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Senior midwives' perspectives on the transition experience of newly graduated undergraduate midwives in China: a qualitative study

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Abstract

Introduction Newly graduated (NG) midwives face various challenges during their transition from school to clinical practice, which can impact their long-term professional satisfaction and development. In China, there are currently no formal support programs for NG midwives. Senior midwives, as direct supervisors and mentors of NG midwives, hold valuable insights and recommendations that could inform the development of NG midwives training programmes in clinical practice, However, these perspectives remain largely underexplored. To address this gap, this study aims to explore senior midwives' perspectives on the transition experiences of NG midwives and their suggestions to support better adaptation to clinical practice, contributing to improvements in midwifery training systems.

Methods Senior midwives ($n=23$) from seven tertiary teaching hospitals in Guangzhou, Dongguan and Shantou participated in this study using a purposive and snowball sampling approach. Focus group interviews were conducted between February 2023 and December 2023. Data were analysed thematically using NVivo 11.

Results This study explored senior midwives' perspectives and suggestions regarding the transition experiences of NG midwives, and identified four major themes: professional quality, maternal and newborn care knowledge and skills, public health care & integrative competency, and career development and professional identity. For professional quality, NG midwives were considered to require a deeper understanding of natural birth, the ability to build trusting relationships with women, provide emotional support, and establish appropriate emotional boundaries. In terms of improving NG midwives' knowledge and skills in maternal and newborn care, senior midwives emphasized the need to expand NG midwives' professional knowledge and effectively integrate theoretical knowledge with practice through diverse learning approaches. In the area of public health care and integrative competency, NG midwives should be equipped to prevent and manage occupational exposure and possess cooperation ability. Senior midwives suggested that rational allocation of human resources could help reduce exposure risks, facilitate teamwork, and support the integration of NG midwives into the clinical environment. In addition, senior midwives generally

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expressed concern and expectations for the career development of NG midwives, indicating that clear career plan during the transition period could enhance their sense of satisfaction and professional belonging, thus promoting the formation of their professional identity and retention.

Conclusion The transition period is a critical phase in the career of NG midwives. Currently, NG undergraduate midwives are not fully equipped with the competency and supportive environment needed for a smooth transition. Recognizing the significance of this transition is essential for training and retaining qualified practitioners. The perspectives and suggestions of senior midwives provide valuable insights into this period, complementing existing research on the transition of NG midwives. It is imperative to refine undergraduate midwifery education systems and create stable professional environments to ensure the sustained and robust development of a qualified midwifery workforce.

Keywords Midwife, Transition period, Undergraduate, Newly graduated

Introduction

The transition period for newly graduated (NG) midwives to integrate into social and professional practice within the hospital environment is challenging [1]. This marks a turning point from being a midwifery student to assuming the professional role of a practicing midwife. During this transition, graduates frequently face conflicts between educational and professional values [2], making the process stressful, frustrating, and demotivating [3], experience transition shock [4], leading to burnout and consequently increased turnover, and negatively impact graduates' long-term professional satisfaction and career development [5].

In recent years, increasing attention has been paid to the professional transition of health care graduates. A review covering 13 studies indicated that adequate transition support can help novice nurses manage stress, enhance the likelihood of a successful transition, and promote retention in the nursing workforce [6]. However, existing researches have primarily focused on the transition of newly graduated nurses, with limited exploration of the midwives [7, 8]. It is worth noting that obstetric nurses and midwives, who provide direct care for women and newborns, may experience higher levels of work stress [9–11]. Therefore, it is necessary to further investigate the challenges faced by NG midwives during the transition to practice, as well as strategies for improving their transition experience.

The transition theory and its development

Transition to practice, referring to a dynamic adaptation process of newly graduated health care personnel from the educational environment to the clinical practice setting. Kramer's work "Reality Shock: Why Nurses Leave Nursing" first introduced the concept of transition into nursing, pointing out the transition problem of newly graduated registered nurses [12], and used the reality shock theory to describe the sociocultural, physical and emotional responses that nursing graduates will experience in the new practical experience [13]. Subsequent theories have expanded upon this concept, including Benner's novice to expert theory [14] and Bridges transition theory [15]. Influenced by the above three theories, Duchscher developed a theoretical framework including two components: the transition stage model and the transition shock model [16], which aligns more closely with the challenges encountered by contemporary graduates [17].

Through Duchscher's research, the term "transition shock" was developed [18], and the transition experience of graduates was systematically described through four elements in the transition shock model: emotional, physical, sociocultural and intellectual elements [19]. On the emotional and physical aspects, graduates often report feeling stressed and exhausted, decreased self-confidence, and difficulty maintaining self-care [20]. On the sociocultural aspect, graduates may encounter discrepancies between the philosophies and models of care practiced in clinical settings and those learned during their education, which may lead to the unclear of role [21]. On the intellectual aspect, graduates may perceive clinical problems as exceeding their knowledge and skill levels, feelings overwhelmed, and try to overcome knowledge deficits by remaining silent, recording information for subsequent review, and "bluffing" their way through answers to questions [6]. These four elements provide a comprehensive summary of the graduates' transition experiences reported in current studies, and reveal that graduates are facing multiple challenges during the transition. At the same time, few researches explored the perspectives of other key stakeholders involved in the transition process, especially clinical supervisors and mentors [22].

