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Strengthening midwifery education: An Assessment of Bachelor's degree midwifery curricula in the West Bank, occupied Palestinian territory (oPt)

Sahar Hassan [a,*], Aidah Alkaissi [b], Ibtesam Dwekat [c], Fatima Hammad Madany [d], Maha Nahal [e], Raheeghi Awni [f], Hana Abu Lail [g], Wafa Alamleh [h], Eman Alshawish [f], Jennifer Dabis [i], Rihab Sandouka [i]

[a] Department of Nursing and Master Program of Women's Health. Faculty of Pharmacy, Nursing and Health Professions, Birzeit University, Ramallah, Palestine
[b] Faculty of Nursing, An-Najah National University, Nablus, Palestine
[c] Department of Midwifery, Faculty of Health Professions, Al-Quds University, Jerusalem, Palestine
[d] Department of Midwifery, Faculty of Nursing & Health Sciences, Bethlehem University, Bethlehem, Palestine
[e] Department of Midwifery and Master program of Maternal Child Health, Faculty of Health Professions, Al-Quds University, Jerusalem, Palestine
[f] Faculty of Nursing, Pediatric Nursing, Maternity and Midwifery Division, An-Najah National University, Nablus, Palestine
[g] Department of Midwifery, Nablus University for Vocational and Technical Education, Nablus, Palestine
[h] Department of Midwifery. Hebron University, Hebron, Palestine
[i] Juzoor for Health and Social Development, Ramallah, Palestine

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ABSTRACT

Problem: In 1997, the first four-year direct-entry bachelor's midwifery program was launched in the West Bank, oPt, followed by four similar programs at other local universities. Since then, no comprehensive evaluation has been conducted to assess the quality or content of these programs.
Aim: To assess four-year direct-entry bachelor's midwifery programs against the International Confederation of Midwives (ICM) essential competencies for midwifery practice.
Methods: A cross-sectional rapid assessment of all five direct-entry bachelor's midwifery programs in the West Bank was conducted using a self-assessment tool comprising 92 ICM essential competencies. Data were collected by midwifery faculty members and analyzed using frequencies and percentages for each competency category based on the total number of assessed competencies.
Findings: Across the five midwifery programs, total competency scores ranged from 54.3 % to 68.5 %. Scores were observed in ongoing care of women and newborns (77.8–88.9 %) and antenatal (70.6–84.4 %). Competencies related to care during labor and birth ranged from 61.5 % to 69.2 %, while the lowest scores were in sexual and reproductive health and rights (16.7–41.7 %).
Discussion: Findings indicate that, although midwifery programs share similar core concepts, variations and gaps exist, particularly in competency coverage, with some deficiencies linked to limited clinical training opportunities and services.
Conclusion: The assessment results should guide midwifery programs in revising curricula to integrate ICM competencies, while faculty need training in pedagogy, evidence-based updates, and research skills; mentorship and capacity-building are also essential for faculty, clinical instructors, and students.

Abbreviations: MMR, Maternal Mortality Ratio; WHO, World Health Organization; LMICs, low- and middle-income countries; SRMNAH, Sexual, reproductive, maternal, newborn, and the adolescents' health; ICM, International Confederation of Midwives; OPt, occupied Palestinian territory; MoH, Ministry of Health; MOHE, Ministry of Higher Education; UNFPA, United Nations Population Fund; UNRWA, United Nations Relief and Works Agency for Palestine Refugees in the Near East; UHC, Universal Health Coverage; SDGs, Sustainable Development Goals.

* Correspondence to: Department of Nursing and Master Program of Women's Health. Faculty of Pharmacy, Nursing and Health Professions, Birzeit University, PO Box Birzeit 14, Ramallah, Palestine.
E-mail address: sjamal@birzeit.edu (S. Hassan).

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Statement of Significance

Problem or issue

-No comprehensive evaluation has been conducted to assess the quality and content of direct-entry bachelor's midwifery programs since their inception in 1997.

What is already known

-Despite the global initiatives to improve midwifery education, gaps remain in curricula, along with limited access to quality midwifery education programs and training opportunities.

-The international Confederation of Midwives (ICM) essential competencies for midwifery practice serve as a valuable tool for midwifery programs, providing a guiding framework to ensure the education of competent midwives.

What this paper adds

-Integrating midwifery competencies related to humanitarian and war-like situation is essential for midwives in conflict-settings like the oPt.

-Medical childbirth models can hinder midwifery students' quality clinical training, particularly in the area of care during labor and birth.

-Midwifery faculties require ongoing support and guidance to conduct regular reviews and updates of their curricula.

