

# Quality of Pre-Service Midwifery Education in Public and Private Midwifery Schools in Afghanistan: A Cross Sectional Survey

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## Research Article

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## Abstract

## Background

Midwives are the key skilled birth attendants in Afghanistan. Rapid assessment of public and private midwifery education schools was conducted in 2017 to examine compliance with national educational standards. Aim was to assess midwifery education to inform Afghanistan Nurses and Midwives Council and other stakeholders priorities for improving quality of midwifery education.

## Methods

A cross-sectional assessment was conducted from September 12–December 17, 2017, using a modified Midwifery Education Rapid Assessment Tool to assess education quality aspects related to infrastructure, management, teachers, preceptors, clinical practice sites, curriculum and students in 29 midwifery schools. A purposive sample of six Institute of Health Sciences schools, seven Community Midwifery Education schools and 16 private midwifery schools was used. Participants were midwifery school staff, students and clinical preceptors.

## Results

Libraries were available in 28/29 (97%) schools, active skills labs in 20/29 (69%), childbirth simulators in 17/29 (59%) and newborn resuscitation models in 28/29 (97%). School managers were midwives in 21/29 (72%) schools. Median numbers of students per teacher and students per preceptor were 8 (range 2–50) and 6 (range 2–20). There were insufficient numbers of teachers practicing midwifery (132/163; 81%), trained in teaching skills (113/163; 69%) and trained in emergency obstetric and newborn care (88/163; 54%). There was an average of 13 students at clinical sites in each shift. Students managed an average of 15 births independently during their training, while 40 births are required. Twenty-four percent (7/29) of schools used the national 2015 curriculum alone or combined with an older one. Ninety-one percent (633/697) of students reported access to clinical sites and skills labs. Students mentioned, however, insufficient clinical practice, lack of education materials, transport facilities and disrespect from school teachers, preceptors and clinical site providers as challenges.

## Conclusions

Positive findings included availability of required infrastructure, amenities, approved curricula in 7 of the 29 midwifery schools, appropriate clinical sites and students' commitment to work as midwives upon graduation. Gaps identified were use of different often outdated curricula, inadequate clinical practice, underqualified teachers and preceptors and failure to graduate all students with sufficient skills such as independently having supported 40 births.

## Background

Afghanistan has come a long way in reducing the maternal mortality ratio (MMR) from 1,600 in 2002 to 638 per 100,000 live births in 2019 [1, 2]. Female clinicians able to assist births were present in only 15 (18%) of the 783 public health facilities in 2002 [3]. In response, Afghanistan's Ministry of Public Health (MoPH) launched the Basic Package of Health Services (BPHS) with 1075 health facilities in 2004 and 1829 in 2011 [4]. MoPH invested in educating competent midwives with the essential range of skills and recruited them to increase skilled birth attendants (SBA) since early 2003 [5]. This included strengthening of two years' diploma midwifery education programs through the existing Institute of Health Sciences (IHS) and establishing community midwifery education (CME) programs, all compliant with the International Confederation of Midwives (ICM)' recommendations on core competencies in midwifery [6]. The schools funded by MoPH, and several bilateral and multilateral international donors have been implemented by MoPH, national and international non-governmental organizations (NGOs). The numbers of midwives increased from 467 in 2002 to 7,244 in 2019 [3, 7]. Private schools graduated 25,177 midwives in 2009–2019 [8]. With a crude birth rate of 35 births per 1,000 persons or 1.2 million children born per year in Afghanistan (total population 32.2 million) and at WHO recommended rate of 4.45 SBA per 1000, the number of midwives may look sufficient [9, 10, 11a]. However, midwives' availability was 16.7% in public facilities in Southeastern provinces as compared to 63.6% in Northeastern provinces indicating inequity in their distribution [12]. Although, broader health system, socio-cultural and security issues are important, nevertheless, high quality midwifery education remains crucial to addressing peoples access to midwifery services in Afghanistan. [13]

MoPH developed a national accreditation policy based on educational standards and established the Afghanistan Midwifery and Nursing Education Accreditation Board (AMNEAB) in 2005 [14]. An evaluation of public midwifery schools in 2008 identified areas of strengthening midwifery programs as ICM and MoPH recommend and followed by establishment of a national two years' curriculum for IHS and CME programs [15]. Competency building, effective preceptorship, simulated and clinical practice, however, remained poorly documented [16].

This paper is the result of a rapid assessment of public and private midwifery schools in 2017, conducted in collaboration with Jhpiego, Afghan Midwives Association and MoPH, when efforts to formally establish the Afghanistan Nurses and Midwives Council (ANMC) with the mandate to assure high quality preservice education for midwives were at their peak [17]. The objective of the study was to examine of public and private school educational standards for infrastructure and management, number and competencies of teachers and preceptors, clinical practice sites, curriculum and numbers of students per class. Findings will help stakeholders to inform future policies and practices towards improved quality of midwifery education in Afghanistan.

