

## **Midwifery Student Evaluation of Practice: The MidSTEP tool - Perceptions of Clinical Learning**

**Experiences.**

### **Abstract**

#### **Background**

Little emphasis has been given to the standardised measurement of midwifery students' perceptions of their clinical learning experiences.

#### **Aim**

To develop a tool that evaluates students' perceptions of their clinical learning experiences according to environment and impact of preceptors on professional development.

#### **Methods**

A cross-sectional design was used. Tool development had three phases: item generation; expert review to assess clarity, apparent internal consistency and content validity; and psychometric testing. All Bachelor of Midwifery students at one university in Australia were invited to complete the online survey. Psychometric testing included dimensionality, internal consistency and test-retest reliability.

#### **Results**

A 74% (n = 279) response rate was achieved. Factor analysis revealed the Clinical Learning Environment Scale and Impact of the Preceptor Scale accounting for 53.6% and 71.5% of variance respectively. Both scales were reliable (Cronbach's alpha = .92 and .94) and valid. Overall, students positively rated the clinical learning environment and preceptors' abilities to foster their sense of identity as a midwife. Students were less satisfied with preceptors' understanding of the academic program.

#### **Discussion**

The new tool consists of two scales that reliably measure midwifery students' perceptions of how the clinical learning environment develops their skills and reflects a midwifery philosophy.

Preceptors had a positive influence on students' skills and professional development.

### **Conclusions**

The Midwifery Student Evaluation of Practice tool is the first valid and reliable measure of students' perceptions of their clinical learning experiences. Students' feedback provides valuable information to educators and preceptors on how best to optimise clinical learning.

**Keywords:** Midwifery, students, survey, clinical, professional development

## **STATEMENT OF SIGNIFICANCE**

### **Problem**

Little attention has been given to the standardised measurement of midwifery students' perceptions of their clinical learning experiences and impact of preceptors.

### **What is known**

Clinical practice influences students' development of clinical competence and professional identity. Quality clinical education is critical to the success of pre-registration midwifery programs.

### **What this paper adds**

The Midwifery Student Evaluation of Practice tool was found to be reliable and valid. The tool offers a useful means of evaluating students' perceptions of the clinical learning environment and impact of preceptors. Regular review of students' clinical learning experiences contributes important information to ensure quality clinical education.

## **INTRODUCTION**

Health service environments worldwide have long been identified as a key influence on students' acquisition of clinical competence and professional self-identity<sup>1,2</sup>. The clinical education environment refers to the diverse contexts, cultures and physical locations in which students learn<sup>3,4</sup>. In Australia, the clinical practicum of programs leading to registration as a midwife constitutes 50% of total student learning<sup>5</sup>. This proportion is similar to that of other countries such as the United Kingdom, New Zealand and some European countries, such as Germany. Understanding how students' clinical learning experiences impact on their development as midwives is fundamental to producing graduates who can successfully transition to practice, work to their full scope of practice, and continue to grow both personally and professionally. However, little emphasis has been given to the standardised measurement of midwifery students' perceptions of their clinical learning experiences. The analysis of reliable evaluation data about the quality of clinical learning experiences enables program outcomes, structures and processes to be monitored and revised, and barriers to be addressed to ensure quality experiences to support students' transformational learning.

### **Background**

A review of literature in the past 10 years revealed a paucity of tools that aim to measure students' clinical learning experiences in midwifery undergraduate programs. A small number of tools are evident in nursing, medical and health sciences literature. According to a systematic review by Mansutti et al.<sup>6</sup> one of the most commonly used tools in nursing is the 42-item Clinical Learning Environment Inventory (CLEI) by Chan<sup>7</sup>, administered in its initial form or modified for specific research contexts<sup>8-11</sup>. The CLEI comprises six subscales to assess nursing students' perceptions of the clinical learning environment according to Individualisation; Innovation; Satisfaction; Involvement; Personalisation and Task Orientation<sup>7</sup>. The CLEI has influenced the development of several tools either through extension and/or modification. For example, Newton et al.<sup>11</sup> modified the CLEI tool to examine the quality of a preceptorship model of nursing clinical education in metropolitan and rural