1. Introduction

Midwives play a crucial role in bringing the worldwide Maternal Mortality Ratio (MMR) down to less than 70 maternal deaths per 100,000 live births by 2030 by filling important gaps in maternal and newborn care [1]. According to World Health Organization (WHO), by 2035, the efficient use of midwives might save 4.3 million lives a year, preventing more than 60 % of all maternal and neonatal deaths [2,3]. Globally, midwives face significant shortages, particularly in low- and middle-income countries (LMICs), accounting for only 10 % of the global sexual, reproductive, maternal, newborn, and the adolescents' health (SRMNAH) workforce. They encounter substantial obstacles, including restricted educational access, practice limitations, and insufficient prioritization within vulnerable healthcare systems, which are exacerbated by crises such as pandemic and conflicts [4–6]. Moreover, significant global and regional variations have been documented in midwifery practices, scope of practice, education and training, policies, regulations and support [4,7,8]. Midwifery education worldwide faces challenges such as curriculum gaps, insufficient clinical training settings, a shortage of qualified preceptors, and a lack of empowered role models in clinical practice. Additional issues include limited number of highly educated faculty, resource constrains, financial difficulties for students, and challenges in attracting sufficient student numbers [7,9]. In the occupied Palestinian territory (oPt), additional extraordinary challenges exist, including limited resources, the ongoing war in Gaza and extensive military aggression in residential areas of the West Bank [10]. These are compounded by the installation of approximately 900 checkpoints, which further hinder pregnant women's access to access healthcare and midwives' services [11,12].

The total population of the oPt is approximately 5483,450, with a birth rate of 28.1/1000, a total fertility rate of 3.8, a maternal mortality ratio of 22.2 per 100,000 live births, and an infant mortality rate of 8.5 per 1000 live births [13]. Despite numerous challenges faced by the healthcare system and ongoing political instability, the oPt has achieved improved health indicators, such as lower maternal and infant mortality rates compared to most of neighboring countries, though it still lags behind wealthier Gulf nations [14]. The health system faces significant shortages in structures, equipment, supplies, and human resources. Health services are delivered in an overcrowded setting, which adversely impact the quality of health care. In the West Bank, unlike nursing education, that was offered by pioneering universities such as Al-Quds and Bethlehem universities at the bachelor's level since 1970's, midwifery education was historically restricted to ad-hoc, poor-quality training based on apprenticeship. This training was provided by Obstetricians to assist in their practices or through college diploma programs that ranged from six months to one or two years. A national survey conducted in 1998 by a national midwifery team, found that among 549 surveyed midwives, nearly half (49.4 %) had received midwifery education ranging from 6 months to 2 years (known as practical midwives) and only 110 nurse-midwives (20 %) held a post-graduate diploma in midwifery. The survey highlighted the need to upgrade midwifery education to meet the international standards and ensure the full scope of practice for midwives [15]. A few national initiatives that took the responsibility for educating midwifery according to international standards through graduate programs for bachelor's-educated nurses. This included two post-graduate nurse--midwifery programs: the first, offered by Bethlehem university (1980's-2006), and the second was offered by Makassed hospital in Jerusalem (1988–1996). Both programs were discontinued after a few cohorts of graduates due to financial constraints and inability to attract enough candidates.

It wasn't until 1997 that the Palestinian Ministry of Health (MoH) took serious steps to reform midwifery education by initiating the first four-year direct-entry baccalaureate program in midwifery in Palestine and the Middle East region. This program, designed for high-school graduates, was launched at Ibn Sina College under the supervision of the MoH. The initiative aimed to address the national needs for qualified professional midwives in a context of fertility rates, limited access to sexual and reproductive health services for women, and the closure of the post-graduate midwifery programs. The decision to implement a bachelor's degree in midwifery was made to be a cost effective, while ensuring adequate time to cover the core standards and competencies of the ICM [16]. The program sought to elevate the image of midwives by ensuring university-based midwifery education, on par with other disciplines. The program was designed in accordance with the ICM and the Royal College of Midwives (RCM) standards and pre-registration competencies and was accredited by the Ministry of Higher Education (MOHE). Following this accreditation, similar bachelor's programs in midwifery were established at local universities, starting with Al-Quds University in 1998. This was followed by Bethlehem and AN-Najah universities, and the most recent program at Hebron University in 2015 (Table 1).

There is a growing global effort to improve midwifery education through the review, updating and standardization of midwifery programs in many LMIC. Some countries have conducted assessments of their midwifery curricula [5,17–21], while others, such as Malaysia and Ethiopia, have taken steps to improve maternal health outcomes by adopting a minimum qualification of a bachelor's degree in midwifery or requiring midwives have a nursing background [4,18]. Other countries, such as Rwanda, have undertaken comprehensive national revision and standardization of their midwifery programs by adapting the ICM essential competencies into their midwifery curricula [22]. In contrast, a review of the general documents for direct-entry bachelor programs in Jordan revealed that midwifery curricula reflected a medical model, emphasizing interventions rather than adequately preparing midwives to meet to ICM scope of practice [23]. In Palestine, with support from United Nations Population Fund (UNFPA), a national review of general documents and the contents of midwifery core courses across all midwifery programs in the West Bank was conducted in 2011 as an initial step toward standardization of direct-entry bachelor midwifery curricula. However, it remains uncertain whether the programs have fully integrated the updates and identified gaps. Additionally, the extent to which the identified gaps have been adequately addressed, the challenges midwifery programs face in integrating

updates, and the overall impact of this initiative on midwifery practice and education remains unclear. Some midwifery programs continue to revise and update their curricula as part of their institutional policies and ongoing efforts.

In light of the above, an assessment of four-year direct-entry bachelor's midwifery programs in the oPt was deemed necessary to evaluate to which extent current bachelor's midwifery programs align with the ICM essential competencies for midwifery practice [24]. The goal is to integrate current evidence-based knowledge aligning with the recently established ICM and other global standards, which is expected to positively impact the care provided to women and newborns. This paper presents the results of an assessment of the bachelor's midwifery programs in the West Bank, oPt.