## Methods

We conducted a cross-sectional assessment of public and private midwifery schools from September to December 2017. The Midwifery Education Rapid Assessment Tool developed by Jhpiego was adapted for use in Afghanistan [18]. This tool, based on ICM's educational standards, was designed to assess five areas of pre-service midwifery education: infrastructure and management, teachers and preceptors, clinical practice sites, curriculum and students. The tool consisted of an interview guide for managers of midwifery schools, an interview guide for teachers and preceptors, a self-administered questionnaire for midwifery students and a clinical practice site observation form. Tools were pre-tested in two private schools in Kabul in August 2017.

Afghanistan had 8 IHS, one direct-entry bachelor's degree midwifery program, implemented by Kabul Medical University (KMU) (also treated as IHS for this assessment), 24 CME and 124 private midwifery schools at the time of this assessment (Fig. 1). Schools were purposively selected from five large population provinces namely Kabul, Balkh, Herat, Nangarhar and Kandahar to reflect school type and funding sources. The five IHS from these provinces with KMU were included (total 6 IHS). One CME from Kabul, Herat and Kandahar were included but Balkh and Nangarhar provinces did not have CME, therefore, the nearest CME programs (i.e. Baghlan instead of Balkh and Laghman instead of Nangarhar) were selected. As all the schools were supported either by the government or by United States Agency for International Development (USAID), two CME schools funded by other donors, both in Faryab province, were also included (total 7). Due to accessibility and security constraints in the five focus provinces, only 23 out of 124 private schools could be contacted, out of which 16 agreed to participate in the study. Sampling was nonrandom, and no statistical testing was intended.

Data collectors were ten Jhpiego Provincial Midwifery Officers and four members of the Afghan Midwives Association (AMA), all female midwives. They were trained in use of data collection tools, research methodology and ethics for five days. Teams of 2–3 data collectors visited each school for two days from September–December 2017. Data collectors reviewed register books and school records, visited a maximum of three on-going classes, visited clinical practice sites and conducted interviews with target participants. The assessment team monitored the data collectors in the field and data were checked for consistency. Jhpiego's Monitoring Evaluation and Research Manager conducted interviews with school managers, teachers and clinical preceptors. Data collectors asked students to fill in self-administered questionnaires. They observed school premises and school records, student logbooks and clinical registers to confirm data on infrastructure, management, curriculum and equipment.

Two members of the team entered and cleaned quantitative data in a Microsoft Excel database, transferred to STATA IC 15 for analysis. The assessment team lead completed quantitative analysis including calculation of counts, percentages, means and standard errors, medians and ranges for different school and health facility types. Preliminary findings of the survey were presented by the research team to school representatives and key stakeholders led by the MoPH in a validation workshop in March 2018.

## Results

Seven CME, six IHS (including the KMU bachelor program) and 16 private schools were assessed. Median number of years of activity was 7.6 (range 1.7–12) for CME, 39.5 (range 3.8–45.9) for IHS and 5.8 for private schools (range 1.6–10.8). The KMU program had been in operation for four years, but had not graduated any student at the time of assessment. Median number of students ever graduated from the selected schools was 67 for CME (range 25–106) and 406 for IHS (range 251–692); numbers of students graduated from private schools were unavailable.

## Infrastructure, equipment and management

More than 90% (26–28/29) of the schools had rooms for classes, desks for every student, classrooms with good ventilation and lights and unobstructed views for students. All schools accommodated no more than 30 students in one room. Fourteen out of 29 schools (48%) met all six classroom criteria (Table 1). While 28 (97%) schools had a library, only four (14%) had all nine recommended books (supplementary file 1). All schools reported having skills labs, which were actually open for students at the time of assessment in 20 (69%) schools and 22 (76%) had full-time skills lab managers. Childbirth simulators were available in 17 (59%) schools and all schools except one private one had newborn resuscitation models. Midwives served as managers in 21 (72%) schools and 22 (76%) managers had experience in midwifery, including one doctor who had been a midwife in the past (Table 1).