Transition challenges of NG midwives in China

Meanwhile, according to previous research, newly graduated undergraduate midwives in China may face additional challenges due to the specific context. Historically, midwifery in China has been integrated into nursing education rather than recognised as a distinct profession [23]. Whether it is secondary school, college,

or undergraduate level of midwife education, although the training mode is different from the general nursing students, midwifery graduates are still only identified as nursing students receiving midwifery training. There is a lack of independent midwife professional degree certification. In a more recent time, the formal undergraduate midwifery education in China has only started, with midwifery first listed as an independent discipline in the Ministry of Education's undergraduate program catalogue in 2017 [24]. After four years of standardized undergraduate midwifery training, the first cohort of undergraduate midwives only entered clinical practice in 2021.

On the other hand, regionally, the transition period differs between countries. In Canada, the Netherlands, and New Zealand, NG midwives are recognized as autonomous practitioners upon registration and typically join midwifery group practices after registration [1]. While in China, NG midwives are first required to obtain the Nurse Practitioner's License, followed by several years of supervised obstetric practice. They must then pass further assessments and obtain the "Maternal and newborn care technical examination certificate" to become formally certified midwives [25, 26]. Furthermore, the requisite qualifications for midwifery demonstrate considerable variation across different provinces or districts. For instance, in Gansu Province, hospitals must organize internal training for new staffs, and then staffs need to pass the provincial qualification assessment [27]. Whereas in Shanghai, practice licenses are issued and verified by the district (or county) health bureau [28]. When midwifery students' internship and employment regions differ, these inconsistent standards may lead to certification problems. Finally, while NG midwives in other countries are supported during their transition from students to certified practitioners [29–31], no formal support programs currently exist in China.

Shifts in fertility policies and maternal demographics have also created new demands for midwifery care. Over the past decade, the relaxation of policies such as the second and third child policy has unleashed accumulated fertility intentions, leading to an increase in proportion of older, high-risk pregnancies, and caesarean Sects [32, 33]. Training midwives with higher education levels and specialized skills has become an essential response to the evolving economic and social environment [34]. The first year of clinical practice is a demanding period for NG midwives [35]. Supporting newly graduated undergraduate midwives through their transition period and helping them integrate into clinical practice is critical for ensuring the quality and stability of Chinese midwifery.

Research aim

To address the challenges of midwifery training and workforce retention, formal education plays a critical role in enhancing the professionalization of graduates [36–38]. In the context of promoting medical-education collaboration in China, collaboration between hospitals and universities in healthcare workforce training has strengthened [39]. As an integral part of the healthcare system, many senior midwives also serve as professional course instructors for midwifery students, and are deeply involved in their academic and clinical training. As direct supervisors and mentors in clinical practice, senior midwives are able to observe NG midwives' long-term adaptation process, identify critical challenges, and evaluate competencies based on professional standards, which are essential for developing training policies and transition support strategies for NG midwives. Existing studies have explored the new induction experiences of newly employed undergraduate midwives to clinical practice in China, showing gaps between practice and ideals, along with a desire for diverse career development and standardized profession management [40], including independent training and regulatory system, distinct certification, registration, and promotion mechanisms separate from nursing [41, 42]. However, such studies primarily reflect the perspectives of NG midwives, lacking systematic observations and objective evaluations from senior midwives. Although the perspectives of junior staff—those working alongside NG midwives—may also provide valuable insights, this study focuses on optimizing the professional transition of NG midwives. Given their pivotal role in guiding and assessing NG midwives, senior midwives offer a key perspective, therefore this study adopts the viewpoint of senior midwives as its primary focus.

This study was conceived within the contemporary context of midwifery in China. As mentioned earlier, undergraduate midwifery education in China is still in its early stages, and support for NG midwives is not yet complete. Therefore, the aim of this study is to explore senior midwives' perspectives on the transition of newly graduated undergraduate midwives and their suggestions for better adaptation to clinical practice, providing insights to further improve the midwifery training system.

Methods

Research design

This study is grounded in an interpretivist paradigm, which posits that reality is not a single, objective entity but is socially constructed through the interactions and perceptions of individuals, and the experiences and views of participants are essential for understanding the phenomenon under investigation [43]. This study employed a descriptive qualitative design based on inductive content analysis. This approach allows participants to express their views and recommendations regarding the professional transition of NG midwives from a factual

perspective [44]. The study was reported following the Standards for Reporting Qualitative Research (SRQR) checklist [45]. Clinical trial number: not applicable.

Guiding framework

In this study, the Essential Competencies for Three Grades of Midwives in China (See Appendix AB) was selected as the guiding framework. The International Confederation of Midwives (ICM) introduced the concept of Core Competencies for Midwives, defined as "a delineation of the construct of midwifery practice from the basic list of knowledge and skills". These core competencies outline the professional roles and knowledge requirements of midwives, encompassing both comprehensive and caregiving abilities. Many countries and regions, including Hong Kong, have adopted these competencies as the basic requirements for midwifery graduates [46, 47]. Chinese scholars have localized and categorized the competencies into graded levels, which are aligned with the career progression of midwives "from novice to expert" [17, 48]. For instance, the "Core Competencies for Basic Midwifery Practice" issued by American College of Nurse-Midwives (ACNM) requires midwives to be able to identify and manage postpartum depression and its impact on newborns, including making referrals when necessary. However, in the Essential Competencies for Three Grades of Midwives in China, considering the trans-disciplinary characteristics of this competency, it is classified as the ability requirement of expert midwives, and there is no requirement for junior midwives (novice and advanced beginner) [46]. This graded classification system reduces the competency requirements for NG midwives, helping to alleviate the pressure they face in meeting clinical demands.