2. Methods

2.1. Research design

We conducted a cross-sectional rapid assessment of all five direct-entry bachelor's midwifery programs in the West Bank during August 2023. Before the development of the assessment tool, a quick thorough desk review was conducted to meticulously examine the literature and the most recent standards in midwifery curricula. This desk review considered the reports and standards set by the ICM [16,24] and recommendations from the WHO [25], and the state of worlds' midwifery report [4], and other international reports on the global midwifery landscape, alongside national requirements for midwifery education.

2.2. Curriculum self-assessment tool

We developed a rapid self-assessment tool based on ICM essential midwifery competencies [24] and midwifery education standards [16]. The tool comprises two main sections. The first section assesses selected essential midwifery competencies impeded in the midwifery curricula and includes four sub-sections: 41 competencies from the cross-functional competencies for midwifery practice, 12 from sexual and reproductive health and rights, 17 from antenatal care, 13 from care during labor and birth, and nine from the ongoing care of women and newborns (Table 4 and supplementary file). In total, we assessed 92 of the ICM essential competencies for midwives that were included in the midwifery curricula. We selected competencies that we anticipated to be missing or have significant gaps. The second section gathered general information about the midwifery program, including details on faculty, clinical training sites, the number of midwifery students and graduates, and employment.

2.3. Setting

There are five direct-entry bachelor's midwifery programs nested within faculties of nursing, medicine, or health sciences at four local public universities, along with one program operating under the MOHE, all distributed across the West Bank, oPt. An invitation was sent to all universities, and they have all agreed to participate in this national assessment. The participating universities included AN-Najah University and Ibn-Sina College for Health Professions in the North; Al-Quds university in Abu Dis (Middle zone), and Bethlehem and Hebron universities in the south.

2.4. Data collection

An invitation letter was sent to stakeholder of midwifery programs in all universities. The letter outlined the goals for the mapping exercise and extended the invitation to deans of health sciences, nursing and midwifery schools, as well as midwifery programs directors and midwifery faculty members. All universities agreed to participate. A full-day preparatory face-to-face inaugural meeting was conducted with stakeholders, including deans, program directors and midwifery faculty members from the participating universities. The purpose of the meeting was to elucidate the necessity and objectives of the midwifery curricula assessment. The principal investigator (PI) presented the process, methodology and a summary from the revised literature on the ICM's international standards of midwifery education seeking feedback and consensus on the approach. Additionally, the PI introduced the self-assessment tool that was crafted in alignment with the findings from the literature review and the ICM's core documents to university faculty members and stakeholders. The tool was thoroughly discussed among the stakeholders, representatives and faculty members from universities and their respective midwifery programs. Active participation was encouraged, prompting stakeholders to seek additional feedback on the assessment tool from other faculty members in their midwifery

Table 1
Profile of midwifery programs in the West Bank.

University/ Identity Indicator	University A	University B	University C	University D	University E
Year of accreditation	2008	1998	2007	2015	1997
Number of years the program has been active since accreditation (years) Mean: 19	16	26	17	9	27
Total number of credit hours Mean: 141.8	146 *Theory: 110 *Clinical: 36	142 Theory: 116 Clinical: 26	133	138	150
Number of students currently enrolled Mean: 116.4	50	160	205	95	72
Total number of graduates Mean: 293.8	100	450	350–400	116	428
Mechanisms for students to provide feedback and ongoing evaluation of the midwifery curriculum, midwifery faculty, and the midwifery program **(YES / NO)**	Yes	No	Yes	No	Yes
Do you have a follow up mechanism for Midwifery graduates (Midwifery Alumni) **(YES / NO)**	Yes Social media	No	NA	Yes Via University alumni	Yes
Out of total midwifery graduates, how many are currently employed? Or unemployed? **Answer the according to the available data at your program**	No	NA	NA	NA	95 % (Employed) (Estimation)
Last time program revised and updated	2020	2019	2017	None	2021 COVID related changes

* 1 Credit Hour (Theory) = 16 actual teaching hours. **1 Credit Hour (Clinical) = 8 shifts (Each shift = 8 actual working hours).

programs were not present at the meeting, and to submit any further input within 1–2 weeks. All relevant feedback, comments and suggestions made by the participants and received were integrated into the tool to ensure its comprehensiveness, effectiveness and ownership. The revised assessment tool was shared with the team via email, with a request to confirm that their feedback had been incorporated before beginning its completion.

The initial meeting was highly interactive and concluded with a comprehensive plan that was developed collectively by the group. The active participation of stakeholders in this session greatly enhanced their understanding of the necessity for the review. Consequently, it facilitated the subsequent review process within each midwifery program, fostering a sense of responsibility and ownership among the participants. This was particularly crucial given that the majority of stakeholders in the participating universities are not midwives. Data were collected over a two-week period using the self-assessment tool completed by midwifery faculty members at each university, with active participation from faculty within their programs. The PI, who is an experienced nurse-midwife leader and an academic, familiar with the context of midwifery education and scope of practice, provided ongoing support, guidance and supervision to teams from all universities throughout the process of data collection through a dedicated WhatsApp group and a subsequent follow-up meeting was held where each university reported its progress. Clarifications were provided on specific points as needed, in response to team inquiries. The PI carefully reviewed and consolidated all data from the received assessment tools into a single form. All midwifery programs submitted the completed assessment tool to the PI by the deadline.

