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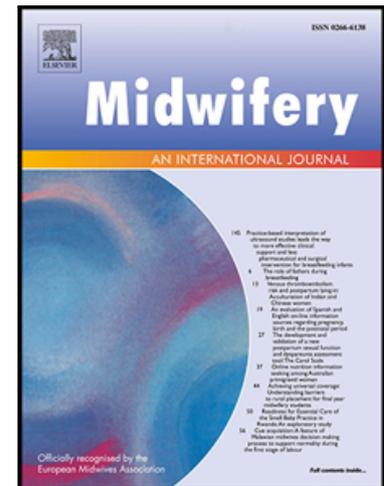
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TITLE

Assessing emotional aspects of midwives' intrapartum care: Development of the Emotional Availability and Responsiveness in Intrapartum Care Scale

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INTRODUCTION

Midwives have acknowledged the emotional terrain entailed in their practice and understand that an 'emotional give and take' needs to be present in their relationships with the women in their care (Hunter, 2010). To meet women's needs, quality midwifery care is characterised by a high degree of physical and emotional intimacy (Barker, 2011). Feeling emotionally supported by intrapartum caregivers is critical to women's experience of giving birth (Bowers, 2002; Dahlberg and Aune, 2013; Ross-Davie and Cheyne, 2014). Women report feeling positive and safe when they perceive their midwife is available to engage emotionally with them (Berg et al., 2012; El-Nemer et al., 2006; Lyndon et al., 2018). Women frequently perceive emotional assistance as the most important aspect of labour support (Nikula et al., 2015; Rossiter, 2008).

The importance of emotional support during labour and birth for women's subsequent emotional and psychological wellbeing is highlighted in the new WHO intrapartum guidelines (World Health Organization, 2018). Emotional supportive care during labour and birth reduces anxiety, negative mood (Ford and Ayers, 2009) and the risk of experiencing birth as a traumatic event (Harris and Ayers, 2012). Women who perceive withdrawn, or distant intrapartum care can feel abandoned during labour and birth (Harris and Ayers, 2012). For women with a history of sexual abuse these feelings may contribute to experiencing birth as a traumatic event (Montgomery et al., 2015). A recent Cochrane review on debriefing interventions for prevention of psychological trauma in women following childbirth suggests investigating the potential of improved emotional care to reduce the risk of birth trauma (Bastos et al., 2015).

Hunter (2005) explained that providing emotional support is a form of emotional work as it requires midwives to get emotionally involved with women. It has been

suggested that midwives may identify with women's emotions to provide responsive care during labour and birth (Leinweber and Rowe, 2010). Despite an increasing awareness about emotional aspects of midwifery care, much of the emotional dimension featured in midwives' interpersonal relationships with women during caregiving remains poorly understood (Callwood et al., 2016; Hunter and Deery, 2009, Hunter et al., 2008).

Attachment Theory (Ainsworth, 1978; Bowlby, 1971) focuses on emotional aspects of interpersonal relationships and is increasingly applied to understand and improve interactions between patients and providers in health care (Bay-Smadja and Rahioui, 2015; Cassidy et al., 2015; Hooper et al., 2012). Originally conceptualised to describe emotional bonds between a child with its caregiver (Bowlby, 1971), the concept of attachment has also been applied to interpersonal interactions across the life course (George and West, 2001). 'Attachment' concerns a person's propensity to seek relationships with others who can help them feel safe when they are vulnerable (Bowlby, 1971). Attachment relationships are emotional bonds that lead an individual to seek proximity to a safe or powerful person - the 'attachment figure' (Bowlby, 1971). Beyond infancy, attachment behaviours are observed to be 'activated' in times of stress or ambiguity, for example when there is a perceived or real threat (Bowlby 1971). In adulthood, close relationships such as romantic relationships, friendships, but also client-provider relationships, can have characteristics of an attachment relationship (Gillath et al., 2017; Hadden et al., 2014; Mallinckrodt, 2010).

Emotional availability and responsiveness to another's emotional signals are key to attachment relationships (Ainsworth, 1969). Emotional availability is the individual's emotional attunement to someone else's needs and goals, and has been referred to as the "connective tissue" in relationships (Biringen, 2000; Easterbrooks et al., 2012). Responsiveness is the ability to deliver a timely and adequate response to another's

emotional signals and needs (Ainsworth, 1969). Maternal responsiveness has been found to be associated with synchronous exchanges between a mother and her infant (Leclère et al., 2014).