The essential competencies adopted the philosophy of ICM core competencies and are structured reference to standards in Britain, America, Canada and Hong Kong of China, supplemented by professional and ethical practice and professional responsibilities. The framework defines seven domains of knowledge and skills and categorized midwives into three levels: junior (novice and advanced beginner), senior (competent and proficient), and expert (without specific qualifications) [46]. In this study, we grouped these domains into three categories: "professional quality", "maternal and newborn care knowledge and skills", and "public health care & integrative competency". This research focused solely on the competencies required for junior midwives, requirements for senior and expert midwives were excluded. This approach facilitated the analysis of the competences needed for NG midwives to adapt to clinical practice.

Research setting

The university to which the researchers are affiliated is one of the pioneering institutions approved by the National Ministry of Education for midwifery student training and one of the first four universities in 2017 to offer undergraduate midwifery programs [49]. As affiliated teaching hospitals of this university, three hospitals in Guangzhou (including both general hospitals and maternity-specialized hospitals) were selected to represent regions with more concentrated medical resources. Additionally, to incorporate perspectives from midwives in less medical resource-intensive areas, we specifically selected four hospitals of varying types (including general hospitals, traditional Chinese medicine hospitals, and maternity-specialized hospitals) from teaching hospitals in cities surrounding Guangzhou that have adopted the university's online midwifery courses.

Data collection

Through contact with hospital midwifery management personnel, we obtained their support and acquired the contact information of eligible senior midwives. Using a purposive and snowball sampling approach (i.e. identify & seek volunteers); participants were recruited. Participants were senior midwives currently engaged in clinical practice or education; those who had been out of either field for more than five years were excluded. Eligible participants were contacted via text message or phone call, and those who agreed to participate were invited to join focus group interviews.

Five focus group interviews were conducted, each with four to nine senior midwives. Focus group interviews were conducted until data saturation. The interviews framework was constructed based on the requirements for junior midwives outlined in the Essential Competencies for Three Grades of Midwives in China (See Appendix C). The interviews were conducted by the second and third authors, both professionally trained in qualitative research. The second author, a PhD in midwifery, is also the head of the midwifery department and the main faculty member in the Midwifery programme at the university, with extensive clinical and academic experience in midwifery education and practice. She is responsible for moderating the questions and inviting all participants to participate in discussion. The third author, a graduate student specializing in midwifery, had received formal undergraduate midwifery education and was responsible for observing, recording, and taking notes. Transcriptions were completed verbatim within 24 h of each interview. Transcriptions were cross verified by two researchers and returned to participants for validation. In the fourth and fifth focus group interviews, categories and themes from the first analysis were added at the end of the interview session. Participants were asked if

they recognized themselves in the specific categories and themes. As no new information emerged from the fourth and fifth interviews, data saturation was considered to have been reached.

Data analysis

Data management and thematic analysis were conducted using Nvivo 11 [50]. After three focus group interviews, two researchers (HLH, YZ) conducted a first analysis. They independently coded the data and both created interpretive codes, identifying categories for similar codes. The researchers then compared and discussed these categories, resolving disagreements through consultation. Subsequently, the identified categories were labelled based on the categorised Essential Competencies for Three Grades of Midwives in China, which includes "professional quality", "maternal and newborn care knowledge and skills", and "public health care & integrative competency". Additional themes were added when labels did not match the themes. After focus group interviews four and five, the researchers coded, categorized, and labelled the data from the fourth and the fifth interview transcripts as previous interviews.

Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki [51], ensuring the privacy and confidentiality of participants' personal information. Participants were informed of their right to refuse participation or withdraw from the study at any time prior to the focus group discussion. Prior to the interviews, participants received both verbal and written explanations about the study, and all provided written informed consent. Ethical approval was gained from the ethics committee of the researchers' affiliated university (NFYKDX003-[2024] No.10). As we reported to the ethics committee, all participants received a Bluetooth headset as a token of appreciation for their participation after completing the interview.

Table 1 Characteristics of participates

Number	Age (years)	Professional Title	Service years
A1	56	Chief Nurse	39
A2	53	Chief Nurse	34
A3	66	Chief Nurse	35
A4	60	Chief Nurse	39
A5	58	Chief Nurse	35
A6	46	Deputy Chief Nurse	25
A7	42	Deputy Chief Nurse	24
A8	43	Deputy Chief Nurse	23
A9	70	Chief Nurse	48
A10	51	Chief Nurse	32
A11	52	Deputy Chief Nurse	33
A12	49	Deputy Chief Nurse	30
A13	53	Supervising Nurse	31
A14	54	Deputy Chief Nurse	34
A15	49	Supervising Nurse	30
A16	58	Supervising Nurse	30
A17	51	Supervising Nurse	31
A18	51	Deputy Chief Nurse	31
A19	49	Supervising Nurse	31
A20	53	Deputy Chief Nurse	34
A21	51	Deputy Chief Nurse	30
A22	55	Supervising Nurse	35
A23	49	Chief Nurse	30

Trustworthiness

Credibility, *transferability*, *dependability*, and *confirmability* strategies were enacted to demonstrate trustworthiness of the findings [52]. For *credibility*, the researchers spent a significant amount of time in the data and transcripts, and the processed data were returned to participants for verification. To enact *transferability*, we provided detailed contextual information and rich descriptions, including the study background, participant characteristics, and data collection and analysis processes. Independent observers were consulted to assess the *dependability* of the findings. Two researchers with expertise in qualitative research methods and undergraduate midwifery education, who were not part of the study team, were invited as external observers. The consistency of the results was validated by this external review. To ensure *confirmability* of the study, senior midwives from different cities (Guangzhou, Dongguan and Shantou) and with varying professional titles were selected as part of the triangulation technique. Additionally, coding decisions and modifications to the coding manual were continuously reviewed. Discrepancies were resolved through discussions until a final consensus was reached among all authors.