Victoria in Australia. Salamonson et al.<sup>8</sup> abbreviated the CLEI to 19 items to measure nursing student satisfaction with the clinical learning environment and clinical facilitator support. Anderson et al.<sup>9</sup> utilised the CLEI to guide development of the Interprofessional Clinical Placement Learning Environment Inventory (ICPLEI) to measure the clinical learning experiences of Australian students immersed in interprofessional learning on a training ward. While Henderson et al.<sup>10</sup> modified the CLEI to differentiate salient features of the clinical learning environment across three major Australian healthcare facilities that could be informative to clinical leaders.

In medical and health sciences research, the validated 50-item Dundee Ready Education Environment Measure (DREEM)<sup>12</sup> and 40-item Postgraduate Hospital Education Environment Measure (PHEEM)<sup>13</sup> have been widely used to evaluate medical students' perceptions of their learning environments<sup>12-14</sup>. Specifically, DREEM is a generic tool for comparative analysis of undergraduate medical curricula across cohorts and institutions and as a predictor of student academic success<sup>14</sup>. The PHEEM with a focus on the hospital-based clinical teaching environment measures student perceptions of role autonomy, teaching and social support<sup>13</sup>.

Unlike medicine and nursing, midwifery practice as defined by the International Confederation of Midwives reflects a social model of healthcare<sup>15</sup>. Midwifery care is holistic and values women's decision-making abilities<sup>16</sup>. The woman-midwife relationship is unique, and decisions related to the provision of care are based on a woman's preferences and values in combination with best available evidence<sup>17</sup>. Given the defining characteristics of midwifery practice, measures of clinical learning quality need to reflect the philosophy of midwifery care. Our search of the literature did not identify any reliable and valid clinical evaluation tools specifically designed for midwifery. Previous studies evaluating the clinical learning experiences of midwifery students have used qualitative and mixed methods research. Topics have included comparisons of clinical supervision methods<sup>17</sup>, clinical placement types<sup>18,19</sup>, and mentorship models<sup>20</sup>. The use of simulation in clinical education<sup>21</sup> and barriers and motivators to learning<sup>22</sup> also feature.

McKellar et al.<sup>17</sup> recently adapted the Clinical Placement Experience Questionnaire<sup>23</sup> which contains closed, open and semi-structured items, and was originally validated but not published. As part of their mixed methods evaluation of three models of clinical supervision, McKellar et al.<sup>17</sup> surveyed midwifery students (n = 174, 58.4% response rate) about perceived quality and satisfaction with their clinical experiences (16 items) and model of clinical supervision (17 items). Reliability and factor analysis of the survey form were not reported. In another Australian study, Carter et al.<sup>19</sup> developed a survey to evaluate students' perceptions of learning. The small cohort (n = 17) were registered nurses enrolled in a Bachelor of Midwifery and placed only in continuity of midwifery care models. While the survey contained scales, which were found to be reliable, face and content validity were only tested amongst members of the research team, and dimensionality was not assessed. The authors recommended further testing with a large sample of midwifery students<sup>19</sup>.

The lack of reliable and valid tools in midwifery clinical education was further highlighted in a recent review of the literature. Hallam and Choucri<sup>20</sup> completed a thematic analysis of the literature to explore the importance of continuity of mentorship for student midwives and nurses. Drawing on studies from 2008 to 2018 only eight studies were included, of which seven used qualitative designs. The exception was an online survey by UK researchers who explored the role of preceptors in nursing<sup>22</sup>. Unfortunately, only 10% of the 1600 student nurses invited to participate responded limiting validity of results. Development and psychometric testing of the student survey tool were not reported.

## **AIM**

The current study aimed to develop and test a tool designed to evaluate Bachelor of Midwifery student's perceptions of their clinical learning experiences according to the environment and impact of preceptors on their professional development.