Table 1  
Infrastructure and available equipment during assessment visit, by school type

	CME (n = 7)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
<b>Classroom facilities</b>				
Desks for every student	7	6	15	28 (97%)
Elbow room for students	6	5	14	25 (86%)
Classrooms with sufficient light and ventilation	7	6	14	27 (93%)
Unobstructed view of subject matter in classrooms	7	6	13	26 (90%)
Specific teaching rooms	7	6	14	27 (93%)
Accommodation for 30 students per class	7	3	10	20 (69%)
Schools meeting all six criteria	6	2	6	14 (48%)
<b>Library</b>				
Library exists	7	6	15	28 (97%)
Library is open after official hours and during weekends	6	1	3	10 (34%)
All nine recommended textbooks available (listed in Supplementary file 1)	1	2	1	4 (14%)
<b>Skills lab</b>				
Skills lab open for individual/group practice	6	6	8	20 (69%)
Schools with full-time skills lab manager	6	6	10	22 (76%)
<b>Computer lab</b>				
Schools with computer lab	6	5	11	22 (76%)
Schools with one computer for every 10 students	5	5	8	18 (62%)
Schools with Internet connection	2	3	6	11 (38%)
<b>Equipment</b>				
Childbirth simulator (electronic manikin childbirth simulator, MamaNatalie, Noelle)	5	5	7	17 (59%)
Bony pelvis model	7	6	15	28 (97%)
Breast model	5	5	11	21 (72%)
Cervical dilatation model	5	6	4	15 (52%)
Fetal skull model	6	4	4	14 (48%)
Intrauterine contraceptive device insertion model	6	6	14	26 (90%)
Newborn resuscitation models, including NeoNatalie	7	6	15	28 (97%)
Perineum cutting and suturing simulators	5	4	6	15 (52%)
Pelvic model	7	6	13	26 (90%)
Implant insertion and removal kit	0	1	1	2 (7%)
Vaginal speculum	7	6	16	29 (100%)
Delivery kits	7	6	14	27 (93%)
Sterilizer	5	4	7	16 (55%)
Video or DVD player (may be located in computer lab) and associated teaching videos	5	4	11	20 (69%)
Thermometer in working order	7	6	15	28 (97%)
Antiseptic solutions	7	5	15	27 (93%)
Running water and soap and/or hand sanitizer	7	5	14	26 (90%)
<b>Teachers' office(s)</b>				
Electricity	7	6	16	29 (100%)
Running water	6	5	15	26 (90%)
Necessary supplies	7	5	12	24 (83%)

	CME (n = 7)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
Related textbooks	7	4	12	23 (79%)
Desks for teachers	4	2	4	10 (34%)

## Teachers and clinical preceptors

Observational visits to one, two or three ongoing classrooms were conducted when available. In these visits, median number of students per teacher was 8.3 (range 1.8–50) and students per preceptor was 6 (range 1.5–20). All IHS schools assigned specific personnel as clinical preceptors, while 6/7 (86%) CME schools and 11/16 (69%) private schools did so (Table 2).

Table 2  
Student-to-teacher and student-to-preceptor ratios

	CME (n = 7)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
<b>Number of classrooms observed</b>				
One	3	0	1	4
Two	2	3	1	6
Three	2	3	12*	17
<b>Theory-based classes</b>				
Number of students	252	630	1,429	2,311
Number of teachers	38	51	188	277
Median students-to-teacher ratio (range)	7.0 (4.0–20.0)	15.5 (6.0–43.3)	10.9 (1.8–50.0)	8.3 (1.8–50.0)
Number (%) of schools meeting criterion of one teacher per 30 students	7 (100%)	4 (67%)	13 (81%)	24 (83%)
<b>Practical studies</b>				
Number of schools with preceptors at their clinical sites	6 (86%)	6 (100%)	11 (69%)	23 (79%)
Number of students at school clinical sites	134	112	77	323
Number of preceptors at clinical sites	21	13	22	56
Median student-to-preceptor ratio (range)	5.0 (4.0–7.0)	7.3 (2.0–20.0)	4.0 (1.5–10.0)	6.0 (1.5–20.0)
* Two schools were excluded reporting unrealistically large student numbers considered error				

The assessment team conducted interviews with 163 teachers. From this group, 132 (81%) had practiced midwifery and 150 (92%) had previous teaching experience. In total, 95 (58%) teachers had been practicing midwifery for at least two years. Of 163 teachers, 113 (69%) had been trained in teaching skills and 88 (54%) in emergency obstetric and newborn care. A subgroup of 58 out of 163 (36%) teachers were willing to discuss their teaching practices with none of them reporting use of role-play as a teaching method. In addition, 51 clinical preceptors were assigned to the selected schools with 25 (49%) having no other parallel assignments in clinics and 41 (80%) preceptors received coaching from school teachers (Table 3).