Results

Basic information of participants

The five focus group interviews lasted between 39 and 83 min and were conducted from February to December 2023. A total of 23 female senior midwives from seven tertiary hospitals in three districts, with an average age of 53 years (53.00 SD 6.47), participated in the focus group interviews (Table 1). All interviewees had the title of supervising nurse or above. The average service years was 31.04 years (31.04 SD 5.62).

Coding results

The results were categorized and labelled using the categorised Essential Competencies for Three Grades of Midwives in China, including: (1) professional quality; (2) maternal and newborn care knowledge and skills; (3) public health care & integrative competency; and an

Table 2 Theme analysis of perspectives of senior midwives on the transition experience of NG midwives

Theme	Sub-theme	Key Points
Professional quality	Understanding of natural birth	NG midwives had limited understanding of natural birth, lacking confidence
	Building Trusting Relationships	Importance and ways of establishing trust relationship with pregnant women
	Providing Emotional Support	Fostering the ability of NG midwives to provide emotional support
	Setting Emotional Boundaries	Set emotional boundaries when facing negative emotions
Knowledge and skills	Learning content	Expanding knowledge requirements
	Learning approaches	Enhancing practical learning approaches
Public health care & integrative competency	Occupational exposure	Risk and prevention of occupational exposure
	Cooperation ability	The active adjustment of NG midwives and the construction of supportive working environment
Career development and professional identity	Career development environment	Current employment trends and future possibilities
	Career planning and professional identity	Early career planning contributes to the development of professional identity

additional theme: (4) professional identity and career development. Each themes encompasses several subthemes (Table 2).

Professional quality

Understanding of natural birth

Professional quality is the foundation of all competencies. It requires midwives to believe in the value of natural birth and to advocate, promote and support natural childbirth [46]. However, for NG midwives, the unpredictability of birth times and the high proportion of theoretical education in undergraduate midwifery curricula often result in limited clinical experience of participating in actual birth scenarios at the student stage and a relatively weak understanding of natural birth. A senior midwife said: *"During probation, each group of students only comes for one day. Sometimes, if they are unlucky, all we can do is show them around the obstetrics ward." (A20)* During the transition period, when NG midwives are expected to assume the role of caregivers for women, there is often a concern about their insufficient ability to facilitate natural birth and experience a decrease in self-confidence. Another senior midwife said: *"You'll find that she (NG midwife) scores high on the entrance exam, but her hands still tremble when facing a postpartum massive hemorrhage." (A12).*

At the same time, senior midwives pointed out that although undergraduate midwifery students receive midwife-led training on managing complicated births, the dominant role of doctors in clinical practice may contribute to difficulties in adaptation and self-doubt among new graduates. This may be because NG midwives interpret the doctor's takeover as a failure on their part in managing birth process. When medical interventions conflict with decisions of natural childbirth, it can also impair their confidence in facilitating natural birth. A senior midwife shared, *"In our department, doctors still take over in most critical situations, such as fundal pressure or forceps birth… Sometimes, they (NG midwives) are unsure whether they should follow the doctor's instructions." (A5).*

Building trusting relationships

Due to the unpredictability of childbirth, both the mother and the midwife bear significant risks during birth. Collaboration between the midwife and the mother becomes more effective when trust relationship is established. A senior midwife noted: *"When she is in the most painful moment, you need to make her believe that you can help her." (A7)* When the lack of confidence is reflected in NG midwives' communication, it may affect the establishment of trust with mothers. Another senior midwife commented: *"They have practiced perineal suturing many times on models, but they don't know how to tell the woman that there might be a tear." (A11)* By comparing the experiences of NG midwives with their own experiences, senior midwives observed that current undergraduate midwives had more systematic theoretical knowledge and a stronger sense of individuality. However, certain personal traits may hinder the establishment of trust with mothers during the immature transition phase. A senior midwife said: *"Newly graduated midwives today are nothing like my generation, the gap is huge! They have a stronger work attitude, better skills, and their own ideas. There's a lot more individuality… but sometimes, you need to let go of yourself and approach clinical work with a calm and open mind." (A8)* Another senior midwife added: *"I think that's the biggest challenge for this generation of midwives. You might encounter all kinds of patients, but you need to treat each one with the same attitude." (A9).*

Providing emotional support

Midwives are not only healthcare providers but also emotional supporters for mothers. Senior midwives believe that this professional quality cannot be fully developed through clinical experiences alone. It should be consciously nurtured during the education phase of midwifery students. A senior midwife pointed out: *"We often say 'To cure sometimes, to comfort always', humanistic care should be a compulsory course." (A3).*

Setting emotional boundaries

While giving care, midwives experience emotional drain in their work. For NG midwives in a turbulent transition phase, they are prone to emotional fluctuations when faced with unexpected situations, feeling self-blame and powerless. One senior midwife recalled her early clinical experience: *"When I first started working, there was a mother pregnant with quadruplets, due to a sudden drop in temperature, she developed heart failure… That feeling… I couldn't get out of the shadow for a whole week." (A5).*

Senior midwives encourage that NG midwives set emotional boundaries when facing such situations to protect their emotional well-being. This helps prevent excessive emotional involvement, which can lead to heavy psychological burdens and impact professional performance. A senior midwife mentioned: *"When bad feelings come, you need to learn to relax your mind and 'reset'. Sometimes, overthinking can actually lead you into blind spots." (A3)* Additionally, senior midwives with a background as dedicated midwifery educators emphasized the importance of external support, such as mental health programs and regular counselling services, in enhancing the psychological resilience of midwifery students: *"Midwives work under high pressure, and offering mental health courses and organizing counselling sessions can help students improve their psychological resilience." (A23).*

