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Research paper

# Healthcare professionals' knowledge, skills, and role in offering and facilitating memory making during end-of-life care in the adult intensive care unit

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ABSTRACT

*Background:* An activity to provide a tangible keepsake following the death of a loved one is termed 'memory making'. However, limited evidence is available related to professionals' education and support to provide memory making opportunities in the adult intensive care unit (ICU). Having a greater understanding of healthcare professionals' experiences can inform future patient/family care and support for professionals in end-of-life care.

*Objective:* The objective of this study was to describe what participants perceive memory making to be, if they have facilitated memory making activities as part of their practice, if they perceive it as part of their role, and if they have the necessary skills to do so.

*Methods:* Seventy-five registered nurses (75% response rate), 19 medical doctors (76% response rate), and two social workers (66.7% response rate) completed a survey at a single tertiary referral centre in an adult ICU.

*Results:* Participants reported memory making to include the creation of tangible keepsakes as well as nontangible activities. Overall, participants reported high agreement scores that the responsibility for initiating memory making predominately belonged to the nurse. Participants reported skills most needed involved the ability to interact with the family, being open to the concept, and integrating memory making into their standard of care. Having developed a rapport with families was considered an enabler, whereas lack of knowledge and clinical workload were reported as inhibitors to offering memory making.

*Conclusions:* Overall, participants in this study reported positive experiences with offering memory making to families during end-of-life care in the adult ICU. Nurses are more likely to perceive professional responsibility for offering memory making, likely due to their increased time at the bedside and higher prominence and leadership in other end-of-life practices. To support professionals, education should include conceptual knowledge, procedural knowledge of keepsake creations, communication techniques using reflective practices, and organisational support to facilitate time requirements.



## 1. Introduction

Families who experience the death of a loved one in the intensive care unit (ICU) are reported to retain significant details of the event over a year later,[1] suggesting that memories obtained during ICU are significant and lasting. The salient memories of the 'little touches' of ICU care delivered to the families are reported to be predominate memories for bereaved family members compared with other details of the hospitalisation.[2] These memories of the 'little touches' are reported to demonstrate compassionate and humanistic care in the ICU that families carry into their bereavement experience.[2]

Family members whose loved ones become acutely unwell and require intensive care level of support are reported to experience heightened psychological stresses, including anxiety, depression,

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and anger that can last beyond the hospitalisation period and place them at a greater risk of developing posttraumatic stress disorder.[3] In death, the experience is not isolated to the individual who died, but rather it affects the survivors within the deceased's social realm and culture.[4] After a death, survivors must learn to adapt to the new absence and the changes in their social structure while oscillating through loss- and restoration-oriented coping for their adjustment to the death experience.[5,6] While restoration-orientation includes distractions and time off from grieving, the loss-orientation phase involves the survivor's active concentration and processing of the experience, reflections and yearning for the deceased, and breaking bonds to the deceased.[5,6]

Our memories serve as a source of knowledge about the deceased, and their creation requires the person to actively construct within their mind the ideal presence of the person who is no longer present. This new ideal presence exists only as a mental image for the bereaved survivor.[7] Signs, objects, or keepsakes may serve as instruments of memories, thoughts, and knowledge for the survivors as the dead are represented to the survivors through the keepsakes.[8–10] Keepsakes are classified as an object a survivor applies meaning to, that they then link back through their memories of the deceased when they want to remember them.[9–11] Memories created through keepsakes are specific to each person, as survivors have the ability to weave together mixtures of real and imagined memories through varying contexts, feelings, and experiences triggered by the object.[12] Keepsakes such as pictures, hand photos/prints, clothing, jewellery, blankets, and furniture[13–17] have been described by survivors during the loss-orientation phase of their learning to adapt to the death of their loved one.

Within the hospital setting, assisting with the creation of keepsakes to serve as an instrument for memories has been mostly reported in the neonatal population,[18] with less evidence from the adult ICU context.[18,19] For the purpose of this study, creation of mementos in end-of-life care is termed memory making, an activity that provides an object or keepsake that can help a bereaved individual create a connection with and provide meaningful memories about a deceased person.[20] In other disciplines, the memento objects can be referred to as linking, transitional, or melancholy objects.[13,21] Providing families the opportunity for memory making has the ability to be considered a 'little touch' during end-of-life care that families might value receiving for use in their bereavement, but limited evidence is available related to healthcare professionals' (HCPs') experiences with offering memory making in the adult ICU and the education and support needed to provide this option to grieving families.