## **METHODS AND PARTICIPANTS**

### **Study context**

The context for this study is a large multi-campus university from south-east Queensland, Australia that offers a Bachelor of Midwifery (BMid) program. Students undertake 2000 hours of clinical practice at an allocated clinical site (or private midwifery practice) for the duration of their program, where they are supported by clinicians including designated preceptor midwives as well as lecturers embedded in the clinical sites.

### **Tool development**

Development and testing of the tool proceeded in three phases and followed guidelines described by Waltz et al. <sup>24</sup> and DeVellis <sup>25</sup>.

#### **Phase 1: Development of items**

According to DeVellis <sup>25</sup>, authors need to determine clearly what is to be measured. We developed items for the draft tool from the literature and data collected as part of a previous qualitative study (now published) exploring students' sense of capability, purpose, resourcefulness, connectedness and identity as a midwife <sup>26,27</sup>. These constructs underpin transformative learning in the academic and clinical components of the BMid program. Where possible the actual words of student participants were used to generate items by the researchers. One set of items reflected students' perceptions of how well their clinical practice environment supported their learning according to capability, purpose and resourcefulness (25 items). The second set targeted the influence of midwife preceptors on students' professional development with a focus on sense of connectedness and identity as a midwife (29 items). The survey form also included other questions directly related to Year level but will not be reported here.

#### **Phase 2: Assessing clarity apparent internal consistency and content validity**

In this phase the clarity, apparent internal consistency and content validity of the draft items were assessed. To achieve this, an expert panel of six midwifery students from second and third years was formed. A six-member expert panel according to Kristjanson et al. <sup>28</sup> is sufficient to assess the content validity of a tool. After ethical approval was granted (NRS/15/14/HREC), an email was sent to students

seeking volunteers. Interested students were asked to contact a member of the research team to negotiate a convenient meeting time. Each panel member was given a three-part evaluation form that addressed clarity, apparent internal consistency, and content validity of draft items. To ensure a common framework for interpretation, the expert raters were provided with accepted definitions of key terms. The expert raters also indicated if any items were redundant or missing. Content validity was deemed to be achieved if five of the six raters approved an item with at least an 83% agreement. Items were revised or deleted if two or more panel members identified problems. Using this criterion two items were reworded. No items were removed. The draft tool had 54 items for testing. A four-point Likert response scale of 1 = strongly disagree to 4 = strongly agree was used.

**Phase 3: Psychometric testing: Assessment of dimensionality, internal consistency reliability and test-retest reliability.**

In Phase 3 a cross-sectional survey generated data used to examine the underlying structure of the instrument, assessed the internal consistency reliability of the items and their stability over time. To recruit a large sample, the survey was administered in two consecutive years with Year 1, 2 and 3 students who had undertaken some clinical placement experience. This phase and its outcomes are described in detail below.

***Sample, recruitment and data collection***

All midwifery students undertaking their BMid in 2017 (n = 190) and 2018 (n = 185) were invited to participate in the pilot-test survey. An initial email sent between October and November in both 2017 and 2018 provided information about the study and a link to the survey. No name related information was required, and completion of the survey implied consent. A total sample of 192 completed surveys was required to achieve a 95% confidence interval with a 5% margin of error <sup>29</sup>.

Open source survey software was chosen for the administration of the survey as it offered the options of emailing out a unique single-use link to each participant and the collection of responses anonymously. A researcher not associated with the BMid program accessed and analysed data. In

2017 a second email with a link to an identical survey was sent to each student four days following completion of the initial survey for test-retest reliability and as a measure of scale stability over time<sup>30</sup>. The four-day interval between test and retest was chosen to prevent contamination of assessments of stability by changes in how the student was feeling about their experiences; has been used by other researchers; and has not been associated with memory recall effect<sup>30</sup>.

### ***Data Analysis***

Inter-item correlation matrices were generated for each section of the survey to identify highly correlated pairs of items. Pairs of items with correlation coefficients above .8 were inspected, and if an item showed substantial conceptual overlap with other items it was removed from the item pool.