Maternal and newborn care knowledge and skills

Learning content

Senior midwives compared past and current requirements for midwives, noting evolution in professional scope and midwifery philosophy. These changes have placed greater demands on the healthcare knowledge and skills of NG midwives. A senior midwife said: *"The older midwives used to say we just deliver babies, but it's not like that anymore. Now, we need to learn everything." (A5)* However, undergraduate midwifery education has, to some extent, retained previous training models and has not been fully adapted to meet current clinical demands and establish an updated standard. Additionally, the promotion and practical implementation of new standards have also experienced delays. This mismatch between the increased clinical demands and the lag in educational system updates has resulted in structural deficiencies in the clinical practice competencies of NG midwives, thereby affecting their adaptation. One senior midwife noted: *"Young people today have higher expectations for childbirth—not only safety but also the overall birth experience. If you hold yourself to the standards we had back then, it won't be enough to meet the demands of today's situation." (A13).*

Some senior midwives believe that birth process has the attributes of general practice, and modern midwifery practice not only focuses on the physiological process but also involves life cycle health management. This requires NG midwives to broaden their expertise areas such as medicine, nursing, psychological support, and rehabilitation. Different from consensus on the essential competency, participants from higher-level hospitals offered additional requirements on knowledge and skills for NG midwives. This may be due to more developed midwifery systems and greater responsibilities in regions with better medical resources: *"I see childbirth as part of general practice because pregnant women are not only giving birth but may also experience various diseases. Obstetrics is divided into physiological and pathological obstetrics, which requires them (NG midwives) to have systematic training." (A9).*

Learning approaches

Most senior midwives agreed that integrating theoretical knowledge with clinical practice is an effective learning approach to help students internalize what they have learned. For example, one senior midwife noted: *"Some of basic knowledge should be combined with clinical practice. Like pelvic structure, nerves, blood vessels… so you can really understand the content." (A15)* Continuous repetition during the practice process also helps NG midwives establish a sense of order in their routines, facilitating their adaptation to the clinical environment. As one experienced midwife explained: *"When you're learning new things, it's normal to feel unfamiliar, so you just need to keep practicing. I used to practice tying knots with a thread tied to the bed back then… Once you get the hang of it, you won't panic." (A1).*

By comparing the differences in learning environments, senior midwives said current education resources are more abundant and diverse. Among them, simulation-based teaching is the most significant changes. One midwife commented: *"When we graduated, our teachers told us that every doctor climbs up on the shoulders of mistakes and accidents. Now, those simulation-based teachings—postpartum hemorrhage, shoulder dystocia… all can be learned through simulations." (A4)* Role-playing and peer activities are also methods frequently used by senior midwives to train midwifery students and NG midwives. A senior midwife shared: *"If there are*

three students, I would form a small team—one as the patient, another as the referee, and the third is responsible for assessment. They need to explain how they assess from head to toe. I use this way to train newly hired midwives." (A8) In addition to self-directed learning, senior midwives also emphasized the importance of utilizing university courses resources and instructor guidance. A senior midwife who is also responsible for course teaching said: *"Many operations are hard to learn just from books; they need to be taught by instructors. They should take advantage of their time in school to practice on models, thus feeling confident when entering clinical practice." (A1).*

Public health care & integrative competency

Occupational exposure

In terms of public health care, senior midwives mentioned the issue of occupational exposure. During birth process, midwives face various exposure risks, such as amniotic fluid splashes and needlestick injuries. Occupational exposure not only causes physical harm to NG midwives but also leads to psychological stress and fear. A senior midwife shared an example: *"A few years ago, a just graduated midwife at our hospital met a mother with HIV. The mother knew she was sick but didn't inform us or bring her medical records… The midwife was splashed with amniotic fluid. The hospital provided her three months of medication." (A5)* Inadequate proficiency in skills and lack of awareness of occupational protection are the main reasons for NG midwives experiencing occupational exposure. Standardized training in healthcare institutions is key to reducing the risk of occupational exposure. A senior midwife said: *"We have been strengthening training. For regulatory trainees or interns, everyone who joins the department must receive both theoretical and practical training." (A16)* As main managers in midwifery clinical practice, senior midwives pointed out that adjusting working hours and task distribution can reduce the risk of occupational exposure among NG midwives due to overwork and mental stress. By optimizing the allocation of human resources, experienced doctors or midwives can act as "informal supervisors" for graduates during their clinical practice and ensure their safety. A senior midwife noted: *"We always make sure junior midwives are paired with senior midwives in shifts. Each shift also has an on-call doctor available for them to contact immediately." (A3).*

Cooperation ability

As NG midwives are just in the transition period from academic learning to clinical practice, their scope of clinical responsibility remains relatively limited. Therefore, senior midwives' concerns about their integrative competency centred on how well NG midwives can integrate into the practical working environment and establish effective interpersonal and interprofessional collaborations with healthcare team members. In collaboration with clinical colleagues, senior midwives with longer service years mentioned that midwifery skills and knowledge were traditionally passed down through an "apprenticeship" model. Under this system, NG midwives developed closer emotional connections with senior midwives, which facilitated greater workplace support and thus achieve independence more quickly. As one senior midwife mentioned: *"I used to follow my teacher when I was an intern. Whenever there was a birth, I would rush over to observe… You needed to show your mentor your passion. After that, I was able to handle birth process on my own within a week." (A1)* However, with clinical responsibility now specialized for individuals and shift schedules becoming irregular, NG midwives can no longer rely solely on the guidance of specific experienced colleagues. Instead, they must build collaborative professional relationships with a broader range of healthcare personnel. One senior midwife said: *"It is important to communicate with different doctors when you are on a shift with them, it is also important to know how to communicate with senior colleagues when you don't know them very well." (A17)* In the early stages of clinical practice, learning from experienced colleagues is necessary. As NG midwives gradually adapt, they will find their roles and value within the team, thereby enhancing the overall team capacity. A senior midwife emphasized: *"At the beginning, it's necessary to learn from others and stay humble to integrate into the clinic. Once they become familiar with working environment, they can gradually show their strengths, which in turn improves our service quality." (A7).*