Table 3  
Preparedness and competency of teachers

	CME (n = 7)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
<b>Number of teachers interviewed</b>	<b>33</b>	<b>36</b>	<b>94</b>	<b>163</b>
Range of teachers per school	3–6	3–10	2–10	2–10
<b>Background information of contacted teachers</b>				
Teachers ever practiced midwifery	29 (88%)	27 (75%)	76 (81%)	132 (81%)
Mean number of years of clinical practice	5.0	4.9	4.0	4.4
Teachers with at least 2 years of clinical practice	21 (64%)	21 (58%)	53 (56%)	95 (58%)
Teachers with previous teaching experience	28 (85%)	32 (89%)	90 (96%)	150 (92%)
Mean number of years teaching	3	6	4	4
Percentage of teachers with at least 2 years of teaching experience	19 (58%)	26 (72%)	70 (74%)	115 (71%)
Teachers with previous management experience	14 (42%)	9 (25%)	15 (16%)	38 (23%)
Mean number of years in management	1.8	1.9	0.7	1.2
<b>Training received</b>				
Teaching skills	31 (94%)	30 (83%)	52 (55%)	113 (69%)
Emergency obstetric and newborn care	26 (79%)	22 (61%)	40 (43%)	88 (54%)
Other clinical training*	26 (79%)	18 (50%)	46 (49%)	90 (55%)
<b>Number of teachers who responded to questions about teaching practices</b>	<b>14 (42%)</b>	<b>12 (33%)</b>	<b>32 (34%)</b>	<b>58 (36%)</b>
<b>Teaching methods reported</b>				
<b>Knowledge acquisition</b>				
Lecture/presentation with group participation	13 (93%)	11 (92%)	32 (100%)	56 (97%)
Project-based learning	12 (86%)	10 (83%)	23 (72%)	45 (78%)
Seminar /discussion	12 (86%)	9 (75%)	15 (47%)	36 (62%)
Group work	11 (79%)	7 (58%)	14 (44%)	32 (55%)
Role-play	0 (0%)	0 (0%)	0 (0%)	0 (0%)
<b>Clinical decision-making</b>				
Case studies	10 (71%)	7 (58%)	11 (34%)	28 (48%)
Problem-based learning	8 (57%)	8 (67%)	20 (63%)	36 (62%)
<b>Skills acquisition</b>				
Skills demonstration	9 (64%)	9 (75%)	16 (50%)	34 (59%)
Skills practice	4 (29%)	3 (25%)	5 (16%)	12 (21%)
Clinical simulated practice	3 (21%)	4 (33%)	2 (6%)	9 (16%)
<b>Number of clinical preceptors contacted</b>	<b>14</b>	<b>12</b>	<b>32</b>	<b>58</b>
<b>Number of clinical preceptors consented to participate</b>	<b>14 (100%)</b>	<b>11 (92%)</b>	<b>26 (81%)</b>	<b>51 (88%)</b>
Serve as preceptor with no other assignments	6 (43%)	4 (36%)	15 (58%)	25 (49%)
Practice predetermined number of cases together with students	6 (43%)	2 (18%)	8 (31%)	16 (31%)
Assigned to work on more than two cases of childbirth with each student (exempted from other tasks)	8 (57%)	6 (55%)	15 (58%)	29 (57%)
Assigned to work one on one with each student	10 (71%)	7 (64%)	20 (77%)	37 (73%)
Works with maximum two students per shift	8 (57%)	8 (73%)	20 (77%)	36 (71%)
Relief of workload while working with students	9 (64%)	6 (55%)	19 (73%)	34 (67%)

	CME (n = 7)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
Supported by academic faculty during work with students	12 (86%)	9 (82%)	20 (77%)	41 (80%)
* Including sexually transmitted infections, family planning, mental health, postpartum hemorrhage, eclampsia and pre-eclampsia, interpersonal communication, Essential Care for Sick Babies, postpartum intrauterine contraceptive device, Helping Babies Breathe, Helping Babies Survive and epidemiology,				

## Clinical sites

Schools had agreements with between one and 15 health facilities (median 3) serving as clinical practice sites for their students. The standard of assisting 40 uncomplicated births for graduation was mentioned in 16/29 (55%) schools. Median number of births, however, recorded as independently practiced, was 40 births (range 0–70) per student (Table 4).

Table 4  
Use of clinical sites by school type

	CME (n = 7)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
Schools with clinical sites for practical studies	7 (100%)	6 (100%)	16 (100%)	29 (100%)
Median number of health facilities used as clinical practice sites (range in bracket)	3 (1–8)	5.5 (1–8)	3 (1–15)	3 (1–15)
Median number of births assisted at graduation as reported by the clinical sites. (range in bracket)	41 (40–50)	40 (0–70)	22.5 (0–60)	40 (0–70)
School clinical sites policy requiring students to perform minimum of 40 births independently for graduation	7 (100%)	4 (67%)	5 (31%)	16 (55%)
Schools with clinical sites not located in the same vicinity	5 (71%)	5 (83%)	10 (63%)	20 (69%)
Schools providing transport for students and teachers to commute to clinical sites	6 (86%)	5 (83%)	13 (81%)	24 (83%)

For each school, one facility used as clinical site was selected including one basic health center, five comprehensive health centers, five provincial hospitals, 11 private health facilities, five regional hospitals and two specialized hospitals. These 29 facilities reported 90,297 uncomplicated births in the past six months. On average, 13 students were accommodated in eight hour working shifts in these facilities.