Exploratory Factor Analysis was conducted using SPSS Version 23 to assess the underlying structure (dimensionality) of each section of the instrument. After first confirming the data were suitable for factor analysis, principal components analysis was used to extract the factors, followed by oblique rotation of factors using oblimin rotation<sup>31</sup>. The number of factors to be retained was guided by three decision rules: Kaiser's criterion (eigenvalues >1), inspection of the scree plot, and Horn's parallel analysis. Parallel analysis is among the most accurate approach to estimating the number of components<sup>32,33</sup>. The eigenvalues obtained from PCA are compared with those obtained from a randomly generated data set of the same size using software developed by Watkins<sup>34</sup>.

The internal consistency reliability of each scale was calculated using Cronbach's alpha coefficient, with values above .7 considered acceptable<sup>35</sup>. Intraclass correlation coefficients were used to determine stability of the tool over time, using the procedure recommended by Barton and Peat<sup>36</sup>. The two-way mixed effects model using absolute agreement definition in SPSS (Version 23) was calculated for each subscale and scale total.

## **RESULTS**

### **Participant characteristics**

A total of 279 survey forms were received (response rate = 74%). Forms with more than 10% of responses missing (n = 17) were discarded. The sample consisted of 148 (78%) students in 2017 and 114 (62%) students in 2018. In order to combine the two samples, homogeneity needed to be established. Pearson Chi Square correlations showed no significant differences across cohorts in regard to proportion of students from each year level who participated ( $r = .445$ ), preceptor model ( $r = .325$ ), or adherence to preceptor model ( $r = .108$ ) or age (Mann-Whitney U = 723).

Age of participants ranged from 17 to 60 (Mean=30.5, SD=8.47). The sample was evenly spread across year levels, with 88 (33.6%) Year 1, 86 (32.8%) Year 2 and 88 (33.6%) Year 3 students. Nearly half of the sample (45.8%) reported having a designated midwifery preceptor, while others were allocated to either a small (2-3) (n = 73, 27.9%) or large group (4-6) of preceptors (n = 34, 13.0%). Twenty-eight students (10.7%) said they had no designated preceptor. Just over half of the student cohort identified that their preceptor model was adhered to 'all' or 'most' of the time (n = 145, 55.3%). Students were placed in a variety of settings including two metropolitan hospital maternity services, two regional hospital maternity services and three private midwifery practices (as outlined in Table 1).

**Table 1: Participant characteristics (n = 262)**

Characteristic	Number	Percentage
<b>Age of Participants</b>		
24 years and under	76	29
25 – 34 years	92	35.1
35 – 44 years	73	27.9
45 – 55+ years	12	4.6
Total	253	
Missing	9	

**Year Level**

1	88	33.6
2	86	32.8
3	88	33.6
Total	262	

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**Practice Site**

Metropolitan Hospital Maternity Services	221	84.3
Regional Hospital Maternity Service	18	6.9
Private Midwifery Practices	18	6.9
Total	257	
Missing	5	

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**Previous Degree Qualification**

Yes	7	2.7
No	255	97.3
Total	262	

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**Preceptorship model**

A designated preceptor	120	45.8
Small group (2-3)	73	27.9
Large group (4-6)	34	13.0
No designated preceptor	28	10.7
Total	255	
Missing	7	

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## Factor analysis

Prior to conducting principal components analysis on the initial item pool an inter-item correlation matrix was generated for each draft scale. Eight clinical learning environment items were removed, and 14 preceptor items were removed due to very high intercorrelations with other items. For all sections the KMO value exceeded the criterion of .6, and the Bartlett's Test of Sphericity was significant ( $p < .001$ ), supporting the factorability of the items.