To ensure accuracy and credibility, the PI followed up via email, phone call, or the WhatsApp group with midwifery faculty members and program directors to verify certain reported information in the assessment tool, ensuring reliability of reported data before analysis.

Furthermore, preliminary findings from the self-assessment tool were presented by a midwifery faculty member from each university, together with the research team, during a validation workshop involving all universities. Following each presentation, an interactive discussion was held with the respective university team to verify and confirm the reported information.

2.5. Ethical approval

This study was conducted in accordance with ethical standards and with the 1964 Helsinki declaration. All necessary permissions were obtained from Juzoor and the participating universities. Informed consent was obtained from all nursing and midwifery faculty members who participated in this study. Data were collected by faculty members from the participating universities through a self-assessment of program records and documents, with aim of strengthening local midwifery curricula. Ethics approval was not required, as no humans or direct personal data directly were involved in this research.

2.6. Data analysis

Data was analyzed first by the PI, who reviewed the content of the submitted self-assessment tool from each university. A content analysis of data were generated from the self-assessment tools and the discussions among all participants, presented in table format. The competencies reported by midwifery programs were categorized as ‘yes’, ‘inadequate’, or ‘no’. Then, total frequency of each response was calculated, and percentages for each category were determined based on the total number of assessed competencies. A summary of the total competencies assessed was calculated for each university. The names of universities were anonymized before sharing the results. Next, a midwifery faculty member from each university was asked to review the self-assessment tool, identify strengths and areas for improvement in their curriculum. Preliminary findings from the self-assessment tool were presented by a midwifery faculty member from each university-to-university representatives and the research team during a validation workshop with all universities. The process of analysis was summarized in Fig. 1.

3. Results

3.1. The profile of midwifery programs in the West Bank

The duration of study in all direct-entry programs is four years, and it leads to a Bachelor degree in Midwifery. The total number of credit hours in the midwifery programs ranged from 133 to 150 credits (mean: 141.4, SD: 6.72). The median number of years of activity was 17 years (range 9–27 years). The total number midwifery graduates from all programs were approximately 1469 midwives, with the highest number of graduates from programs B and F (Table 1). The mean number of students currently enrolled in programs was 125.4 (range 50–205 students). Table 1 shows the profile of midwifery programs in the West Bank.

Three midwifery programs reported ongoing evaluation and feedback processes for the curriculum, faculty, and program from students. Three programs reported having follow-up mechanisms for graduates, either informally via social media or formally through university alumni units. None of the assessed programs tracked or had data on the exact number of employed or unemployed graduates. All programs had revised and updated their curricula since establishment, except one (program E) (Table 1).

3.2. Midwifery and nursing faculty

A total of 19 midwifery faculty members, each with at least two years of previous clinical experience, teach midwifery courses across the five midwifery programs. Faculty numbers ranged from 2 to 5 per program (mean: 3.6). Of these, only one midwife holds a PhD, while the remaining 18 hold master’s degrees. Nursing and basic science courses are taught by nursing faculty and instructors from other disciplines. All programs reported holding regular meetings with clinical preceptors, but only two had an external advisory committee (Table 2).

3.3. Midwifery clinical training

Table 3 presents selected indicators of clinical training in the midwifery programs. A total of 72 clinical instructors were responsible for training students (mean: 14.4 per program, range: 2–30). Training takes place in a variety of governmental, non-governmental, United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), and private settings such as hospitals, primary health care centers, and community health centers. Only two programs reported

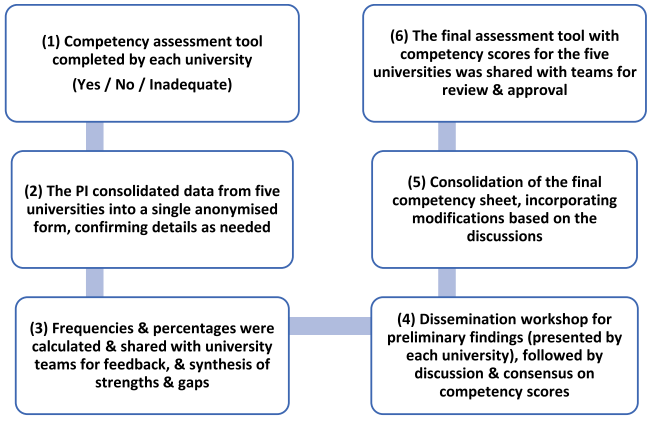

Fig. 1. Data analysis process.

Table 2
Summary of Midwifery and Nursing Faculty in Midwifery Programs.