In a subset of 20 (69%) clinical sites facilities, data collectors were also allowed to review student logbooks showing that students assisted on average 14.6 births with the highest average of 40 for two SH. In this subgroup, preceptors in 4/20 (20%) health facilities (2 PH and 2 SH) declared that completing assistance to 40 births is enforced for graduation of the students. (Table 5).

Table 5  
Capacity of clinical practices sites, by facility type

Clinical site readiness	BHC (n = 1)	CHC (n = 5)	PH (n = 5)	Private (n = 11)	RH (n = 5)	SH (n = 2)	Total (n = 29)
<b>Availability of selected inputs</b>							
Number of midwives and nurses at day shift	1	6	28	49	29	8	121
Number of midwives and nurses at night shift	0	5	16	24	23	6	74
Sphygmomanometer	1	5	5	10	5	2	28 (97%)
Pinard/fetal stethoscope/Doppler (in any combination)	0	5	5	10	5	2	27 (93%)
Gloves	1	5	5	8	5	2	26 (90%)
Uterotonics (oxytocin or alternative)	1	5	5	8	5	2	26 (90%)
IV solution and IV set	1	5	5	8	5	1	25 (86%)
Sterile birth kit	1	4	5	9	5	2	26 (90%)
Decontamination solution	1	4	5	9	5	2	26 (90%)
Newborn resuscitation bag and mask	1	5	5	9	5	2	27 (93%)
Clinical guidelines available	0	4	5	3	2	2	16 (55%)
<b>Clinical services utilization in past 6 months</b>							
Uncomplicated births	52	21,526	8,013	5,250	36,578	18,878	90,297
Assisted vaginal births	2	2,698	3,007	382	2,471	1,358	9,918
Cesarean section	0	7,417	684	533	10,378	5,613	24,625
Antenatal care	1,096	8,369	6,577	11,969	22,367	1,689	52,067
Postnatal care	225	3,581	3,670	5,938	31,895	619	45,928
Family planning	572	4,258	3,298	1,929	21,543	13,973	45,573
<b>Educational capacity</b>							
Median number of students per shift (range)	4	6 (6-7)	12 (6-25)	15 (4-32)	6 (3-12)	31 (18-44)	7 (3-44)
Number of schools that use this facility as clinical site	1	13	16	19	16	36	-
Used by one school	1	1	1	8	1	-	12
Used by two to three schools	-	3	2	1	1	-	7
Used by four to five schools	-	1	2	2	3	-	8
Used by 6-21 schools	-	-	-	-	-	2	2
<b>Student checkout for competency in uncomplicated birth (for facilities where student logbooks were available for review)</b>							
Number of facilities where student logbooks were reviewed	1 (100%)	4 (80%)	4 (80%)	8 (73%)	1 (20%)	2 (100%)	20 (69%)
Median number of conducted births student logbook showed till the time of graduation	1	16.5	26.5	0	0	40	14.6
Students conducted 40 births independently for graduation/out of total logbooks observed	0/1	1/4	1/4	0/8	0/1	2/2	4/20 (20%)

## Curriculum

Different editions of midwifery curricula were in use in the schools including IHS 2006 midwifery curriculum, IHS 2010 midwifery curriculum, CME 2010 midwifery curriculum and national 2015 midwifery curriculum. Two (13%) private schools were using their own customized curriculum. Seven (24%) schools were using the national 2015 midwifery curriculum among which one IHS used IHS 2010 and one private school also used IHS 2006 complementarily. Five (71%) CMEs used CME 2010 curriculum, while 13 (45%) schools including one CME used IHS 2010 curriculum. One (17%) private school used IHS 2006 and KMU Bachelor program had its own curriculum.

Teaching materials for curriculum implementation were provided by MoPH for 27 schools, while the KMU Bachelor program and one private school developed their own learning materials.

## Students

Self-administered questionnaires were given to 697 students from 28 schools. One CME school declined to participate. Access to clinical sites was reported by 633 (91%) students, access to skills labs by 631 (91%) and access to computer labs by 457 (66%). Barriers cited by students were lack of access to health facilities included low caseload, lack of equipment and supplies, insufficient number of preceptors or negligence. All 116 CME students said they will work as midwives upon graduation; while 117 of 131 IHS students (89%) and 384 of 450 private school students (85%) stated such intention (Table 6).