The aim of this manuscript was to report healthcare professionals' knowledge and perceived skills in offering and facilitating memory making in an adult ICU. Specifically, the aim of this study was to describe what participants perceive memory making to be, if they have facilitated memory making activities as part of their practice, whether they perceive memory making as part of their professional role, and if they have the necessary skills to do so. Having a greater understanding of HCPs' experiences with memory making in the adult ICU has the potential to inform future patient and family care and support, as well as inform education and support of HCPs in providing end-of-life care.

### 1.1. Study design

The descriptive analysis results are reported as part of a survey designed using Likert and open-ended questions and administered both by paper and online using REDCap electronic data capture tools hosted at the University of Sydney[22] to achieve the objectives of the study.

### 1.2. Study site

This study was conducted at a single tertiary referral centre in Sydney, Australia, in a general adult ICU. Ethics and site approval was obtained from the South Eastern Sydney Local Health District Human Research Ethics Committee (HREC Ref 17/152).

To support the family surrounding the death of a loved one, a patient and family end-of-life/bereavement program, called the Loved One Support Service (LOSS), was implemented in November 2015 in a 17-bed combined ICU/high-dependency unit (HDU) at this study site. This program encourages open visitation; allows for personalisation and humanising the environment with pictures, music, aroma diffusers, and electric candles; distributes bereavement booklets; sends sympathy cards to the next of kin around week 1 after ICU death; and provides follow-up phone calls around week 5 to assist with lingering questions and direct the next of kin to resources if needed. One component of this program includes supporting facilitation of memory making around the time of death by providing the loved ones options of obtaining keepsakes/mementos, including handprints or footprints, locks of hair, and teddy bears for children. This hospital does not have a separate palliative care ward, so end-of-life care in the terminal phase of life is predominantly conducted within the ICU, although at times, a patient may be transferred to an appropriate ward for longer term end-of-life nursing care.

### 1.3. Sampling and recruitment

Eligible registered nurses (RNs), medical doctors (MDs), and social workers (SWs) employed full-time, part-time, or casual who had experience with implementing end-of-life/bereavement care and had worked more than 3 months within this study site were invited to participate through flyers in staff common areas, email, and the unit's closed social media page between June and August 2017. There were 128 eligible HCPs working within this ICU study setting. Staff self-determined participation eligibility prior to participation, and consent was implied for all returned anonymous surveys.

### 1.4. Instrument

The survey included individual questions related to memory making activities as part of end-of-life care in the ICU assessed on a 6-point Likert scale where 1 = completely disagree; 2 = mostly disagree; 3 = slightly disagree; 4 = slightly agree; 5 = mostly agree; and 6 = completely agree in addition to participant demographic information. For questions where experience in memory making was believed by the researchers to be necessary to answer the question, the option of 'not applicable' was available to participants. Open-ended questions were also included to explore several topic areas in more detail. The questions reported in this study were developed by the researchers for descriptive analysis based on the behaviour domains of knowledge, skills, and social/professional role and identity from the Theoretical Domains Framework,[23] and an expert panel consisting of ICU RNs and medical specialists reviewed the survey instrument for face validity prior to use. See supplementary material for the survey instrument.

#### 1.4.1. Data analysis

Statistical analysis was conducted using IBM SPSS, version 24,[24] and descriptive statistics was reported as mean (M) (standard deviation [SD]). A comparison of RN and MD participants' means scores of agreements related to responsibility for initiating memory making was conducted using the Mann–Whitney U test. The small sample size of SW participants did not allow for valid statistical comparison with either RNs or MDs. Chi-squared test ($\chi^2$) was used for post hoc analysis of the proportion of RN participants to MD

participants who indicated they had prior experience of offering memory making. An inductive thematic analysis was undertaken from each open-ended question from the survey data to provide as accurate a reflection of the data as possible.[25] All study investigators (MR, SR, and TB) reviewed and agreed on the extracted themes.

## 2. Results

### 2.1. Participants' characteristics

One hundred participants responded (78% response rate); four respondents were then excluded from final analysis owing to survey incompleteness of 75% or more. Valid survey participants included 75 RNs (75% response rate), 19 MDs (76% response rate), and two SWs (66.7% response rate) (See Table 1).