Faculty Indicators/Programs	A	B	C	D	E
Head of midwifery program is a midwife faculty member **(YES / NO)**	No	No	Yes	Yes	Yes
Total number of Midwifery Faculty members (hold Midwifery credentials) teach in the midwifery program Mean: 3.6, SD: 1.2	5	2	4	3	5
Number midwifery faculty Bachelor degree holders	1	0	0	0	0
Number midwifery faculty Master degree holders Mean: 3.2	4	1	4	3	5
Number midwifery faculty PhD holders	0	1	0	0	0
Number midwifery faculty worked at least 2 years clinical experience as a midwife (regardless to degree)	5	2	4	3	5
Number of Nursing Faculty members (hold Nursing credentials) teach in the midwifery program	9	8	4	16	15
Number of other Faculty members teach in the midwifery program (other specialties) Average: 9.8, SD: 5.11	19	10	5	10	5
Regular meetings between midwifery faculty members and clinical preceptors **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
There is an External Advisory Committee for your midwifery program **(YES / NO)**	Yes	No	Yes	No	No

Table 3
Summary of clinical training indicators in midwifery programs.

Midwifery Clinical Training Indicators	A	B	C	D	E
Number of clinical midwifery preceptors Average: 14.4, SD: 11.65	7	30	23	10	2
Places used for midwifery clinical training:	Yes	Yes	Yes	Yes	Yes
• Hospitals **(YES / NO)**					
• Outpatient clinics in hospitals **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
• Primary Health care Centers **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
• Community health centers (NGOS & / private) **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
• Family households **(YES / NO)**	No	No	Yes	No	Yes
Students participate in providing midwife-led continuity of care to women/families through pregnancy, birth and the postnatal period. **(YES / NO)**	No	No	No	No	No
Students graduate at competent level. **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
Protection of students' personal health, safety, and wellbeing in learning environments, such as hours of continuous work, exposure to infectious or environmental hazards, modes of travel, verbal or physical abuse. **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
Students provide midwifery care primarily under the supervision of a midwife teacher or midwifery clinical preceptor/clinical teacher **(YES / NO)**	Yes	Yes	Yes	Yes	Yes
The ratio of midwifery students to clinical preceptors	3:1	3:1	3:1	4:1	4:1

using family households for home visits during the community health course. All training is supervised by clinical preceptors, with instructor-to-students ratio of 1:3 or 1:4 for midwifery courses. The midwifery-led continuity of care model is not implemented in Palestine, therefore, students are not exposed to it during clinical training.

3.4. Midwifery curricula

We assessed a total of 92 competencies across the five ICM essential competency categories for midwifery practice (see supplementary file). Total competency scores among the five midwifery programs ranged from 54.3 % to 68.5 %. The lowest scores were in category 2: sexual and reproductive health and rights (16.7–41.7 %) and category 1: cross-functional competencies and for midwifery practice (48.8–63.4 %). In contrast, antenatal care (70.6 %-84.4 %) and the ongoing care of women and newborns (77.8 %-88.9 %) scored highest across programs. Scores for care during labor and birth category ranged from 61.5 % to 69.2 %. Notably, areas of inadequate competency were consistent across all local programs.

Almost half of the assessed competencies, 41 (44.6 %), were from the cross-functional competencies for midwifery practice (Table 4). Gaps and inadequacies were concentrated in the following areas: Preceptorship/mentorship role of midwives, supervision to ensure that practice is aligned with evidence-based clinical practice guidelines; maintaining up-to-date knowledge, life-saving skills, and emergency equipment use; global recommendations for practice and their evidence base; public Health issue such as: Sustainable Development Goals (SDGs), health systems, universal health coverage (UHC); facilitating women's choices about care, particularly in relation to cultural norms & practices around sexuality, marriage, childbearing; community follow-up and home visits; skills needed in warlike or humanitarian settings; addressing health needs and self-care of adolescents girls and women; promoting physiological birth and reducing overmedicalization; midwifery continuity of care; and midwifery care in crises. Few programs also reported gaps related to the limits of midwifery scope, adherence to institutional protocols, emergency or lifesaving skills such as basic life support (BLS), neonatal life support (NLS) and emergency obstetric and newborn care (EmONC).

In the area of sexual and reproductive health and rights, 12 competencies (13 %) were assessed across the participating programs. All programs achieved scored 41.7 % in this category, except one, which scored only 16.7 %, making it the weakest category among the midwifery programs. Deficiencies were noted in health education on sexual reproductive health and rights, contraception, administration of family planning methods, pre-conception care, comprehensive abortion care including decision-making for unintended pregnancies and emergency contraception, legal options for induced abortion, and risks of unsafe abortion. Additionally, one program reported that post-abortion care was not included in their curriculum. (Table 4)

The antenatal category received relatively high scores, with one program scoring 88.2 %, three programs 82.4 %, and one program 70.6 %), out of 17 assessed competencies (14.1 %). However, gaps were noted in childbirth preparation and addressing limitations of birthplace settings in the Palestinian context. Additionally. one program reported excluding medications during pregnancy and local policies and procedures.

We assessed 13 (14.1 %) competencies related to care during labor and birth (Table 4). Scores ranged from 61.5 % in one program to 69.2 % in four programs. Key gaps were noted in promoting physiologic labor and birth, including support strategies, respectful one-to-one care, mobility and positioning, nourishment and fluids, partogram use, augmentation, avoidance of unnecessary interventions (e.g. amniotomy, electronic fetal monitoring, directed closed-glottal pushing, episiotomy), and respectful care for positive birth experience.