### *Clinical Learning Environment Scale*

Principal components analysis was conducted on the 17 remaining items of the Clinical Learning Environment scale. All items loaded above .55 on the first component extracted, indicating a strong underlying dimension. The eigenvalue rule and screeplot suggested a three-factor solution, however Parallel Analysis indicated a single factor solution may be more appropriate. It was decided to explore the two-factor solution further to determine if the factors represented conceptually useful subscales. This solution explained a total of 53.7% of the variance. The correlation between components was .57. Inspection of the loadings in the Pattern Matrix revealed a separation of items focusing on the extent to which the clinical learning environment supports Skill Development (Component 1) and reflects the Philosophy of Midwifery Practice (Component 2). One item (item 6: "A culture aligned with woman centred care") showed relatively low cross loadings on both components. It was removed from the scale, leaving eight items in each component. Results support the use of items from the two components as separate subscales as well as combining their score to produce a single total score.

Student responses were collapsed into disagree/agree (see Table 2). Most students agreed with all items. Three items scored highly on the Skill Development subscale in that the clinical learning environment 'supported learning of midwifery knowledge' (96.2%) (item 1), enabled students to 'work across the full scope of midwifery practice' (92.4%) (item 2), and fostered 'a self-directed approach to my learning' (90.9%) (item 8). Remaining items also scored positively but to a lesser extent. Students agreed that the culture of the clinical learning environment supported 'evidence-based midwifery

*practice*' (78.6%) (item 4); opportunities *'to achieve mandatory clinical requirements'* (80.2%) (item 3); and *'practice self-care strategies'* (77.9%) (item 7). There was less agreement about *'opportunities to voice any concerns I have regarding my clinical placement'* (69.5%) (item 18) and *'staff understand the requirements and capability of each year'* (69.1%) (item 5).

Regarding the Philosophy of Midwifery Practice subscale, over 70% of students scored all eight items positively. Students agreed that their experiences highlighted the *'importance of the midwife in supporting positive birth experience'* (90.8%) (item 17), and reinforced their *'positive influence on the health and well-being of women and their families'* (87%) (item 9). Students agreed they were given new *'insight into the complexity of care a midwife could offer'* (93.5%) (item 14); enabled to *'discover the midwife I want to be'* (94.7%) (item 15); and supported in their *'professional growth'* (91.2%) (item 16). There was less agreement that their clinical learning environment *'promoted the importance of midwifery continuity of care'*; (70.2%) (item 13); aligned with *'midwifery philosophy'* (75.2%) (item 12); and enabled them to feel prepared *'to be a change agent for maternity services reform'* (75.6%) (item 11).

#### *Impact of the Midwifery Preceptor Scale*

Principal components analysis of the remaining 15 items on the Impact of the Midwifery Preceptor Scale revealed only one component with an eigenvalue above 1 explaining 66.9% of the variance. The screeplot suggested a possible three component solution, but this was not supported by parallel

**Table 2: Responses on Clinical Learning Environment Scale items (n = 262)**

My clinical learning environment provides:	Disagree	Agree
	N (%)	(N (%))
<b>Subscale 1: Skill development</b>		
1 Appropriate clinical experience to support my learning of midwifery knowledge	10 (3.8)	252 (96.2)
2 Experiences that enable me to work to my full scope of practice appropriate to my year level	20 (7.6)	242 (92.4)
3 Opportunities to achieve the mandatory clinical requirements	52 (19.8)	210 (80.2)
4 A culture that facilitates evidence-based midwifery practice	56 (21.4)	206 (78.6)
5 Staff that understand the requirements and capabilities of each year level	81 (30.9)	181 (69.1)
7 Opportunities for me to practice self-care strategies (e.g. taking breaks, leaving shift when fatigued)	58 (22.1)	204 (77.9)
8 A self-directed approach to my learning	24 (9.2)	238 (90.9)
18 Opportunities to voice any concerns I have regarding my clinical placement	80 (30.5)	182 (69.5)
<b>Subscale 2: Philosophy of Midwifery Practice</b>		
9 Experiences that reinforce the positive influence I can have on the health and well-being of women and their families	34 (13.0)	228 (87.0)
11 Experiences that prepare me to be a change agent for maternity services reform	64 (24.4)	198 (75.6)
12 Experiences that align with my own midwifery philosophy	65 (24.8)	197 (75.2)
13 Experiences that promote the importance of midwifery continuity of care	78 (29.8)	184 (70.2)
14 Experiences that enable me to develop new insights into the complexity of care that a midwife can offer	17 (6.5)	245 (93.5)
15 Experiences that help me discover the midwife I want to be	14 (5.3)	248 (94.7)