The importance of cooperation ability is also reflected in the avoidance of interpersonal conflicts. A senior midwife responsible for clinical midwifery management mentioned that the dominant role of doctors in clinical decision-making and department management may result in NG midwives bearing a disproportionate of medical responsibility when facing medical disputes: *"Midwives often find themselves in conflict with doctors and nurses, and they are frequently blamed when adverse events occur. For example, in the department, the doctor-in-charge has the final say, and their primary focus is on medical treatment. Standing in his position, it is difficult to train a doctor, but it is relatively easy to train a midwife." (A1)* Given this structural issue, at the level of midwives themselves, conflicts and injustice can be mitigated through active communication, fostering cooperation, and building strong professional relationships. A senior midwife stated: *"When facing unfair situations, you have to recognize that this is a social phenomenon, not an individual one. You should approach it with a normal heart, be familiar with each doctor's operating habits,*

communicate in time, cooperate well, and maintain good relationships." (A6) However, the emphasis of senior midwives on the systemic environment rather than individual reasons may also imply an unoptimistic outlook on the likelihood of fundamental institutional changes in the short term.

In addition, senior midwives felt that NG midwives' desire for independence was as strong as for support. In enhancing their cooperative capacity, in addition to the proactive adaptation by the NG midwives themselves, there was also a need to provide them with a space where they can seek help, allowing newcomers in transition to build confidence and skills through collaborative efforts. A senior midwife noted: *"Actually, as undergraduates, they really know a lot, and they can handle many situations on their own. But sometimes you realize they just need a bit more confidence." (A10)* Another senior midwife added: *"As a head midwife, I need to coordinate my team. I make sure new midwives, core staff, and older midwives are grouped together in a shift, so everyone can find and play to their strengths." (A8).*

Professional identity and career development

Career development environment

Senior midwives also discussed several contextual issues that are significant to the role and scope of midwifery practice. While these issues are not part of the essential competency for midwives, they still impact the clinical practice of NG midwives. Senior midwives from non-medical resource concentration areas and non-specialized maternity hospitals pointed out a current dilemma, including the high demand for undergraduate midwives and the uneven distribution of midwifery personnel: *"Our department has always wanted an undergraduate midwife, but since we're not a specialized maternity hospital and have relatively few births, many of them won't choose us." (A7)* This imbalance may be attributed to the lower number of pregnant women in non-specialized maternity hospitals, which restricts exposure to diverse birth scenarios and clinical practice opportunities, thereby limiting NG midwives' ability to gain experience, develop skills, and advance professionally early in their careers. Additionally, policy changes tend to align more with the marketization of the healthcare system rather than the professional development of practitioners. A senior midwife pointed out: *"The national reform starts now, the healthcare system including nurses and midwives, the life-long employment was cancelled, all newly hired staff are no longer given permanent positions." (A1)* The reduction of long-term occupational security has increased career uncertainty for NG midwives. Declining birth rates and the closure of obstetric departments in some hospitals have led to anxiety among NG midwives about the increased risk of unemployment, leading new graduates to choose institutions that offer greater career stability.

However, some senior midwives also felt that current employment trends provided an opportunity to innovate and implement better quality models of midwifery practice. A senior midwife noted: *"Some smaller hospitals have already closed obstetric departments, affecting midwives' work environment and employment prospects. However, this may also drive healthcare institutions to improve service quality and optimize the allocation of professional resources. For example, implementing high-quality, continuous midwifery care models, etc. so as to create better working conditions and more opportunities for midwives." (A23)* At the same time, despite the challenges faced by midwifery amid broader healthcare system changes, most senior midwives believe that midwifery profession has made significant progress and are optimistic regarding its future and saw the graduation of midwifery undergraduates and their entry into clinical practice as proof of this progress. Senior midwives perceive the higher starting point of undergraduate NG midwives provides them a certain advantage in clinical practice. This expectation motivates senior midwives to offer increased attention and support to the new graduates, which helps foster a sense of belonging and accelerates their transition into their professional roles. A senior midwife said: *"Back when the first batch of undergraduate midwives graduated in Guangdong, our hospital hired a few, and we felt like we had struck gold… I kept thinking about how to train them well and help them grow quickly." (A8).*

Career planning and professional identity

For NG midwives, this period is not only an unsettling transition but also a confusing early stage of career development. Senior midwives believed that NG midwives need to identify their professional strengths in midwifery and clarify their career roles. This is a critical step in career planning. A senior midwife gave an example: *"You first need to find your role as a midwife, and when you do, you find your prospects… For example, I'm particularly good at hypnosis, which no one else is. Find your direction and follow it, and you'll find a world of your own." (A2)* Such career planning contributes to enhancing NG midwives' sense of professional achievement and satisfaction. One senior midwife noted: *"You need to understand what your strengths are… When you can do something others can't, you'll genuinely feel, 'This is my value.'" (A3)* The sense of achievement can have a lasting positive impact on midwives' long-term professional identity and satisfaction. Once NG midwives determine they can work within a framework compatible with their values and beliefs, being able to draw on the emotional positives of the role encourages graduates to continue in midwifery.