The mean age of the participants was similar among professional groups (Table 1). Most participants reported their highest education level as either bachelor's degree or postgraduate certificate/graduate diploma, and their length of experience in the ICU ranged from 3 months to 37 years. Most participants (93%) reported more than 6 months of experience in adult ICUs, including medical, surgical, or cardiothoracic surgery, 5.2% reported experience in paediatric intensive care, and no participants reported prior experience in the neonatal intensive care (See Table 1).

### 2.2. Knowledge

The survey questions related to *knowledge* explored the constructs of knowledge about the phenomenon/scientific rationale and procedural knowledge of memory making.[23] Prior to being given the definition of memory making, survey participants reported what they considered to be acts of memory making. Participants reported that for them, the act of memory making included the creation of hand or footprints and keeping locks of hair and also could involve other nontangible objects such as preparing the body for family viewing (see Table 2). Additionally, participants were asked to report other activities or items they considered acts of memory making during end-of-life care, where themes included memory integration through the staff promoting the reminiscence about the person with the loved ones (see Table 3).

Following the participants' responses to these questions regarding their perception of what constitutes memory making, the following definition was provided for reference for the reminder of the questions: "*Memory making is an activity that provides a tangible object(s) that can help a bereaved individual create a connection with and provide meaningful memories about a deceased person. For this survey, tangible objects include handprints, footprints, and/or locks of hair*".[20]

### 2.3. Skills

The survey questions on *skills* included the constructs of competence, ability, practice, and skills development.[23] Almost 70% of participants reported that they had experience offering memory making opportunities to families (Table 2). Of the respondents, 80% (n = 60) of RNs versus 26.3% (n = 5) of MDs ($\chi^2$ $p < 0.001$) and both SW respondents reported experience offering memory making. Participants who had not offered memory making to families reported that it was predominately due to not having had opportunity to do so, a perceived knowledge deficit regarding memory making, or the inability due to perceived workloads (Table 3).

Participants reported that the skills and personal attributes required to offer memory making included the ability to interact with the family, to be open to the concept of creating memories, and to integrate memory making as a standard of care in their own practice through focussing on person-centred care and prioritising time for offering (Table 3). Participants also reported that the skills they believe they needed to improve on included improvements in self-maturity, skills to care of the person and family, and communication skills.

### 2.4. Social/professional role and identity

The survey questions related to *social/professional role and identity* included the constructs of professional identity and role and group norm.[23] Overall, participants reported high agreement scores that the responsibility for initiating memory making predominately belonged to the nurse (M = 4.6, SD = 1.3), followed by SWs (M = 3.8, SD = 1.3) and then MDs (M = 3.1, SD = 1.3). Further analysis revealed that nurse participants reported statistically significant higher rates of agreement that initiating memory

**Table 1**
Sociodemographic characteristics of study participants.

| Characteristic | All participants, n = 96 | Registered nurses, n = 75 | Medical doctors, n = 19 | Social workers, n = 2 |
|---|---|---|---|---|
| Age in years mean (SD) | 38.1 (10.7) | 38.7 (10.6) | 35.4 (10.7) | 42 (11.3) |
| Male | 25 (26%) | 14 (19%) | 11 (57.9%) | 0 |
| Female | 70 (73%) | 60 (80%) | 8 (42.1%) | 2 (100%) |
| Did not state gender | 1 (1%) | 1 (1%) | 0 | 0 |
| Country of professional education | | | | |
| Australia | 52 (54.2%) | 39 (52%) | 11 (57.9%) | 2 (100%) |
| United Kingdom of Great Britain and Northern Ireland and Ireland | 31 (32.2%) | 25 (33.3%) | 6 (31.6%) | 0 |
| India | 3 (3.1%) | 2 (2.7%) | 1 (5.3%) | 0 |
| Philippines | 4 (4.2%) | 4 (5.3%) | 0 | 0 |
| Other | 6 (6.3%) | 5 (6.7%) | 1 (5.3%) | 0 |
| Highest level of education completed | | | | |
| Hospital certificate | 4 (4.2%) | 3 (4%) | 1 (5.3%) | 0 |
| Bachelor's degree | 38 (39.6%) | 27 (36%) | 9 (47.4%) | 2 (100%) |
| Postgraduate certificate or graduate diploma | 38 (39.6%) | 36 (48%) | 2 (10.5%) | 0 |
| Master's degree | 14 (14.6%) | 9 (12%) | 5 (26.3%) | 0 |
| PhD/professional doctoral | 2 (2.1%) | 0 | 2 (10.5%) | 0 |
| Mean length of experience in years as a registered health professional (SD) | 14.8 (10.8) | 15.4 (10.7) | 10.9 (11) | 14 (8.5) |
| Mean length of experience in years in the ICU (SD) | 10.2 (9.5) | 11.1 (9.4) | 7.1 (9.6) | 4.5 (4.9) |