Attachment, emotional availability and responsiveness are conceptually close to the midwifery concept of 'being with' women. For midwives 'being with' a woman denotes availability to attend to the woman's physical and emotional needs during labour and birth (Thelin et al., 2014). Pembroke and Pembroke (2008) describe midwives' availability for women during labour and birth as a way of providing 'spiritual care' which is experienced as meaningful by both midwives and women. Responding to women's physical and emotional needs during labour and birth are central to high quality midwifery care (Lundgren and Berg, 2007). The centrality of emotions in attachment bonds, and the conceptual similarities between emotional availability, responsiveness, and guiding concepts of midwifery models of care, suggests that attachment theory may provide a useful framework for assessing emotional aspects of midwifery care.

Measures of emotional availability and responsiveness

A review of the literature on assessment of attachment, emotional availability and responsiveness yielded two observational scales and one self-report scale. Caregiver emotional availability has been assessed by Biringen (2000) with the Emotional Availability Scales (EAS). The EAS measures the emotional availability of the caregiver according to four dimensions: sensitivity, structuring, non-intrusiveness, and non-hostility (Biringen, 2000). Observers are given detailed descriptions of criteria and rate the caregiver-child interaction on each dimension using a scale of 1 = highly insensitive to 9 = highly sensitive. Emotional availability as measured by the EAS significantly relates to child attachment security (Biringen et al., 2014).

The only measure that assesses provider emotional availability and responsiveness in provider- patient interactions was developed in the field of psychotherapy (Soderberg et al., 2013). Soderberg et al., (2013) modified the original EAS to assess psychotherapist's emotional availability. Scores are associated with the quality of the therapeutic relationship, which in psychotherapy is strongly associated with therapy outcome (Martin et al., 2000). Clients of therapists who scored high on the EAS overall were more satisfied with their relationship with their therapist (Soderberg et al., 2013).

Recognizing the importance of effective maternal responsiveness for child development, Amankwaa et al., (2007) developed the Maternal Infant Responsiveness Instrument (MIRI). The 22-item self-report scale measures maternal responsiveness to her infant, recognition of her infant's responsiveness to her, and difficulties in responsiveness (Amankwaa et al., 2007). Sample items include 'I believe I can comfort my baby' and 'I have seen my baby respond to my talking to him/her'. The authors also investigated factors that affect maternal responsiveness and identified that social support and self-esteem increased whilst stressors decreased maternal responsiveness. The MIRI was subsequently found reliable to determine maternal responsiveness in mothers of term and preterm infants (Baker et al., 2013; Evans et al., 2012).

The development of measures that consider women's perspectives when assessing the quality of maternity care has been highlighted as a research priority (Kennedy et al., 2018). Many qualitative studies show that emotional aspects are central to women's perception of the quality of intrapartum care. Similarly, qualitative studies have identified that midwives recognise emotional interactions as key part of their practice. However, emotional dimensions of midwives' caregiving have not been examined systematically. A search of the electronic databases Medline, Cinahl and

PsychMed with the keywords: 'midwifery care or intrapartum care or perinatal care' and 'emotions' or 'emotional support' or 'responsiveness' or 'emotional availability' yielded no published valid and reliable measures on this topic.

Aim

The aim of this study was to develop and test a self - report measure for midwives to assess their emotionally attuned intrapartum care.

2. METHODS

The scale was part of an online survey to explore the prevalence of traumatic stress and associated factors in midwives. Full details of this study have been published elsewhere (XXX et al., 2017; XXX et al., 2017). The current paper describes the development and testing of a tool generated for that survey and has not been reported previously.

2.1 Instrument development

This study followed a sequential process of instrument development and evaluation (DeVellis, 2016). The first step involved generating a pool of items from three sources, (1) a critical review of the literature on emotional aspects of perinatal caregiving, (2) a review of existing measures that assess attachment, emotional availability and responsiveness including the Maternal Infant Responsiveness Instrument (MIRI) (Amankwaa and Pickler, 2007), and (3) insights from clinical practice.