In the category of ongoing care of women and newborns, we assessed 9 (9.8 %) competencies, which achieved the highest scores among of all categories (77.8–88.9 %). Gaps were noted in counseling for women after stillbirth, neonatal death, serious infant illness, and congenital anomalies, while one program reported that breastfeeding was not included in its curriculum. (Table 4)

4. Discussion

This is the first mapping to give a "glimpse" into the curricula of bachelor midwifery programs in Palestine. Our findings highlight some strengths in midwifery programs, particularly regarding the midwifery instructors. All instructors of midwifery courses are experienced midwives with at least two years of clinical practice and are primarily responsible for teaching midwifery courses. Additionally, midwifery

Table 4
summary of total competency scores across ICM categories in the assessed midwifery programs.

Category	No. of Assessed competencies	A	B	C	D	E
Category 1: Cross functional competencies for midwifery practice	41 (44.6 %)					
Yes		21 (51.2 %)	24 (58.5 %)	26 (63.4 %)	20 (48.8 %)	24 (58.5 %)
Inadequate		14 (34.1 %)	14 (34.1 %)	14 (34.1 %)	11 (26.8 %)	12 (29.3 %)
No		6 (14.6 %)	3 (7.3 %)	1 (2.4 %)	10 (24.4 %)	5 (12.2 %)
Category 2: Sexual and reproductive health and rights	12 (13.0 %)					
Yes		5 (41.7 %)	5 (41.7 %)	5 (41.7 %)	2 (16.7 %)	5 (41.7 %)
Inadequate		6 (50 %)	6 (50 %)	6 (50 %)	8 (66.7 %)	6 (50 %)
No		1 (8.3 %)	1 (8.3 %)	1 (8.3 %)	2 (16.7 %)	1 (8.3 %)
Category 3: Antenatal	17 (18.5 %)					
Yes		14 (82.4 %)	14 (82.4 %)	15 (88.2 %)	12 (70.6 %)	14 (82.4 %)
Inadequate		2 (11.8 %)	3 (17.6 %)	2 (11.8 %)	5 (29.4 %)	2 (11.8 %)
No		1 (5.9 %)	0	0	0	1 (5.9 %)
Category 4: Care during Labor and Birth	13 (14.1 %)					
Yes		9 (69.2 %)	9 (69.2 %)	9 (69.2 %)	8 (61.5 %)	9 (69.2 %)
Inadequate		4 (30.8 %)	4 (30.8 %)	4 (30.8 %)	3 (23.1 %)	4 (30.8 %)
No		0	0	0	2 (15.4 %)	0
Category 5: Ongoing care of women and newborns	9 (9.8 %)					
Yes		7 (77.8 %)	8 (88.9 %)	8 (88.9 %)	8 (88.9 %)	8 (88.9 %)
Inadequate		1 (11.1 %)	1 (11.1 %)	1 (11.1 %)	1 (11.1 %)	1 (11.1 %)
No		1 (11.1 %)	0	0	0	0
Total Competencies	92					
Yes		56 (60.9 %)	60 (65.2 %)	63 (68.5 %)	50 (54.3 %)	60 (65.2 %)
Inadequate		26 (28.3 %)	28 (30.4 %)	27 (29.3 %)	28 (30.4 %)	25 (27.2 %)
No		9 (9.8 %)	4 (4.3 %)	2 (2.1 %)	14 (15.4 %)	7 (7.6 %)

clinical training is mentored by adequate number of clinical preceptors, and takes place in a variety of hospitals and primary care centers. However, all midwifery instructors hold a masters' degree, except for one holds a PhD. This may limit opportunities for advanced research, curriculum development, and evidence-based teaching. The total credits required for midwifery programs are sufficient and align with national standards for a bachelor's degree. However, in addition to the ongoing political instability that hinders faculty and students' access to universities and clinical settings, these programs face numerous other challenges. These include difficulties in accessing scholarships for midwifery faculty members to pursue PhD degrees, recruiting sufficient qualified faculty members, clinical mentors, and students, limited training opportunities for midwifery students, inadequate employment opportunities of midwifery graduates, and insufficient time to continuous curriculum revision and updates. Faculty also encounter structural challenges in classroom and labs [26]. Furthermore, variations across curricula have been observed.

Midwifery curricula in the oPt share similar concepts and nearly similar curricula structures, ensuring an optimal balance between theoretical and practical components. Unlike midwifery programs in other LMICs that have not updated their curricula [20], three out of five of the curricula we assessed reported regularly reviewing and updating their programs. This mapping identified gaps in several areas relevant to professional midwifery, including preparing midwives for future preceptorship roles, addressing human rights issues [20], and covering public health topics such as SDGs and UHC [27,28], and midwifery care in crisis and humanitarian settings [29]. A study assessed midwifery curricula of 10 institutions from four countries found that none of the curricula met all ICM competencies, with scores ranges from 47 % in Benin to 76 % in Uganda [20]. Gaps in midwifery curricula have been reported in Lao PDR, particularly in areas such as abortion care, care for sick children, basic emergency obstetric care, postpartum care, management of complications during pregnancy, sexually transmitted infections and care after cesarean section [17]. A study from Iran reported better alignment with the ICM competencies related to "Care during labor and childbirth" [21].