ICU, intensive care unit; SD, standard deviation.

**Table 2**
Questions related to domains of knowledge, skills, and social/professional role and identity.

| Survey question | All participants, n = 96 |
|---|---|
| | Yes *n*, % |
| The act of memory making involves the following: | |
| Allowing the family to spend time with the person after death. | 95 (99%) |
| Allowing the family to create hand or footprints of the person. | 91 (94.8%) |
| Allowing the family to keep a lock of hair of the person. | 89 (92.7%) |
| Preparing the body for the family's viewing. | 86 (89.6%) |
| Asking the family questions about the person (patient) to learn more about them. | 83 (86.5%) |
| Being present at the time of death. | 78 (83%) |
| Giving the family written information about bereavement care. | 77 (81.1%) |
| Talking to the family or patient about his or her prognosis. | 69 (71.9%) |
| I have received education related to memory making for families. | 63 (65.6%) |
| I have read literature/published information about memory making. | 23 (24.2%) |
| If so, where did you read about it? | |
| Medical/nursing journal. | 11 (11.5%) |
| Website. | 8 (8.3%) |
| Social media. | 4 (4.2%) |
| Medical/nursing textbook. | 3 (3.1%) |
| Blog. | 1 (1%) |
| Other. | 5 (5.2%) |
| Participants reporting in-service lectures in ICU or colleagues. | 4 (4.2%) |
| I have offered memory making to families in intensive care. | 67 (69.8%) |
| | **M (SD)** |
| I know the benefits of memory making for the family.[a] | 4.9 (1.0) |
| I have the necessary skills to offer families the opportunity to create memories after a death.[a] | 4.6 (1.2) |
| I find it difficult to offer families the opportunity to create memories after a death.[b] | 2.9 (1.4) |

ICU, intensive care unit; M, mean; SD, standard deviation.
[a] Question utilised a 6-point Likert scale.
[b] Question utilised a 6-point Likert scale and included the option of 'not applicable to me'.

making was their responsibility compared with MDs or SWs ($p < 0.001$) (See Fig. 1).

## 3. Discussion

The aim of this study was to report HCPs' knowledge and skills in facilitating memory making in the adult ICU. The key findings include the following: (i) participants perceived memory making to include the creation of tangible keepsakes as well as nontangible activities; (ii) almost 70% of participants reported experience in offering memory making to families; (iii) nurse participants reported higher rates of agreement that initiating memory making is the responsibility of the nurse; (iv) participants reported not offering memory making owing to lack of procedural knowledge, despite a high level of agreement for knowing the benefits of memory making; (v) participants had high levels of agreement to having the necessary skills to offer families memory making opportunities, but educational opportunities exist in areas of communication and how to integrate memory making into one's standard of care, and support is needed to allow for the time required to complete the family's requests; (vi) meeting families for a short period of time did not prevent the offering of memory making, but having a rapport with the family did assist.

Survey participants reported to perceived memory making to include the creation of tangible keepsakes as well as nontangible activities such as allowing the family to spend time with the person after death. The phrase 'memory making' was also viewed by participants to encompass other activities that may create 'positive memories' for the surviving loved ones, which is consistent with prior literature, where making the dying person look as 'normal' as possible and modifying the environment are considered important end-of-life care activities.[26,27] These nontangible activities reported by participants suggest a more holistic view of end-of-life care where the offering of memory making is not separated from other acts of patient care during end of life. Participants might be reporting the nontangible activities as memory making owing to previously learned professional responsibilities in end-of-life care, including nurses applying models of care, such as Orem's Self-Care Deficit Model of Nursing when a person is limited or incapable of providing effective self-care,[28] SWs' focus of reducing family stress through individual and family therapy and advocacy,[29,30] and possibly demonstrates reported MDs' shift to a more conversational framework that supports emotionally therapeutic encounters, as has been reported by others.[28,31]