Items from the MIRI were inspected for their applicability to the context of midwives' perinatal caregiving. Suitable items were then modified (e.g. MIRI item 'I believe I can comfort my baby when he/she cries' was modified to 'I can usually comfort a woman when she is distressed' and MIRI item 'I believe my baby responds well to my care' was modified to 'I believe women respond well to my emotional support').

Emotional availability was represented by items inquiring about caregiving behaviour aiming to provide emotional comfort by 'being with' the woman during labour and birth. Items include 'I usually achieve an emotional connection with the woman'; I usually know when a woman wants me to 'be with' her. Responsiveness in caregiving was represented by items inquiring about how midwives understand women's emotional signals and needs. Items include 'I usually know what a woman wants during the different stages of labour and birth', 'I usually know when a woman wants me to give emotional support'. To capture the phenomena of midwives' identification with women's emotions an additional item 'I usually allow myself to get 'in sync' with women's emotions during labour and birth' was added.

A five-point Likert response scale (1= strongly disagree to 5= strongly agree) was chosen. Four items were negatively worded to minimise response bias and scores for these items were reversed. Item scores were summed to create a total score.

In the stem of the questionnaire respondents were asked to 'please think about your usual *experiences and beliefs* of providing care for women during labour and birth. If your work does not *currently* include intrapartum care, please answer the questions with regard to your *most recent experiences*.'

Expert Review

To establish content validity, generated items (n = 22) were discussed and rated by an expert panel (Polit, 2012). The panel consisted of academic midwives (n = 14) eighty percent of whom regularly engaged in clinical practice directly or through supervision of students in practice on a weekly basis. The panel identified nine items as inadequate or not reflecting the concept of emotional availability and responsiveness in the context of midwifery practice (e.g. 'I think I sometimes respond

slowly to the woman in my care'). These items were removed. The final scale included 13 items which were then assessed by six practising midwives four of whom worked as hospital-based and two as homebirth midwives. This group confirmed content and face validity of the final scale. The highest possible score of the draft scale was 65 indicating a high attribution of emotional availability and responsiveness to perinatal caregiving practice, the lowest possible score was 0 indicating the absence of an attribution of attachment phenomena by the midwife.

2.3 Participants and Setting

The survey was conducted with members of the Australian College of Midwives (ACM), the peak professional body for midwives in Australia, which had 4578 members at the time of conducting the study. Inclusion criteria were holding registration as a midwife in Australia. A sample size of 580 participants was calculated to achieve a prevalence estimate with 95% confidence level with a 5% margin of error (Raosoft, 2017).

2.4 Survey instrument

In addition to the new tool, elements of the original survey also included personal and professional characteristics and an empathy scale. Respondents were asked about personal and professional characteristics including age (years), length of registration (years), hours worked per week, main place of practice, number of births attended per month.

To assess concurrent validity of the draft tool, empathy was assessed with the 'empathic concern' and the 'personal distress' subscales of the Interpersonal Reactivity Index (IRI) (Davis, 1983). The empathic concern subscale measures "other-oriented" feelings of sympathy. Items include 'When I see someone being

taken advantage of, I feel kind of protective towards them.' (Davis, 1983). The personal distress subscale measures "self-oriented" feelings of personal anxiety and unease. Example items include 'In emergency situations, I feel apprehensive and ill-at-ease.' and 'I sometimes feel helpless when I am in the middle of a very emotional situation.' Both subscales consist of 7 items answered on a 4-point Likert scale (1 = 'does not describe me very well' to 4 = 'describes me very well'), producing scores with a potential range of 7–28. High scores reflect greater empathic concern/personal distress. The IRI subscales have good internal consistency (Cronbach's alpha=.72 for 'empathic concern' and Cronbach's alpha=.78 for 'personal distress') (Davis, 1980) and satisfactory validity and reliability when used with nursing populations (Cronbach's alpha .68 -.76) (Yu and Kirk, 2009). In the current study internal reliability was good for both subscales (Cronbach's alpha =.72; .70 respectively).

Procedures

An email invitation including a link to the online survey was distributed by the Australian College of Midwives to its members. A reminder email was sent two weeks after the initial invitation. Data were collected between March and June 2014.

Ethics approval

Approval for the study was obtained from the XXX University Human Research Ethics Committee (Ref No: NRS/50/13/HREC).