The mapping also identified gaps in areas related to up-to-date knowledge of practices aimed to facilitate normal physiological birth and reduce overmedicalization. These include areas such as allowing labor companions, providing respectful care [30], avoiding routine episiotomies [31], minimizing artificial augmentation and induction of labor [32] or caesarean sections without medical indication [33,34], ensuring continuity of care by a midwife [35], addressing health needs of adolescent girls, promoting coping strategies for health problems, and considering the social determinants of health. These competencies have been recently incorporated in to the 2024 version of the ICM competencies [24]. In the oPt, there is no continuity of midwifery-Led care [36] or postnatal home visits for women after childbirth, which limits midwifery students' clinical experience.

Some inadequacies in competencies stem from weaknesses in clinical settings, where the medical model is predominantly implemented during childbirth [6,37]. Despite outdated childbirth practices being documented for over a decade [37,38], they remain prevalent in current hospital settings. Common practices include routine administration of intravenous fluids, episiotomies for primigravidas, amniotomy, restrictions of mobility and oral intake, forbidding companions during labor or delivery, and the routine use of lithotomy position for childbirth. However, embedding baccalaureate midwifery programs within university education has enhanced midwifery education and improved image of midwives. This issue was extensively discussed among the research team from all universities during the presentations of preliminary findings from their self-assessment tool. Some midwifery faculty members shared observations and challenges in teaching student midwives according to evidence-based practices, while in hospitals, students are confronted with a different reality. Midwifery programs have not significantly contributed to improving midwifery practice [6,37], nor to the expansion of midwifery scope in alignment with ICM standards [39]. This reflects the ongoing resistance faced by midwives within the health system.

While the clinical settings fail to provide an ideal model of the physiological management of labor, one that could empower midwifery students and enrich their clinical experiences, it remains unclear whether the theoretical curricula place adequate emphasis on both these unnecessary and beneficial interventions. Although clinical preceptors

are mostly midwives, they are often not sufficiently empowered to drive change in midwifery clinical practices, such as stimulating labor ward staff or disseminating up-to-date knowledge on the use of these interventions. Furthermore, not all midwifery programs hold regular meetings or capacity-building activities to strengthen and update their knowledge to serve as positive change agents in hospitals. As a results, midwifery graduates often struggle with competency development. The lack of exposure of students to real midwifery model outside medical model of childbirth could be a reason for deficiencies in these competencies as also argued by Shaban et al. from Jordan [40].

Despite longstanding calls to expand midwifery scope of practice in the oPt particularly since the late 1990's [15], due to the ongoing unstable political and humanitarian situation [41], midwifery remains a non-autonomous profession [6,39]. Currently, midwives primarily work in hospitals in the labor and postpartum wards, where their roles often resemble those of obstetric nurses rather than focusing on the physiological management of labor. Although midwives provide all aspects care during labor and birth, critical decisions such as admitting women, planning labor management, and attending births, making final decisions regarding childbirth care remain the responsibility of physicians. Likewise reports from Jordan [9], inter-disciplinary power struggles and perception of midwives as competitors to obstetricians [6] may have contributed to their marginalization, resulting in a limited scope and restricted duties, even in the care of women during normal childbirth. Nevertheless, midwifery programs have successfully attracted candidates, and each program has graduated several cohorts of professional midwives, leading to an increase in the number of qualified midwives. Regular meetings with clinical preceptors are essential to discuss the latest knowledge in the field, provide written resources for reference and dissemination to midwives in clinical settings, and ultimately, empower preceptors to become effective mentors, valuable resources for clinical staff, and agents of change.

All curricula ensure that students learn the basics of suturing an episiotomy through observations, and some programs may further enhance this skill in their simulation labs. However, suturing an episiotomy or perineal tear is not within the scope of practice for midwives in Palestine. Unlike the gaps identified in teaching emergency obstetric skills on Lao PDR [17], all midwifery programs include teaching essential emergency skills required for midwives. These skills encompass maneuvers for shoulder dystocia, management of excessive bleeding, handling eclampsia, addressing fetal compromise, neonatal resuscitation, and basic life support. However, it is unclear to what extent these competencies are practiced through simulation drills during the program, or whether midwifery graduates feel confident in applying these skills upon graduation. While there is no evidence to suggest that simulation can replace real clinical training, it can serve as a useful tool for enhancing and strengthening midwifery students' clinical competencies, particularly in managing emergencies and rare life-threatening situations, such as shoulder dystocia, postpartum hemorrhage and neonatal resuscitation [42,43].

Although family planning is included in midwifery curricula, clinical training remains inadequate due to a dearth of clinical settings, as midwives are not the primary healthcare providers for family planning [39]. In Palestine, physicians serve as the primary providers of family planning and antenatal care services in both the public and private sectors. Nonetheless, midwives are the main healthcare providers for this service at UNRWA clinics, and many of them are well-known for their expertise and proficiency in IUD insertion. Preconception care is not well integrated into health settings, and therefore clinical training for midwifery students is a challenge in this area. Additionally, caring for women who experience physical and sexual violence, unintended pregnancy, abortion is integrated into theoretical part of midwifery programs, but opportunities for clinical training are limited. Legal options for induced abortion are not included in the midwifery curricula, as abortion is prohibited by law [44]. The only opportunity available for students during clinical training is for women admitted complaining of threatened or missed abortions. This is also reflected in midwifery programs in other countries [17,20].