Table 6  
Education experience of students

	CME (n = 6)	IHS (n = 6)	Private (n = 16)	Total (n = 29)
<b>Respondents</b>				
Number of students interviewed	116	131	450	697
Mean number of students per school	19	22	28	25
<b>Education experience</b>				
Students had access to facilities at clinical site	115 (99%)	111 (85%)	407 (90%)	633 (91%)
<i>Reasons for students with no access</i>				
Lack of cases due to low caseload		1	2	3
Lack of equipment and supplies		5	2	7
Neglect or prohibition		1	2	3
Insufficient preceptors		2	0	2
No details	1	11	37	49
Students had access to facilities at skills lab	115 (99%)	116 (89%)	400 (89%)	631 (91%)
<i>Reasons for students with no access</i>				
Lack of equipment and supplies	0	1	0	1
Neglect or prohibition	0	1	1	2
No details	1	13	49	63
Students had access to facilities at computer lab	94 (81%)	89 (68%)	274 (61%)	457 (66%)
<i>Reasons for students with no access</i>				
Lack of equipment and supplies	8	5	18	31
Neglect or prohibition	0	0	1	1
Male dominated usage	0	0	1	1
No details	14	37	156	207
Students feel safe and secure	112 (97%)	123 (94%)	421 (94%)	656 (94%)
Students feel ready to work as midwives	116 (100%)	117 (89%)	384 (85%)	617 (89%)
<b>Students who reported miscellaneous challenges</b>				
Lack of preceptors	0 (0%)	16 (12%)	5 (1%)	21 (3%)
Lack of clinical work	8 (7%)	25 (19%)	91 (20%)	124 (18%)
Prohibition and disrespect	0 (0%)	10 (8%)	4 (1%)	14 (2%)
Lack of equipment and supplies	2 (2%)	3 (2%)	10 (2%)	15 (2%)
Lack of transport facilities	0 (0%)	19 (15%)	12 (3%)	31 (4%)
Poor quality of clinical work	0 (0%)	0 (0%)	2 (0%)	2 (0%)
Low caseload due to costs	0 (0%)	0 (0%)	3 (1%)	3 (0%)
Clients refuse to cooperate	0 (0%)	0 (0%)	2 (0%)	2 (0%)
<b>Motivation and concerns</b>				
Students themselves decided to study midwifery	112 (97%)	123 (94%)	400 (89%)	635 (91%)
Students plan to work as midwives after graduation	111 (96%)	124 (95%)	423 (94%)	658 (94%)
Students have a specific facility in mind to work in	80 (69%)	75 (57%)	242 (54%)	397 (57%)
Students concerned about employment	1 (1%)	23 (18%)	89 (20%)	113 (16%)
Students concerned about career pathway	(0%)	(0%)	5 (1%)	5 (1%)

## Discussion

Many schools are preparing midwives in Afghanistan with mixed results. Midwives may graduate from these schools without meeting global or national requirements for being competent skilled midwives who are able to perform life-saving interventions with confidence as mandated by ICM [19].

Classrooms, skills labs and clinical practice sites of most schools had the required infrastructure, equipment and supplies. The majority of schools used one of the once-approved versions of the curricula, though some were outdated. Midwives were in leading positions in most schools and most teachers had experience in midwifery or management. Students, especially in CME schools, reported feeling safe and secure in their schools and were determined to work as midwives in the future. This is encouraging in the light of findings of a study in 11 provinces showing employment rates for CME graduates from 28.4% (in Khost province) to 84.3% (in Herat province) [20]. Recruitment into CME programs is aligned with a health workforce approach to encourage retention and commitment to serve their own communities.

Certain serious shortcomings, however, are noted and require corrective interventions by MoPH, ANMC and schools. Shortages of learning materials, teachers and preceptors and overburdened clinical sites were identified in several schools, while low caseloads in smaller facilities was also observed. Number of students per teacher varied largely and was as high as 50 in one school. One teacher per 45 students has also been observed in other low-income countries [21]. Shortage of teachers can deprive students of support and interaction and compromises quality education. Some schools with higher numbers of teachers may have many part-time teachers serving in different schools. This may affect level of attachment to specific cohorts of students and compromises commitment and accountability to competency building of students. Knowing that optimizing teacher-student ratios require additional investment, ANMC and MoPH should ensure such investments are made. Some schools in Afghanistan tried to employ new graduates to fill these gaps with rather unexperienced teachers [22]. MoPH and ANMC, however, have to verify that schools are established with sufficient numbers of competent teachers and preceptors and advocate to focus on quality and quantity of faculty per standards. Only then is Afghanistan in a better position to meet Sustainable Development Goal 3 to improve maternal and newborn healthcare, as emphasized by Strengthening Quality Midwifery Education for Universal Health Coverage in 2030 [23].

Competence of teachers and preceptors was questionable with many of them having no training in evidence-based clinical and teaching methodologies, practicing traditional lectures instead of more interactive student centered methods. Poor teaching and clinical skills of midwifery faculties and preceptors are commonly found in low- and middle-income countries. Dissatisfaction of students as a sign of poor quality education was shown in Ethiopia [24]. Regular capacity assessments and continuing education are required to keep teachers up-to-date with standards and evidence-based clinical practices [25]. ANMC should monitor the maximum number of students per teacher and preceptor and require schools to demonstrate their investments in continued education of their faculties [26].