Statistical analysis

Data collected from the online survey was reviewed for completeness and exported via Lime Survey software (Lime Survey Project Team, 2012) into the Statistical Package for the Social Sciences (SPSS) for analysis. The accuracy of data entry was double-checked by visually comparing the dataset and data obtained from the online survey. The presence of outliers was checked by inspecting the frequency

distributions of variables. Two outliers were identified in the draft tool; however, they did not affect the mean (5% trimmed mean almost identical to mean), so these cases were retained. Preliminary data analysis was conducted to identify any missing values. A conservative approach was adopted to handle missing cases. Cases in which respondents did not complete the first survey section were removed from the dataset. Frequency distributions were constructed for each variable to identify the number of cases of missing values. Descriptive statistics were used to analyse scale scores. Associations between empathy and the draft tool were assessed using Spearman's rho correlation test. An alpha level of 0.05 was used for all statistical tests.

FINDINGS

Seven hundred and five midwives completed the survey (response rate = 15%).

Participant characteristics

Midwives in this sample were on average 42 years old and had been registered for an average of 14 years (SD 11.2, range= 1-42). They worked 31 hours per week and attended an average of 7 births per month (SD 8.4, range= 0-60). A majority of respondents (82.5%) in this sample reported attending at least one birth per month, suggesting that they were currently practicing.

Around half (55%) of respondents had a Bachelor's degree as their highest qualification, 20% had a diploma or certificate and 25% had a Master's degree or doctorate. Compared to all employed midwives in Australia, midwives in the current study sample were younger, more likely to work in a hospital and more likely to be involved in providing perinatal care (Australian Institute of Health and Welfare (AIHW) et al., 2013).

Factor analysis

To find underlying latent constructs and investigate coherent subscales, principal component analysis (PCA) was undertaken. With 13 items and 705 responses, the case to variable ratio was 1:54 which is considered adequate for factor analysis (DeVellis, 2016). Visual inspection of the correlation matrix revealed a sufficient number of correlations suggesting suitability for factor analysis. No items correlated too strongly which might have suggested duplication. Five items had an average inter-item correlation of less than 0.3 and were removed. Eight items were included in the factor analysis. Bartlett's test of sphericity was significant ($p < 0.001$). Corrected item total correlations were all positive and the corrected item total correlations range was between 0.59 and 0.74. The Kaiser–Meyer–Olkin measure of sampling adequacy was 0.9 which is considered excellent (Dziuban and Shirkey, 1974). Varimax rotation (Kaiser Normalisation) was used. Extracted eigenvalues were examined. One factor had an eigenvalue of greater than one (4.4) and explained 55.1% of the variance. A one factor solution was extracted (see table 1). The tool was named the Emotional Availability and Responsiveness in Intrapartum Care scale (EAR-IC)

Table 1 Pattern matrix for one factor solution

Item	
Item 1	.681
Item 2	.690
Item 4	.746
Item 5	.776
Item 7	.763
Item 8	.817
Item 9	.698
Item 13	.754

ACCEPTED MANUSCRIPT

Psychometric evaluation of the instrument

Internal reliability

The internal reliability for the 8-item scale was good ($\alpha = .88$) and removal of items did not further increase the Cronbach's alpha.

EAR-IC score

The possible range of EAR-IC scores was 8 to 40. The mean score in the current study was 33.00 (SD= 3.97, range= 8-40; 95% CI [32.70, 33.27]). Frequencies and item means for individual items are described in Table 2.

Table 2. Frequencies Emotional Availability and Responsiveness in Intrapartum Care scale (EAR-IC)

Items	Strongly disagree		Disagree		Somewhat agree		Agree		Strongly agree		Mean (SD) score per item
1. I can usually comfort a woman when she is distressed.	4	(0.6)	2	(0.3)	47	(6.6)	364	(51.5)	290	(41.0)	4.32 (0.66)
2. I usually know what a woman wants during the different stages of labour and birth.	3	(0.4)	12	(1.7)	120	(17.0)	416	(58.8)	156	(22.1)	4.00 (0.71)
3. I usually achieve an emotional connection with a woman.	3	(0.4)	5	(0.7)	80	(11.3)	422	(59.7)	196	(27.7)	4.14 (0.66)
4. I usually know when a woman wants me to give emotional support.	3	(0.4)	6	(0.8)	81	(11.5)	443	(62.7)	173	(24.5)	4.10 (0.65)
5. I believe women respond well to	4	(0.6)	2	(0.3)	58	(8.2)	476	(67.3)	166	(23.5)	4.13 (0.60)