A senior midwife shared: *"By the time I was about to graduate, my parent thought it was too hard and asked me to change my job. But I said no, I said I wanted to be a midwife, so I stayed in the labour ward ever since." (A1).*

Discussion

This study is the first to describe the perspectives and suggestions of senior midwives in China regarding the transition of NG midwives. Midwifery in China has undergone a gradual transformation from the beginning, development, unclear positioning, to the subordination to nursing period, with midwifery lagging behind nursing in the relatively recent past policy development [53]. With the comprehensive reform of China's healthcare system during the *Twelfth Five-Year Plan* (2011–2015) [54], the government has paid more attention to reproductive health services in recent years [55, 56]. Against this policy backdrop, it is a favorable time for the development of midwifery-specific policies, which will promote the development of midwifery. The participants have an average of over 30 years of serving experience in midwifery practice and education, having witnessed various stages of the transformation. Their insights offer a broader perspective on the professional adaptation of NG midwives, supplementing existing research on their transition period [57, 58]. As direct supervisors and mentors in clinical practice, senior midwives' suggestions provide practical evidence for shaping and implementing midwifery training policies, and help to the sustainable and stable development of human resources in midwifery.

In our findings, senior midwives illustrated their perspectives of the transition experience for NG midwives in four aspects: professional quality; maternal and newborn care knowledge and skills; public health care & integrative competency; and professional identity and career development. Senior midwives agreed that transition period was a challenging phase for NG midwives. This is consistent with previous research that the transition from student to practicing midwife is a significant shift that all NG midwives have to make at the start of their careers. Regardless of how well-prepared they are, this transition inevitably involves a period of confusion and adjustment [59, 60]. Across these four aspects, both the active adjustment of NG midwives and the support of the practice environment can help NG midwives better face the challenges and facilitate a better transition experience.

Professional quality is the foundation for all domains of the essential competences and is the only domain without graded requirements. This is because the practice of moral and ethical standards cannot be easily quantified or stratified by skill or knowledge levels. Instead, professional quality represents universal standards that all midwives should uphold, regardless of service years or position. As advocates of natural birth, believing in the birthing process and women's ability to give birth is an integral part of midwife's professional quality [46]. Previous studies have shown the value and importance of this belief in enabling NG midwives to fulfil their scope of practice [50, 61, 62]. Midwives with such belief are also more able to adhere to woman-centred continuity of care models [63–65], which is the learning focus that NG midwives received over time. In this study, participants noted that despite having higher education level, undergraduate midwives still lacked confidence in their ability to help mothers achieve natural birth. This may be attributed to the transition of midwifery education from hospital-based training to university-based training, which led to reduced clinical instruction and exposure [17]. Also in workplace, NG midwives often find themselves encountering a medical model of care, and this disparity between the reality of practice and ideals also makes them more likely to experience hindrances during the transition [57, 58, 63]. However, this lack of confidence is not static. Previous studies have shown that graduates' low confidence can be alleviated after 6 ~ 9 months of clinical training [66]. At that time, graduates recovered from the transition shock into the clinical environment and enter a stable recovery phase [12]. In rebuilding the confidence of NG midwives, positive feedback from clinical instructors played a significant role [67]. Additionally, joint training with doctors, nurses, and other healthcare team members that helps NG midwives clarify their roles and professional value in practice may also mitigate the self-doubt arising from role ambiguity.

Research on education and professionalization suggests that education strengthens the transition of graduates into professionals [36–38, 68], improving the education level of midwives has become the consensus of most countries and region [69–71]. In this study, senior midwives regard the birth process has the attributes of general practice, emphasizing that midwifery undergraduates need to receive a more comprehensive education to meet the challenges of new clinical practice. When the range of knowledge is guaranteed, over time, the gradual accumulation and integration of knowledge enable students to understand the interconnected aspects of their field [72, 73], rather than focusing on isolated knowledge or skills [74], thus forming knowledge systems, which is critical for cultivating midwifery graduates who can adapt to the changing situation encountered in clinical practice. With the accumulation of knowledge and experience, the knowledge system is constantly evolving and refining, and it's highly matched with the progressive competency requirements outlined in the midwifery essential competency.

Greenway's research noted that the disconnect between theory and practice begins during undergraduate nurse education but can persist into registered nurses [75].

Midwifery education, having long followed the nursing education model, faces similar challenges in integrating theory with practice. In this study, senior midwives responsible for teaching in universities proposed various methods to help midwifery students and NG midwives integrate theoretical knowledge into practice. Simulation-based teaching and role-playing were frequently mentioned by participants and are among the primary teaching methods currently used in midwifery education and clinical training. These methods enable students to engage multiple senses while interacting with simulated clinical environments, building a clear bridge between theoretical learning and clinical application [76]. Currently, simulation is mainly used to emulate emergencies, while not all NG midwives encounter real critical events during transition period. Simulation can balance this experiential disparity to some extent [77]. Senior midwives in this study did not mention the limitations of simulation-based teaching, this may be due to its relatively recent implementation in China [78, 79]. However, this method still has certain constraints in practical teaching. Simulation-based training often relies on simulation robots or standardized patients and requires scenario simulation script. The substantial upfront investment and material requirements may limit its feasibility in regions with scarce medical education resources. Additionally, unfamiliar environments, equipment-related anxiety, and occasional breaks in role immersion—such as distraction or unintended humour—can disrupt engagement and affect the effectiveness of training. These factors place higher demands on instructors' facilitation skills [23, 80]. Meanwhile, the application of virtual simulation in nursing education in China mostly focused on single-skill training, improving students' theoretical and technical performance, but has limited impact on clinical reasoning, humanistic care, and communication skills [81, 82]. Further research is needed to design teaching plans that better enhance the clinical adaptability of NG midwives.