16 Experiences that support my professional growth as a midwife	23 (8.8)	239 (91.2)
17 Experiences that show the importance of the midwife in supporting women to have a positive birth experience	24 (9.2)	238 (90.8)

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analysis. Inspection of the two-component solution suggested a separation of items representing skill development, from those reflecting the philosophy of midwifery practice. Consistent with the results obtained on the Clinical Learning Environment scale, the two components showed a strong correlation ( $r = .79$ ) indicating that it was appropriate to use the subscales separately or combine subscale scores to calculate a total score. Five items with relatively low loadings or cross loadings were removed, resulting in two 5-item subscales (see Table 3).

Student responses on the Impact of the Midwifery Preceptor Scale were grouped according to Skill Development (Component 1) and Philosophy of Midwifery Practice (Component 2). Items were categorised into disagree/agree and presented in Table 3. In the Skill Development subscale, most students agreed their midwifery preceptor developed their sense of clinical capability. These items included support for '*midwifery skill development*' (93.9%) (item 1), '*facilitates confidence*' (88.2%) (item 4), and assists students to '*achieve their clinical requirements*' (90.8%) (item 6). Most students agreed that their midwifery preceptor supported them to '*perform clinical skills*' (92.7%) (item 13). Preceptors' ability to '*understand the academic requirements*' of the program' (item 2) attracted least agreement (69.5%).

In the Skill Development subscale, most students agreed that midwifery preceptors developed their sense of connectedness. These items included creating '*a sense of belonging*' (77.1%) (item 11); '*opportunities for sharing professional best practice*' (80.5%) (item 12); and '*valuing my clinical opinion*' (75.6%) (item 14). Students agreed preceptors supported their sense of resourcefulness through role modelling '*positive self-care practices*' (77.5%) (item 7) and to '*advocate for women's rights*' (77.1%) (item 15).

**Table 3: Responses on the Impact of the Midwifery Preceptor Scale (n = 262)**

In general, my midwifery preceptor	Disagree n (%)	Agree n (%)
<b>Subscale 1: Skill development</b>		
1 Directly supports the development of my midwifery skills	16 (6.1)	246 (93.9)
2 Understands the academic elements of my degree program	80 (30.5)	182 (69.5)
4 Facilitates progressive development of my confidence as a student midwife	31 (11.8)	231 (88.2)
6 Supports me to achieve my clinical requirements	24 (9.2)	238 (90.8)
13 Supports me to perform clinical skills	19 (7.3)	243 (92.7)
<b>Subscale 2: Philosophy of Midwifery Practice</b>		
7 Role models positive self-care practices	59 (22.5)	203 (77.5)
11 Creates a sense of belonging to the organisation	60 (22.9)	202 (77.1)
12 Creates opportunities for sharing professional best practice	51 (19.5)	211 (80.5)
14 Values my clinical opinion	64 (24.4)	198 (75.6)
15 Supports me to advocate for women's rights	60 (22.9)	202 (77.1)

### Scale statistics and reliability

Descriptive statistics were generated for each scale and subscale (see Table 4). All subscales recorded Cronbach alpha values above .85 indicating good internal consistency. The test-retest reliability of the scales was assessed using intraclass correlation coefficients (ICC) comparing scores. All ICC values were above .84 (see Table 4) indicating good temporal stability.

