screening and intervention (Gallagher & Cox, 2019; Reid et al., 2018), and encouraged our questioning of disparities in resource allocation for frailty. Emotional responses and a resulting sense of personal connection to certain cups were noted and were observed to influence decisions regarding repair. The presumed narratives of certain cups encouraged this sense of connection. For instance, and in contrast to the second author who was only engaged in the mechanics of assessing, breaking and mending cups, the first author was drawn to cups with messaging around Motherhood, as this evoked reminiscence of personal experiences as a daughter and mother. This was observed as a continuation of a material narrative; there was a sense of visualizing the previous use of the materials, conjuring a narrative surrounding their past use (and even the process and circumstances leading to their discarding), and then connecting these presumed narratives to our own experiences in a largely unconscious process of projection and internalization. This process, along with a desire for aesthetic impact and cohesion, influenced decisions around repair methods. We questioned which influencing factor should dominate this decision making through a continual process of discussion and problematizing.

Knowing that we would be arranging the individual cups in a suspension installation, we did an approximate estimate of the number of cups required for the final work and ensured that we had additional pieces from which to purposively select for the final composition. The work was installed to create the movement of a cascade, a visual reference to analogies of frailty as a stepwise or multi-staged process of decline (Archibald et al., 2020a). The end point of the cascading installation culminated in a 24-carat gold, Kintsugi repaired single ceramic cup on a black plinth. The decision to conclude the work in Kintsugi was to draw attention to inherent beauty of aging as a privilege, an inevitability, and as an aesthetic signifier of our shared humanity, and also to evoke subtle questioning of differing cultural perspectives on aging.

Installation of the artwork in the contemporary gallery praxis ARTSPACE in Bowden, South Australia, provided the first opportunity to fully realize the composition of the work. Unanticipated influences of the gallery space, including black walls painted for the previous exhibition, created a sombreness in which to ponder the final work entitled “(Dis)Repair” (Figure 1).

The open space of the gallery provided numerous possibilities for installation of the work; we considered how the surrounding walls created a contained area for viewing and provided opportunity for a reveal of the artwork. This guided our selection of space. Following installation, we felt inclined to ground the work more fully in the qualitative research data. In response, we positioned a vinyl adhesive of the participant quote, “I know too many about breaking in half,” at the base of an adjacent wall. This quote functioned as another suggestive indicator of the human experience of the medical condition of frailty (Figure 2).

Table 1 provides an overview of the materials used in (Dis)Repair, and the associated reflections and afforded outcomes available through their use.

Reflection on Purpose
(Dis)Repair was one of a series of research-based art works created for the exhibition “Beyond Measure.” Opening on April
**Figure 2.** I know too many about breaking in half. 
Source: (Archibald & Blines, 2019).

**Table 1.** Materials, Associated Reflections and Afforded Outcomes.

| Material                              | Associated Reflections and Afforded Outcomes                                                                                                                                 |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ceramic cups of various constructions | Direct exploration of “frail” metaphor (i.e., frailty is like breaking a cup on the ground to smash). Exploring the “discarded” as a parallel for regard for older persons in Western society. Recognizing investment-return and relational biases in our repair processes and in relation to frailty identification and treatment. Cups as object signifiers enabled attribution of personal narratives accessible through the features of cups (e.g., on cup quotations), which enabled parallels to personhood, selfhood, and individuality of older persons. Juxtaposed with reductionist health practices. |
| Sourcing and re-grouping of ceramic cups | Reflection on the displacement of objects in parallel to persons to new care environments; resultant unfamiliar groupings and contexts.                                                                                           |
| Systematic screening of cups prior to breaking | Movement away from rapid visual assessment—paralleled by many practices of frailty screening—toward use of an “objective” measure. Exposed parallels between clinical practice and human bias.                                              |
| Adhesives (various)                   | Explore possible mechanisms of repair. Ethical questions regarding the which basis on which such decisions be made (e.g., disparities in resource allocation).                                                                     |
| Kintsugi (e.g., 24k gold, urushi lacquer) | Juxtaposition of celebrating “imperfections” associated with age and age-related change with rapid, non-celebratory methods of repair (akin to hiding; regaining of “perfect” form associated with youthfulness). Reflection on cultural and spatial differences in perspectives of ageing. |
| Quotation                             | Grounding of the installation in qualitative data. Reminder of humanistic experience of clinical condition.                                                                                                          |
| Installation                          | Questioning relationship to context of gallery space; parallel with larger contextual influences of aging. Juxtaposition of cascading form (i.e., inertia of ageing and time-related change) with stillness of suspended materials. External materialization of experience enabled permission to acknowledge, reflect, and share experiences. |
11, 2019, (Dis)Repair was arguably the central installation of this exhibition; its success in part attributed to the strong grounding in the qualitative research data (Archibald et al., 2020a). Similar processes of material engagement were witnessed in patrons of the exhibition opening who, after engaging with the installation, offered reflections on their personal stories evoked through this viewing. Stories of a grandmother’s china set and musings of differing cultural treatments of the aged were among these expressions. The suspended cups and fragments evoked an eerie sense of stillness that contrasted to the illusion of movement created through the cascading form, and paralleled the inevitable sense of inertia experienced in our own ageing lives. Through the materialization of participants’ intangible experiences, the installation provided permission to acknowledge, reflect upon, and share one’s own experiences, fears, and uncertainties related to ageing and frailty—topics that are often regarded at minimum as undesirable and at times, taboo.

**Conclusion**

Much of the power of ABHR resides in its capacity to evoke unease, questioning and disequilibrium in the viewer (Archibald, in press; Rosiek, 2018). These experiences activate and integrate sensory, emotional, and cognitive responses, enabling engagement through resonance (Archibald, 2019). The familiar materiality and metaphorical basis of (Dis)Repair provided a bridge towards the abstraction of qualitative and mixed research data, lowering the barrier to engaging with the often difficult to discuss concept of frailty. The exhibition and subsequent permanent installation of (Dis)Repair in a high-traffic area of the College of Nursing and Health Sciences at Flinders University, South Australia, provides extended opportunities for viewer reflection, directly contrasting the active search and retrieval required of the associated research articles as alternative (and conventional) dissemination modalities.

From a researcher-as-practitioner perspective, the ABHR process enabled a material externalization of the qualitative research, and a place of material integration of these data with other forms of research evidence (e.g., evidence from RCTs demonstrating the modifiability of frailty). This, in turn, invited a continued revisiting of process. The resulting ABHR product is material-fodder for instruction and reflection on the nature of productive and unproductive “misalignments” within the health system, and an awakening to new possibilities of experience (Archibald, Ambagtsheer, et al., 2020a; Archibald & Clark, 2018). Through this reflective case exemplar, we invite practitioners working at the interface of the health and social sciences to consider—or re-consider—the merits of first-hand engagement with form, and give credence to the unique understandings afforded by a researcher-as-practitioner approach to ABHR. The resulting integration of diverse forms of knowledge (Archibald, in press)—including tacit and explicit knowledge (Polanyi, 1967/1983)—can help uncover the dynamic complexities of the human experience, and place these in dialogue with the recognized methods (e.g., qualitative, mixed methods) used to generate understanding of these experiences. Through this engagement, the ABHR not only creates space for the dialogical but legitimizes the experiential knowledge of practitioners that otherwise remains largely dormant in the cognitive dominance of the 21st century knowledge enterprise.

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