In this study, almost 70% of participants reported experience in offering memory making to families, with the highest proportion of experience being reported by RNs. It is uncertain if this rate of experience is unique to this study site or is representative of other sites as there are no known comparable prior studies in the adult ICU. Additionally, participants reported higher levels of agreement that the responsibility for initiating memory making predominately falls to the nurse, particularly from nurse participants. Nurses might feel an increased professional ownership and obligation in offering memory making owing to having a greater presence at the bedside for longer periods of time than other HCPs and therefore being in a greater position to facilitate communication and assist with end-of-life care rituals and comforts for the patient and family.[28,32–34] Results in this study are consistent with others reporting nurses in acute and critical care settings having more of a leadership role in end-of-life care and feeling a professional duty to be at the bedside to support the patient and family.[18,34–38]

Perceived high workloads and feelings of memory making being unnecessary were reported by some participants as barriers to offering, and the ability to prioritise/allow time to offer and provide memory making is a reported required skill. Prior research has reported that RNs are more likely to report having time available to spend with the family after a patient dies than medical professionals,[34] which might contribute to nurse participants' reporting greater professional responsibility for offering memory making.

**Table 3**
Open-ended questions for the domains of knowledge and skills.

| Survey question | Theme | Subtheme | Example quotes (participant number) |
|---|---|---|---|
| Other acts of memory making: | Palpable | Practical arrangements | *"Discussing with family regarding the process beyond death as to pt [patient] body, movement and logistics of funeral, cremations, arrangements"* (6-MD) |
| | | Tangibles | *"Diaries, photos"* (37-RN) |
| | Memory integration | ICU memory | *"Surrounding the room with photos/memorabilia/ music"* (61-RN) |
| | | Reminiscence | *"Talking to the family, asking questions only to help them think about the patient's life, good moments, valuable times, to help them communicate with the patient and each other about the patient's life and loved (*sic*) for each other"* (60-RN) |
| What has prevented you from offering memory making to families in intensive care? | No opportunity | Other staff completed | *"Already done by nursing staff prior to my input"* (6-MD) |
| | | No exposure to the patient population | *"Never chance to care of dying for a while"* (78-RN) |
| | | Family absent | *"Family not ready for death then not present once they've come to that acceptance"* (48-RN) |
| | Knowledge deficit | Unfamiliarity of offerings | *"Not familiar with all aspects of memory making or how it is delivered locally"* (20-MD) |
| | | Felt unnecessary to offer | *"Older patient/death expected and was seen as the only way forward. Older people and family have a lot of 'memories' around them"* (30-RN) |
| | Workload | Time poor | *"Busy schedule (only had one opportunity this was an organ donation so I was busy doing tasks for this)"* (86-RN) |
| The skills most needed to offer families the opportunity to create memories after a death are: | Staff's interactions with family | Communication | *"Speak to them, explain what's involved and if they like to do it. Communication skills"* (76-RN) |
| | | Empathy | *"Empathy/compassion. Ability to communicate and initiate the discussion."* (50-RN) |
| | | Listening | *"Listening and asking the family what they want. I cannot assume I know what they want but need to ask."* (43-RN) |
| | | Rapport | *"Need to have built rapport with the specific family beforehand"* (91-RN) |
| | | Approachability | *"Being open/approachable/sensitive, instilling confidence"* (27-RN) |
| | | Situational awareness | *"Knowing/judging families' reaction to accept end of life"* (34-RN) |
| | Staff's openness | Willingness | *"Willingness to do so, getting hand on, it's just another aspect of pt [patient] care"* (69-RN) |
| | Standards of care | Person-centred care | *"Giving families the ability to decide if they want to participate"* (39-RN) |
| | | Allowing time/prioritizing | *"Making time to involve the family members"* (41-RN) |
| | | Protocol knowledge | *"How and when to take a hand print"* (65-RN) |
| The skill(s) I think I need to improvement on to provide memory making is(are): | Self-maturity | Grief support | *"Embracing the family in time of grief and meet their needs, perhaps being more on board with the process"* (31-RN) |
| | | Experience | *"As a JMO [junior medical officer] I am usually involved in the administrative aspects of end-of-life care (i.e., paperwork!) and it is normally the consultant/fellow who deal directly with the family"* (91-MD)<br>*"Having some exposure. My only opportunity was declined by family"* (55-RN) |
| | | Own comfort with death | *"Controlling my emotions – sometimes I take a step back when I gets too much for me. I feel a nurse's responsibility is to remain at pts [patients'] and families' bedside"* (70-RN) |
| | Care of the person and family | Practical arrangements | *"Practical tips, best paints to use"* (15-SW) |
| | | Education | *"Awareness and knowledge of memory making activities and how to facilitate them"* (20-MD) |
| | | Time management | *"Time management in allowing enough time for memory making"* (58-RN) |
| | Communication | How to have difficult conversations | *"Therapeutic communication – this is just too subjective at times and you can never really know whether you're lacking or being too much in this aspect"* (7-RN)<br>*"approaching those families who are angry about the death"* (33-RN) |
| | | Approaching families | *"Determining the appropriate time to discuss it"* (99-RN) |