Insert Table 4 about here

### DISCUSSION

The new tool, now referred to as Midwifery Student Evaluation of Practice (MidSTEP), aimed to evaluate midwifery students' clinical learning experiences. MidSTEP is a first, both nationally and internationally. MidSTEP items reflected students' sense of capability, purpose, resourcefulness, connectedness and identity as a midwife which clustered according to the environment and impact of preceptors on their professional development. While the tool requires further psychometric testing with a large diverse sample of student midwives, our analysis revealed the tool can be used in a variety

of ways. The Clinical Learning Environment Scale and Impact of the Midwifery Preceptor Scale could be used separately or in conjunction with each other, depending on the nature of the evaluation. However, the close correlation of the two scales suggests using them in combination offers a more complete evaluation of students' perceptions of their clinical learning program. In line with previous research, facilitation of clinical skill and role development are generally closely linked and often dependant on the influences of both the learning environment and midwifery preceptors <sup>37</sup>. In assessing quality, descriptors of each item could provide opportunities for regular, nuanced reviews of students' clinical learning experiences and benchmarking across practice partner sites.

Continuous quality improvement is an important strategy for educational enhancement. Evaluations of learning experiences have a long history in published literature as a measure of student satisfaction and as a component of tertiary institutions' continuous quality improvement cycles <sup>38,39</sup>. Smith <sup>39</sup> argues data must not only be collected but interpreted and responded to. The MidSTEP tool offers an important step in the quality improvement cycle as a mechanism to collect data. The ease of scoring yields feedback and direction for achieving quality for both universities and their practice partners.

Drawing on the Five Senses of Success (capability, purpose, resourcefulness, connectedness and identity) <sup>26,27</sup> as a framework for item generation contributed to a high level of internal coherence amongst MidSTEP items and scale dimensions (as evidenced by the psychometric analyses). The Five Senses of Success was usefully adapted to midwifery practice and students' aspirations to fulfil their professional role. This was reflected well in the Clinical Learning Environment Scale which captured the extent to which an organisation or private practice provides for skill development (Factor 1) (sense of capability and resourcefulness) and reflects the philosophy of midwifery care (Factor 2) (sense of identity and purpose). The scales measuring student's perceptions of their clinical learning environment and influence of their midwifery preceptors showed good internal consistency reliability and test-retest reliability in this sample.

Clinical learning environment

In general, participating undergraduate midwifery students positively assessed their clinical learning environment as supportive of midwifery knowledge development, self-directed learning, and offering experiences across the full scope of midwifery practice. These items speak to students' sense of capability. Likewise, midwifery students were positive about the clinical environment providing experiences that fostered their understanding of the role and responsibilities of the midwife in making a positive contribution to the health and wellbeing of childbearing women and their families (sense of purpose) and the importance of midwives supporting women to have a positive birth experience (sense of professional practice). Carter et al. <sup>19</sup> in their evaluation of students embedded within continuity of midwifery care models for the duration of their BMid degree published similar findings. Participants in that study valued their authentic learning experiences, applying the midwifery philosophy of care, and learning to work to the full scope of midwifery practice <sup>19</sup>.

#### Midwifery philosophy of care

MidSTEP items incorporated the extent to which students perceived the clinical learning environment reflected the midwifery philosophy of care. The role of the midwife is distinctive, multidimensional and complex, requiring highly developed clinical and decision-making skills <sup>15</sup>. In contrast to other health disciplines, midwifery care is philosophically grounded within a social primary healthcare model where pregnancy and birth are viewed as normal, physiological life events <sup>40</sup>. Midwifery care involves the development and establishment of a relationship with the woman which is grounded in a partnership. The woman-midwife partnership is reciprocal and based on equity, respect, trust, negotiation, and mutuality <sup>16</sup>, where shared decision making is promoted. Within this model the woman's values and preferences are balanced with unbiased information based on the best available evidence<sup>16</sup>. Survey results revealed less agreement about the extent to which continuity of midwifery care was promoted. In Australia, this finding may reflect the slow roll-out of midwifery-led models of care and inability of women to access these models <sup>41</sup>.