Items	Strongly disagree		Disagree		Somewhat agree		Agree		Strongly agree		Mean (SD) score per item
my emotional support.											
6. I usually know when a woman wants me to 'be with' her.	3	(0.4)	1	(0.1)	69	(9.8)	434	(61.4)	198	(28.0)	4.17 (0.63)
7. I usually allow myself to get 'in sync' with a woman's emotions.	3	(0.4)	33	(4.7)	158	(22.3)	378	(53.5)	133	(18.8)	3.86 (0.79)
8. I feel good about how I respond to women in my care.	4	(0.6)	6	(0.8)	50	(7.1)	385	(54.5)	260	(36.8)	4.26 (0.68)

EAR-IC and empathy

To establish concurrent validity, EAR- IC scores were compared with the Interpersonal Reactivity Index (IRI) empathic concern and personal distress subscale scores. Spearman's correlations showed that the EAR-IC was moderately positively correlated with the empathic concern subscale of IRI ($\rho = .25, p < .001$) and moderately negatively correlated with the personal distress subscale of the IRI ($\rho = -.25, p < .001$), although these correlations did not exceed 0.5.

DISCUSSION

This study applied an attachment theory framework to investigate emotional aspects of midwives' intrapartum care. This study is the first to systematically assess midwives' emotional availability and responsiveness towards women's emotional needs during intrapartum caregiving and extends the investigation of attachment phenomena in provider-client relationships to maternity care. Psychometric testing confirmed validity and reliability of the EAR-IC.

Associations with empathy

Associations between the EAR-IC scores with the 'empathic concern' and 'personal distress' subscales of the Interpersonal Reactivity Index (IRI) confirmed validity. The moderately positive correlation of empathic concern with the EAR-IC suggest that empathic concern and the attribution of attachment phenomena in midwives are related concepts and may influence each other. Associations between empathic concern with the EAR-IC are congruent with findings from attachment research which show that empathy is reduced in individuals who avoid affectionate relationships (Richman et al., 2015). This gives further weight to the ability of the EAR-IC to identify midwives who engage in a close emotional bond with women in their care.

The moderate correlation between the IRI empathic concern and personal distress subscales suggests that empathy does not fully embrace emotional availability and responsiveness in perinatal care. The absence of a strong association also resonates with critique on the IRI empathic concern and personal distress subscales' ability to capture emotional aspects (Chrysikou and Thompson, 2016). Results of the current study suggest that although there is conceptual overlap, empathy and emotional aspects of care are not the same. For example, earlier authors have suggested that assessing empathy may not capture the dynamic of the midwife-woman relationship because it does not reflect emotional aspects of intrapartum care including midwives' identification with childbearing women's emotions (Leinweber and Rowe, 2010). Considering the evidence showing that emotional aspects of caregiving are central to childbearing women, it is important that assessment of midwife-provider interactions goes beyond assessing empathy to include emotional aspects of care.

Emotional aspects of care

The findings of this study suggest that most midwives during caregiving hold themselves to be emotionally available to the woman and respond to her emotional needs. The results confirm findings from qualitative studies, in which midwives describe activities requiring emotional involvement including comforting, reassuring, and serving as an 'anchored companion' as part of their intrapartum care practices (Barker, 2011; Lundgren and Dahlberg, 2002; Thelin et al., 2014).

Synchronising with another person's emotions is an expression of emotional closeness that is also found in mother-infant dyads (Leclère et al., 2014). Almost three quarters of midwives in the current study agreed or strongly agreed with the statement 'I usually allow myself to get 'in sync' with a woman's emotions'. In previous qualitative studies midwives have described synchronising own emotions with the woman's emotions and identifying with her during intrapartum caregiving to

the extent that they may feel the woman's pain and "become more like her [the woman]" (Lundgren & Dahlberg, 2002, p. 160). Midwives described how identifying with a woman when providing intrapartum care, increases their ability to 'be with' this woman (Lundgren and Dahlberg, 2002; Ólafsdóttir, 2009).