Antenatal care ranked among the highest competencies across all programs. Gaps in antenatal care competencies were reported from midwifery programs in other countries such as Iran [21] and Lao PDR [17]. At UNRWA clinics, midwives provide antenatal care for normal pregnancies. This presents an excellent learning model for midwifery students during their clinical training. Childbirth preparation and planning of a place of birth setting appear to be inadequately addressed in midwifery curricula. This may be linked to the absence of local childbirth preparation programs for pregnant women, which reflects a lack of quality in pregnancy care that follows the medical model. It is also unclear to what extent childbirth preparation is covered in theory, as all midwifery teachers are locally trained and have not been exposed to or involved in the actual implementation of a childbirth preparation program, nor is anyone certified in such programs. Educating and training midwives on the philosophy, concept, and key components of childbirth preparation programs will empower them to advocate, lead change and support integration of these valuable programs into health services.

A surprising finding is the inadequate emphasis on the place of birth, a crucial factor in Palestine, where approximately 900 checkpoints across cities and villages [11] restrict the mobility of pregnant women, limiting their access to care and hospitals for childbirth [41]. There is evidence that Palestinian midwives were not adequately prepared to assist women in giving birth outside hospitals during wartime in Gaza [45]. Recent reports from humanitarian organizations document cases of pregnant women gave birth amid rubble, in tents, shelters or even in cars [46]. It is crucial to prepare midwifery students in the oPt to manage essential pregnancy care, assist women in giving birth safely outside hospitals, and provide necessary care of women and newborns at home after birth.

Finally, competencies related to newborns care scored highest among the five categories, as these competencies taught in a separate dedicated course for newborn care or jointly with the pediatrics course, allowing sufficient time to cover the content. In hospitals, midwives are responsible for providing immediate care to healthy newborns and for identifying those who require additional medical attention, which facilitates the integration of clinical competencies and helps build students' confidence. Assisting women with breastfeeding and providing counseling to women after stillbirth, neonatal illness or congenital anomalies are areas where midwifery curricula are lacking. These competencies should be integrated into the theoretical part of the curriculum through simulation labs and followed up in clinical training by preceptors.

5. Limitations

The study faced several limitations that need to be considered. While data were provided by midwifery faculty members from each program, and a dissemination session was held for presentations, discussion and validation, there may have been some bias in these reports, as each program might have sought to highlight its strengths with minimizing perceived gaps. The reported data were accepted as is, without validation or triangulation against official written documents from each program (except those published on websites of midwifery programs or universities), field observations or reports from midwifery students. However, the dissemination session involved additional faculty members from each program, during which several issues were discussed, and we questioned whether they were accurately reported in the assessment tool. Modifications were made as necessary during this session.

6. Conclusion

This assessment revealed some gaps across midwifery curricula in

the oPt. Strengthening midwifery education is essential to impact maternal and newborn health, requiring quality education that ensures coverage of the ICM essential competencies. Midwifery faculties need ongoing support and guidance to conduct regular reviews and updates of their curricula. Faculty members require training in pedagogy, evidence-based updates, and research competencies to enable them to continuously revise and integrate new knowledge throughout the teaching and learning process. Mentorship training and capacity building are also essential for all midwifery faculty members, clinical instructors and midwifery students. The results of this assessment should guide midwifery programs in revising and updating their curricula to integrate the new competencies from the ICM. While this assessment is an initial step in addressing the structure and gaps in midwifery programs and evaluating their alignment with international standards [16, 24], the next critical step is to assess the content delivered to students in classrooms, the quality of lab and simulation training, and the quality of clinical training [20].

Author agreement

We confirm that this manuscript is original, has not been previously published, and is not under consideration for publication elsewhere. All authors have seen and approved the manuscript being submitted. All authors abide by the copyright terms and conditions of Elsevier.

CRediT authorship contribution statement

Sahar Hassan: Conceptualization, Project Planning, Methodology, Software, Data curation, Investigation, Formal analysis, Writing-original draft, review and editing-original draft, supervision, funding acquisition. **Aidah Alkaissi:** Methodology, Data curation, Validation, contributed to analysis, review and editing, comments on original draft. **Ibtesam Dwekat:** Methodology, Data curation, Validation, contributed to analysis, significance statement, review original draft. **Fatima Hammad Madany:** Methodology, Data curation, Validation, contributed to analysis, review and review original draft. **Maha Nahal:** Methodology, Data curation, Validation, contributed to analysis, review and comments on original draft. **Raheeghi Awni:** Methodology, Data curation, Validation, contributed to analysis, review original draft. **Hana Abu Lail:** Methodology, Data curation, Validation, contributed to analysis, review original draft. **Wafa Alamleh:** Methodology, Data curation, Validation, contributed to analysis, review original draft. **Eman Alshawish:** Methodology, Data curation, Validation, review original draft. **Jennifer Dabis:** Conceptualization, Project Planning, Methodology, project administration, Resources, Funding acquisition, review original draft. **Rihab Sandouka:** Conceptualization, Project Planning, Methodology, Supervision of the project, Resources, Funding acquisition, review original draft. All authors have seen and approved the manuscript being submitted.

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The authors declare no competing financial interests.

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Data statement

All data generated or analyzed during this study are included in this published article [and its supplementary files].

Supplementary data

Summary of Self-Assessment of Competencies in Midwifery Programs

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.wombi.2025.102114.

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