However, even the best plans may fail if NG midwives lack support during the transition period. Midwifery being a practice-based profession, new graduates rely on the support, supervision and teaching of experienced colleagues in practice setting. During internships, midwifery students are provided with a "shelter" to learn under protection, but after graduation, as novice practitioners, NG midwives are expected to take certain responsibilities [60]. A supportive work environment can alleviate their fear of making mistakes, reduce graduates' clinical responsibilities and stress [83], and help to build collaborative professional relationships with other colleagues. Recognition and support from managers can also influence the practice of NG midwives, facilitating the provision of woman-centred care [84]. Meanwhile, although from a historical and global perspective, the "loss of power" of midwives compared to doctors is a situation that is unlikely to change in the short term [34, 85], healthcare institutions can implement interprofessional education programs. Strategies such as joint simulation training, cross-departmental workshops, and regular reflective meetings can foster mutual understanding of workflows and operational practices among doctors, nurses, and midwives, promoting equal communication and narrowing power gap [86]. Such interprofessional collaboration and support also help NG midwives to clarify the teamwork process, enhance their collaboration skills, and strengthen both their professional competence and confidence [87].

It is also important to note that although our study identified several challenges currently faced by NG midwives in China during the transition period, senior midwives generally remained optimistic about the future career development of undergraduate midwives. In this study, senior midwives expressed high expectations for undergraduate midwives, which could help them receive more attention and support during the transition period. Duchscher's transition theory suggests that new employees also hold idealistic expectations during their early practice phases [88]. However, previous research indicates that overly high expectations and taking on responsibilities beyond their scope of clinical practice too early can exacerbate stress in newly qualified nurses [59]. Whether these expectations impose additional pressure on NG midwives during their transition period requires further investigation.

A stable practice environment is also an essential component of support for NG midwives. In this study, senior midwives shared perspectives and suggestions regarding the practice environment that were not limited to the Essential Competencies for Three Grades of Midwives in China. Barry's research explored the relationship between NG midwives and their environments, suggesting that graduates will rebuild their work environments to some degree during the transition period, but implementing changes within the system to allow them to work within their full scope of practice, without the need for reconstruction would be a safer and more satisfying approach [57–59]. In the past, the invisibility of midwives within healthcare systems was a frustrating issue, but with growing recognition of midwives' contributions [34, 89], the focus has shifted to improving the regulation of midwifery education and training systems. In China, the number of universities offering undergraduate midwifery education has increased from 4 in 2017 to 89 in 2024, with a continued upward trend [90, 91]; at the same time, reforms in collaborative medical-education training are being deepened [92], and some senior midwives now take on teaching responsibilities for midwifery students at universities. It is also becoming increasingly common

for NG midwives to work at hospitals where they completed their internships as students. In this context, universities need to incorporate the teaching development of affiliated hospitals into their overall strategic plans, clarify the main function of affiliated hospitals in clinical teaching, and include teaching performance as a key criterion in hospital evaluations. In addition, the bridging role of senior midwives between academic teaching and clinical practice should be further promoted. Establishing coaching teams to guide NG midwives during the transition period can serve as a starting point for the development of standardised transition support programs, in response to the growing number of undergraduate midwifery graduates entering the transition stage.

Limitation

This study describes for the first time the perspectives and recommendations of senior midwives in China regarding the clinical transition for NG midwives. During the participant selection phase, although efforts were made to ensure diversity among participants by considering factors such as region and hospital, all the interviewees were female midwives from Guangdong Province. Therefore, the generalizability of this study may be limited. NG midwives can provide direct experience feedback, and non-senior staff who work alongside NG midwives can also offer additional perspectives. This aspect will be reported separately in our ongoing research, which together with this study forms part of our investigation into the transition period of NG midwives. Therefore, in this study we exclusively interviewed senior midwives. This may introduce some bias, as the findings are more reflective of the perspectives of managers and educators rather than a broader, department-wide collaborative viewpoint. It must also be recognized that this study is exploratory in nature, the findings are limited; they cannot be generalized to other faculty or different programs.

Conclusion

The results of this study indicate that senior midwives believe the current skill level and professional adaptability of NG midwives still fall short of the requirements outlined in the essential competencies for junior midwives and need further improvement. The core of the transition period is the shift of responsibilities and duties. Support from senior midwives and experienced colleagues can effectively alleviate the fear and stress faced by NG midwives. Reforms of the professional environment on institutional or regional levels rather than individual unit can provide direction for the career development of midwives after graduation, ensuring the sustained and stable development of a qualified midwifery workforce.

Supplementary Information

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Appendix A

Appendix B

Appendix C

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Author contributions

LH: Methodology; formal analysis; conceptualization; project administration; writing—original draft. JZ: Methodology; data curation; funding acquisition; investigation; conceptualization; project administration. ZY: Methodology; data curation; writing—original draft; investigation; formal analysis; software; writing - review & editing. WC: Methodology; conceptualization; project administration, supervision. JL: Conceptualization, project administration, writing - review & editing; supervision. QL: Conceptualization, Project administration, writing - review & editing; supervision. LL: Conceptualization, project administration, writing - review & editing. WZ: Conceptualization, project administration, writing - review & editing.

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Data availability

The data that support the findings of this study are available from the authors upon reasonable request and with the permission of authors.

Declarations

Ethics approval and consent to participate

This study was approved by the Biomedical Ethics Committee of Southern Medical University (NFYKDX003-[2024] No.10). Before the interview, the participants were requested to sign a "Research Participation Consent Form," and the interviews proceeded only after obtaining their consent.

Consent for publication

No individual data or other sources of data requiring consent for publication were used in this article.

Competing interests

The authors declare no competing interests.

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