Earlier authors have suggested that identification with women during intrapartum caregiving may be a specific feature of midwifery practice (Leinweber & Rowe 2010). In mothers of young infants synchronising behaviour is strongly associated with maternal responsiveness and indicates a successful attachment bond (Baker and McGrath, 2011). The high number of midwives in the current study who indicated an 'emotional synchronisation' with the woman in their care suggests that it may be common for midwives to synchronise their own emotions with women's emotions and to identify with women when providing intrapartum care.

Overall, midwives reported high levels of emotional availability, responsiveness and synchronisation with women's emotions during intrapartum caregiving. Attachment theory suggests that emotional availability, responsiveness and synchronisation are characteristics of an emotional bond between partners in a relationship (Ainsworth, 1978). These results of the current study indicate that midwives frequently provide intrapartum care within a close emotional connection with the woman. Allowing for emotional closeness when providing intrapartum care may be a feature of high-quality midwifery care.

However, as attachment emotional bonds between midwives and women are dyadic in nature, it is important that future research investigates how childbearing women experience caregiver intrapartum emotional availability and responsiveness. Further insight into the dyadic nature of the emotional bond between midwife and woman may be gained by the development of an observational tool, which would enable to

also evaluate women's responses to midwives' communications for the assessment of midwives' emotional attuned caregiving. Such a tool could also support the assessment of emotional availability and responsiveness in midwife students.

Studies in nursing and medicine have suggested that close emotional bonds with patients can also have detrimental effects on provider mental health (Fegran and Helseth, 2009; Maytum et al., 2004). For midwives, the prolonged and intimate contact that can lead them to identify with women when providing intrapartum care may also increase their vulnerability to co-experience any emotional distress a woman may develop during childbirth (Leinweber and Rowe, 2010). Future research needs to investigate if caregiving in emotional close relationships with women makes midwives more vulnerable towards co-experiencing women's emotional distress during labour and birth.

Limitations

This study has several limitations. Whilst the use of a self-report questionnaire allows for a direct measure of midwives' feelings or perceptions, it creates a potential for 'social desirability' effects. Midwives may distort their behaviour or responses to appear to be 'good midwives'. To minimize the risk for self-report bias in this study, providing clear instructions, appealing for honesty, and assuring confidentiality and anonymity were used (Polit-O'Hara and Beck, 2012).

The response rate was relatively low at 15% which limits the generalisability of findings. Midwives in the current study sample were younger and worked fewer hours per week compared to all employed midwives in Australia, which limits the generalisability of the findings to older midwives and those who manage a higher workload. However, the big sample size and respondents' high involvement in

perinatal care strengthens the study findings as it is likely that most midwives drew on recent experiences of perinatal care when answering the survey questions.

The EAR-IC is a first in the field, and no other standardised measure of self-report emotional availability and responsiveness in intrapartum care was available for comparison. However, the measures used for concurrent validity were drawn from a published, validated scale and increase the external validity of the findings.

Future research could investigate which personal and workplace related factors affect levels of emotional availability and responsiveness among midwives. It could be, for example, that different models of midwifery care foster varying levels of emotional availability. Furthermore, the EAR-IC could be used to investigate associations between midwives' emotional availability and responsiveness during caregiving with birth outcomes.

CONCLUSION

The Emotional Availability and Responsiveness in Intrapartum Care scale (EAR-IC) appears to be a valid and reliable tool to assess emotional aspects of midwifery practice. Midwives hold themselves emotionally available to women and respond to their emotional needs when providing intrapartum care. Applying an attachment theory framework to intrapartum care validates women's perspectives on the importance of emotional aspects of care for their experience of giving birth. The EAR-IC scale can be used to enhance the quality of maternity care and inform the content of professional development for emotionally attuned caregiving during labour and birth. Midwives may find the assessment of emotional availability and responsiveness useful to identify aspects of their practice which are promoting or hindering a close relationship with clients. In midwives who identify with low levels of emotional

availability using the EAR-IC consideration of the results may stimulate reflection about their practice and identify what they need to become an emotionally attuned maternity care provider. In education, the EAR-IC could be used to facilitate student midwives' self-assessment to increase awareness of the importance of emotional aspects of care and to trace the development of these skills during the training.

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