Complacency with achieving ICM competencies will lead to less educated midwives who are not able to deliver high-quality care [27]. The 2015 national midwifery curriculum requires students to independently perform 40 births to become competent and competency-based education is the basis of midwifery education in Afghanistan [28]. A review of 73 countries showed that more than 30 births assisted by students occurred in 32 (44%) of them, implying similar constraints globally [29]. ANMC are in a unique position as they established regulatory systems to learn from experiences of other countries in ensuring midwives to be competent at graduation. All necessary elements of high-quality midwifery care must be taught, balancing theory and practice to produce fully competent midwives upon graduation [30].

Midwifery care is cost-effective, affordable and sustainable. It has contributed to improvement of maternal and newborn health [31, 32]. Midwifery reduces maternal and newborn deaths and stillbirths, strengthens economic activity and ripples favorably across macroeconomics, provides women with decent work and results in economic stabilization in society [32x]. Specifically, midwifery leads to better health outcomes. Insufficient monitoring of midwifery education is recognized by the global community as a major area of concern [23]. In Afghanistan, midwifery education was not explicitly mentioned among high-priority areas in the 2011 draft national policy on nursing and midwifery [33]. Due to lack of strong positive and direct language in the policy it is difficult to encourage clinical facilities to willingly and enthusiastically accommodate learning opportunities for student-midwives.

Clinical sites, often independent of the schools, do not bear the responsibility of providing sufficient clinical work for students [34]. On the other hand, clinical sites face challenges with simultaneously competing students, human resource constraints and lack of professional preceptors [35]. Congestion of students seeking practice opportunities in a single health facility makes it difficult to expose them to adequate case-load [36]. It is important to clarify that midwifery schools are accountable for ensuring clinical practice opportunities of adequate quality and competency building of their students [37]. The standards of 40 births attended by students was not consistently met; for comparison a third of midwifery students in Ethiopia met their standard of only 20 births [38]. Caseloads in many hospitals are high and it is achievable in Afghanistan to ensure students attend 40 births. It needs, however, commitment to students working 24/7 and improved coordination of student placements. These issues can be addressed by ANMC through revised accreditation processes and addressing socio-cultural barriers.

Inconsistency of curricula in different schools is a chronic issue with only five among the nine IHS schools using the latest curriculum in 2011 [39]. The now obsolete 18-months CME 2010 curriculum inadvertently resulted in the misconception that CME graduates are less qualified than IHS ones. Schools should implement the latest national standard curriculum, and ANMC and MoPH should establish verifiable routines and information management systems to monitor and mitigate any deviations [6]. In Afghanistan, where SBAs include midwives, obstetricians and female general practitioners trained in Emergency Obstetric and Newborn Care (EmONC), midwives are more evenly distributed geographically among all SBAs, and provide 42% of all maternal and newborn healthcare [10, 12]. Competency-based midwifery education with enough clinical practice is required for producing a competent workforce [40]. Midwives want better education, including access to higher education and development, to be empowered to support quality, equity and dignity as healthcare priorities [41].

## Limitations

This study was a rapid assessment conducted in purposively selected midwifery schools. Only a fraction of all private schools could, however, participate. Very few students who reported lack of access to some facilities, dared to mention access barriers indicating biased responses in favor of the schools. Very

few schools were willing to share logbooks of their students. Therefore, caution is advised in generalizing the findings, especially to private midwifery schools in general.

## Conclusion

Strong competent midwives have the potential to transform and improve the quality of maternity care for strengthening reproductive, maternal and neonatal health in Afghanistan as well as to contribute to building a resilient health system. MoPH and ANMC need to prioritize and prepare an action plan to strengthen high-quality midwifery education and make strategic decisions on midwifery education management, compliance with educational standards through accreditation and enabling educational environments.

## List Of Abbreviations

**AHS** Afghanistan Health Survey

**AMA** Afghan Midwives Association

**AMNEAB** Afghanistan Midwifery and Nursing Education Accreditation Board

**ANMC** Afghanistan Nurses and Midwives Council

**BPHS** Basic Package of Health Services

**CME** Community Midwifery Education

**EmONC** Emergency Obstetric and Newborn Care

**EPHS** Essential Package of Hospital Services

**GDHR** General Directorate of Human Resources

**ICM** International Confederation of Midwives

**IHS** Institute of Health Sciences

**KMU** Kabul Medical University

**MMR** Maternal mortality ratio

**MoPH** Afghanistan Ministry of Public Health

**NSIA** National Statistics and Information Authority.

**SBA** Skilled Birth Attendants

## Declarations

**Ethical approval and consent to participate:** The Johns Hopkins Bloomberg School of Public Health Institutional Review Board considered the assessment as not human subjects research. The Afghan Public Health Institute Review Board (IRB #43876) also approved the assessment. Data collectors obtained verbal informed consent from each participant, and did not collect any personal information about school managers, teachers, preceptors and students.