ICU, intensive care unit; MD, medical doctor; RN, registered nurse; SW, social worker.

Many participants reported not offering memory making owing to their lack of knowledge, despite a high level of agreement for knowing the benefits of memory making. These responses suggest that conceptual knowledge about the potential benefits of memory making is insufficient to ensuring its offering. Inadequate procedural knowledge about keepsake creation and unfamiliarity with local processes was reported by participants as aspects preventing the offering. The need for practical tips was reported by participants as skills requiring improvement. Other literature has reported that both conceptual and procedural knowledge is necessary to develop procedural fluency in order to solve a variety of problems efficiently and with flexibly.[39,40] Educational opportunities that address a variety of potential patient and family end-of-life care situations should be provided, with increased focus on procedural knowledge for memory making offerings and facilitating the keepsake creations, as well as conceptual didactic education. Providing both procedural and conceptual knowledge can help professionals gain procedural fluency in memory making. Lack of education has also been reported in other studies as a barrier to implementing bereavement services[37,38] where regular reexposure is needed for optimal retention.[41]

HCPs had high levels of agreement in having the necessary skills to offer families memory making and levels of disagreement when asked if they find it difficult to offer the opportunity. Participants reported the required skills most needed to offer memory making involved the ability to interact with the family, being open to the memory making concept, and integrating memory making into the HCPs' standard of care. The process of memory making does require several steps for the HCP to complete, including determining the timing of when to offer, effective communication skills to convey the opportunity to the appropriate person(s), and the actual act of creating the keepsake(s) if desired. For this study, participants did not indicate that having met families for a short period of time prevented them from offering memory making opportunities, but having skills to develop a rapport with the family did assist. This could be because HCPs in this study ICU are accustomed to meeting new families and patients regularly, often caring for new patients most shifts, medical teams change and rotate weekly, and there is typically one main SW assigned to the ICU at any time who is consulted by nursing and medical staff as required. Future research is needed to determine if frequent changes in healthcare staffing influences family members' decision to create memory making items when offered.

Determining when to approach grieving families in the ICU, how to approach them, the skills for participating in difficult or uncomfortable conversations, and time management was reported by participants as skills perceived needing improvement. The family's reaction to the impending or eventual death, whether ranging from peacefulness and acceptance to shocked and intense emotions, is reported by participants to affect their timing of when, how, or even if they decide or have the opportunity to offer memory making. Memory making in this setting is encouraged to be offered to all families and is not obtained unless desired by the family; therefore, HCPs require a degree of comfort communicating about this topic in order for the family to have the opportunity to receive these time-limited keepsakes. The process of allowing loved ones to decide what they choose to obtain, keep, and use during bereavement is also consistent with other research reporting that families consider bereavement to be an individual experience and unique in each situation, making it challenging to predetermine what families require without involving them in the decision-making process.[1,42,43] Other literature has reported that HCPs appreciate having the opportunity to connect to patients and families and have used memory making items as starting points for conversations to assist in providing these meaningful connections.[36,44,45]