#### Skill development

In any health professional program, the clinical practicum emphasises skill development. In the current study, students rated highly opportunities to work to their full scope of midwifery practice. Following the emergence of high-level evidence on the effectiveness of continuity of midwifery care<sup>42</sup> there have been increasing calls for the expansion of midwifery-led models of care. Such developments highlight the immediate necessity for students to be prepared to work to the full scope of midwifery practice. Furthermore, midwives are increasingly required to take the lead role in caring for women with complex needs and collaborate widely with other health practitioners<sup>43,44</sup>. Working in complex environments calls for continuous learning by clinicians. Students in the current study commented favourably on opportunities for self-directed learning. There is a growing emphasis on the need for graduates to be life-long learners<sup>45</sup>.

#### Impact of midwifery preceptors on students' professional development

Engaged and committed preceptors are critical to midwifery student success and positive clinical experiences. In the current study, there was general agreement that preceptors supported students' progressive development of skills, confidence as a midwife, and achievement of clinical requirements. Students positively rated the abilities of preceptors to create a sense of belonging by valuing students' clinical opinion. This included providing opportunities for students to advocate for women's rights and share professional best practice. Our findings are comparable to current literature showing the positive influence of preceptors on students' sense of professional identity, provision of woman-centred care<sup>19,46-48</sup> and decision-making<sup>49</sup>.

Even though all ratings were positive, relatively poorer scoring items related to preceptors' knowledge of program requirements and understanding of the clinical capabilities of each year level in the Bachelor of Midwifery program. From a University perspective this result speaks to the need to perhaps rethink how we work with our partners, the orientation provided to preceptors about the degree program, and ongoing support provided to ensure a contemporary understanding of curriculum content and clinical requirements. More work needs to be undertaken to help clinicians

better understand students' progressive skill development and provide opportunities for increased complexity for senior students. Importantly, students identified a lack of opportunities within the clinical environment to voice any concerns which also requires further consideration.

### **Implications**

Results of this study have implications for clinical education and future research. Inherent in our attempt to develop a valid and reliable tool to evaluate students' perceptions of their clinical learning experiences is the importance of collaboration between education providers and the health services as supported in recent literature<sup>18,51</sup>. The quality of students' clinical learning is critical to the success of any pre-registration midwifery program and MidSTEP can provide valuable insights into areas for improvement. In addition, the scales provide a platform for consistency in data collection enabling comparison of results over time at individual practice sites, between sites, and between programs. Although the tool was found to be clear, succinct, and internally consistent, further psychometric testing of the MidSTEP tool with large, diverse populations is needed to confirm the results presented in this paper. It is likely that the tool may not be relevant to Postgraduate Diploma midwifery students and testing with this student cohort is required. Future work also needs to determine the extent to which the tool is culturally appropriate. Findings of this ongoing evaluative work should continue to inform further changes/improvements to the design and delivery of the clinical education program.

### **Strengths and Limitations**

This paper reports on the first study to specifically evaluate students' perceptions of their clinical learning experiences according to the environment and impact of preceptors on their professional development. The two scales revealed promising psychometric properties. Another potential limitation relates to combining surveys over a 2-year period to create a larger sample which may have introduced unanticipated bias. However, the overall response rate of 74% was good, our analysis revealed no significant differences between cohorts, and to the best of our knowledge no major changes occurred at participating clinical sites. Recruiting students from one undergraduate midwifery

program may also limit the generalisability of results, but diversity of clinical sites and preceptorship models were a strength. The lack of an existing measure against which the MidSTEP tool may have been assessed was also a limitation, however, our rigorous approach to tool development and testing may have mitigated possible effects giving reassurance in the findings.

## **CONCLUSION**

This study developed and conducted a preliminary psychometric evaluation of a tool that can be used to evaluate students' perceptions of their clinical learning experiences. The two scales related to perceptions of the Clinical Learning Environment and Impact of the Midwifery Preceptors can be used separately or together. Importantly, the study highlights the positive effects of preceptors on students' professional development. Students' responses on the tool can provide universities and their practice partners with valuable feedback and guidance on how best to provide midwifery students with quality clinical education.

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