Hereby we confirm that all methods were performed in accordance with all relevant items of the STROBE Statement—Checklist of items that should be included in reports of cross-sectional studies.

**Consent for publication:** Not applicable

**Availability of data and materials:** The corresponding author is willing to provide the data on request.

**Competing interests:** The assessment was funded by the United States Agency for International Development (USAID) Afghanistan FP/MNCH Project (AID-306-A-15-00002) The contents of this manuscript are the responsibility of the authors; the funder had no roles in the design of the study, data collection, analysis, interpretation and writing the manuscript.

**Authors' contributions:**

PM: Conceptualization, methodology, validation, analysis, writing of the manuscript; design and implementation of the research.

MJ: Conceptualization, methodology, validation, analysis, writing of the manuscript

SC: Conceptualization, methodology, validation, analysis, writing of the manuscript; design and implementation of the research.

FA: Writing, review & editing, implementation of the research.

NA: Conceptualization, writing, review & editing, implementation of the research.

HT: Conceptualization, methodology, validation, analysis, writing of the manuscript; design and implementation of the research.

YMK: Writing, review & editing.

JR: Writing, review & editing.

JS: Writing, review & editing.

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## Figures

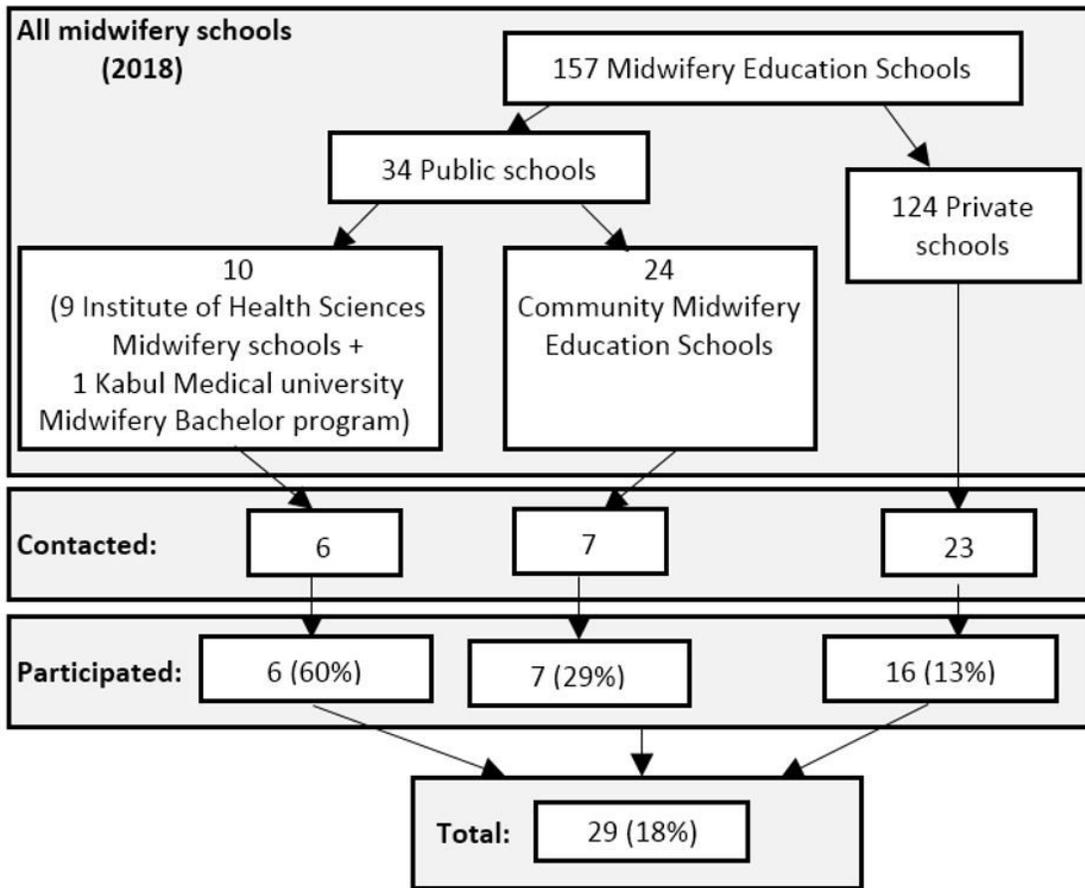


Figure 1  
Midwifery schools in the rapid assessment

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