Based on the participants' responses in this study, increased education sessions could be beneficial, including incorporating simulations on communication techniques encompassing problem-solving strategies using reflective practices to help increase exposure and knowledge opportunities for different end-of-life scenarios.[46,47] Additionally, supporting HCPs' participation in regular observations of more experienced professionals conducting family meetings and discussions could help provide knowledge opportunities,[46,47] especially for HCPs who reported in this study to not have opportunities to offer memory making owing to limited exposure to patients receiving end-of-life care. When encountering an end-of-life situation, HCPs must reflect on their possible actions of when, how, and who to approach about memory making and the likely outcomes of each potential action before deciding on the most suitable one to take.[48] Because each end-of-life situation is unique, the professionals' knowledge and experience will not always be adequate for future family encounters. Exposure to different experiences, both theoretical and clinical, could develop new knowledge for the professionals' use in future encounters.[1,48] Communication skill deficits for difficult conversations and end-

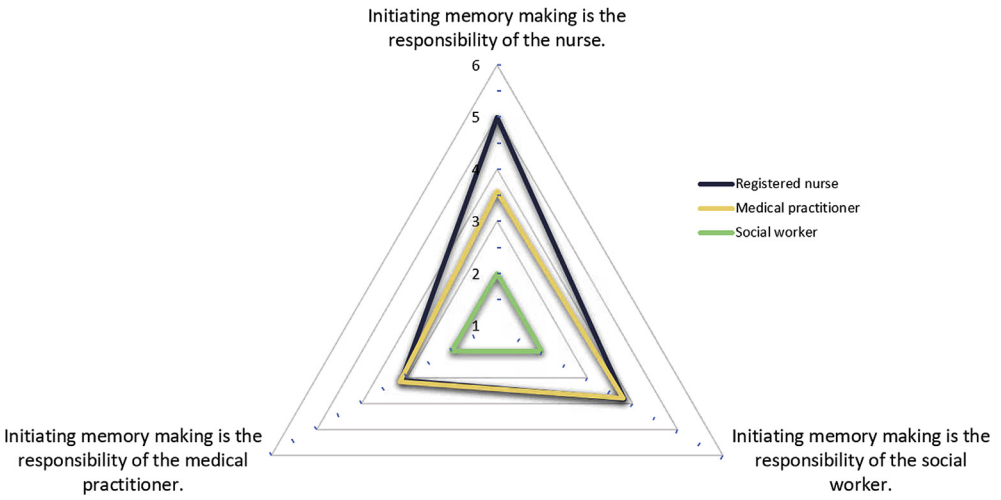


**Fig. 1.** Comparison of participant mean rates of agreement by profession for three questions related to responsibility for initiating memory making, where the axes are based on the 6-point Likert scale: 6 = completely agree; 1 = completely disagree.

of-life scenarios, as well as barriers of time availability to have the conversations, has been reported in prior studies,[38,46,49,50] and this study extends these findings. Future research is also needed to explore the family's preferences and experience in offering memory making to inform best practice.

## 4. Limitations

This study represents a self-selected sample at a single-centre and provides a snapshot of participant's perceptions at one point in time. As such, results are only relevant to the participants who participated and may not represent perspectives of those who did not participate. Some of the responses provided by participants under the skills category represent personal attributes rather than skills that can be obtained. For transparency, results are reported as the participants have provided them.

## 5. Conclusion

Overall, participants appear to have positive experiences with offering memory making in the adult ICU, with a high proportion of participants reporting offering keepsakes and reporting it to be integrated into their standard practice. Memory making can be perceived to include multiple aspects of the end-of-life care provided, in addition to offering the tangible keepsakes. The ICU nursing profession is most likely to perceive professional responsibility for initiating and facilitating memory making, which is supported through their increased time at the bedside and higher prominence and leadership in other end-of-life care practices. To support HCPs gaining procedural fluency in offering and providing memory making, education should include providing not just conceptual knowledge of potential benefits to family members but also procedural knowledge of keepsake creation and communication techniques using reflective practices. Support should also be provided to allow for the additional time and workload assistances required to help complete the family's requests.

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## Conflict of Interest

T Buckley is an Editor for Australian Critical Care. In keeping with currently policy, this submission was handled by members of the Editorial Committee and Buckley did not have access to the submission, other than that provided to authors.

## CRediT authorship contribution statement

**Melissa Riegel**: Conceptualisation, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition. **Sue Randall**: Conceptualisation, Methodology, Formal analysis, Writing – review & editing, Supervision. **Thomas Buckley**: Conceptualisation, Methodology, Formal analysis, Writing – review & editing, Supervision.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.aucc.2021.08.003.

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