

Midwifery training in post-conflict Afghanistan: tensions between educational standards and rural community needs

Ghulam Farooq Mansoor,^{1*} Peter S Hill² and Peter Barss³

¹School of Population Health, The University of Queensland, Australia. Currently, Senior Research Manager, at Health Protection and Research Organization, Kabul, Afghanistan, ²Associate Professor, Australian Centre for International and Tropical Health, School of Population Health, The University of Queensland, Australia and ³Professor and Chair Injury Prevention, School of Population Health, The University of Queensland, Australia. Currently, Medical Officer of Health, Interior Health, British Columbia, Canada

*Corresponding author. House #P860, Street #10, Taimani, District #10, Kabul, Afghanistan. Tel: +93788269074 or +93798685377. E-mail: farooqmansoor@uqconnect.edu.au or farooqmansoor@gmail.com.

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Objective	To compare the performance of students selected for midwifery education by three methods: community mobilization in rural Afghanistan, a regional examination by the Institute of Health Sciences (IHS), and the National University Entrance Examination (NUEE).
Methods	A retrospective survey was conducted in January 2009 on academic records of 178 midwives trained at the IHS in Herat, including 147 graduates from 2003–08 and the cohort of 31 final-semester students graduating in March 2009. An interview survey of the 31 final semester students was also conducted. Outcome variables included knowledge, skills and employment status, stratified by method of selection. Individual attributes including completion of high school, marital status, age and urban/rural residence were also assessed. Data analysis used STATA version 2009. Significance was measured by appropriate statistical tests. Findings were verified by key informant interviews.
Results	Ninety-six per cent of midwifery graduates selected by communities were employed, compared with 74% chosen by the IHS and 82% by the NUEE. Sixty-three per cent of community-selected graduates were working in rural locations, compared with 43% recruited by IHS and 9% by the NUEE. While fewer midwifery graduates selected by communities had completed high school and their academic performance was slightly lower during training, there was no difference in their pass rates and acquisition of practical skills.
Conclusions	Community mobilization for local selection of trainees achieved significantly higher employment levels of trained midwives in high-risk rural communities than usual selection methods, without compromising quality of skills.
Keywords	Afghanistan, birth attendant, competency-based education, midwife, rural health services, rural workforce

KEY MESSAGES

- Midwifery students recruited by community mobilization performed similarly to those recruited through the Institute of Health Sciences and the National University Entrance Examination in completing their training, examination pass rates and acquisition of practical skills, despite most of the community recruits having less than 12 years of schooling.
- With respect to the priority issue for the health workforce (deployment to rural areas of need), community recruits outperformed the other two recruitment groups.
- A collaborative approach between the Ministry of Public Health and the Ministry of Higher Education, recognizing both workforce requirements and educational standards, is needed to meet obstetric needs of rural populations.

Introduction

The importance of skilled birth attendants (SBAs) in reducing maternal mortality was acknowledged at the launch of the Safe Motherhood Initiative in 1987 (Mahler 1987). This was reaffirmed in the fifth Millennium Development Goal (MDG) of a 75% reduction in maternal mortality by 2015. Training of SBAs was re-emphasized as progress towards this goal lagged drastically in low-income countries (UNFPA 2004; PAI 2007).

Although not all skilled birth attendants can be called midwives, all midwives should, when trained properly, possess the necessary skills and abilities to function as skilled birth attendants. Skilled midwives are key to safe pregnancy and childbirth and to reaching MDG-5 and MDG-4 (UNFPA 2007). According to the World Health Organization (WHO), the International Federation of Gynaecology and Obstetricians (IFGO), and the International Midwifery Association (IMA), a midwife:

“is a person who, having been regularly admitted to a midwifery educational program duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery. She must be able to give the necessary supervision, care and advice to women during pregnancy, labor and the postpartum period, to conduct deliveries on her own responsibility and to care for the newborn and the infant. This care includes preventative measures, the detection of abnormal conditions in mother and child, the procurement of medical assistance and the execution of emergency measures in the absence of medical help. She has an important task in health counseling and education, not only for women, but also within the family and the community. The work should involve antenatal education and preparation for parenthood and extends to certain areas of gynecology, family planning and childcare. She may practice in hospitals, clinics, health units, domiciliary conditions or in any other service.” (WHO 2007a)

Ensuring midwives' competence in essential obstetric care (EOC) and improving their sound decision-making skills have been key concerns for educators and are reflected in the development of methods such as competency-based training (Sullivan 1995; Penny and Murray 2000). However, in seeking to reduce maternal mortality in least-developed countries, this needs to be complemented by providing access to their care, through successful deployment to understaffed high-risk rural locations.

In Afghanistan, the maternal mortality ratio after 25 years of conflict was estimated at 1900 per 100 000 live births (WHO 2007b). The ratio ranged from 400 in the capital city of Kabul to 6500, the highest estimate ever recorded, in the remote rural district of Badakhshan. Among the causes is a severe shortage of female health care providers (UNICEF and CSO 2003; Bartlett *et al.* 2005). In 2002, only 25% of the 12 565 health workers in Ministry of Public Health (MoPH) facilities were female. Of these, only 199 were midwives, half of whom were based in Kabul (MoPH 2002).

The alarming shortage of SBAs has been addressed by training hospital midwives at the Institute of Health Sciences (IHS) campuses, and community midwives at provincial hospitals. Hospital midwives can work in hospitals and Comprehensive Health Centres. Community midwifery graduates are limited to Comprehensive Health Centres and Basic Health Centres, with outreach services to nearby villages. Development of a specialized midwifery workforce in preference to nurse midwives was a response to the policy priority of reducing maternal mortality. It also reflects a shift towards specialization of the health workforce (Currie *et al.* 2007; Fauveau *et al.* 2008).

The new midwifery curriculum uses competency-based training to develop key skills through a self-paced approach. This allows students of different educational levels to continue practicing until competency is achieved. In addition, the problem-solving approach encourages collaborative learning and improves decision making among all students, regardless of level of prior education (Penny and Murray 2000).

Curricula for hospital and community streams are similar. Both curricula aim to ensure mastery of core competencies to provide the entire continuum of care for pregnant mothers and newborn babies. However, selection criteria for student recruitment and duration of the training differ for the two streams. The hospital midwifery programme consists of four 17-week semesters (68 weeks), while community midwifery educational (CME) training is same length (68 weeks), but is taught over three 6-month phases.

Throughout Afghanistan from 2004 to 2009, international donors and the MoPH contracted out five IHS and 22 CME training programmes to non-governmental organizations (NGOs) (Currie *et al.* 2007). Herat has one of the five IHS campuses in the country, tasked with training hospital midwives for the five western provinces. According to MoPH midwifery education policy, IHSs train only hospital midwives. However, with no CME programme in Herat, the IHS uses the hospital midwifery curriculum to train additional midwives for

more than 70 health clinics (Comprehensive Health Centres and Basic Health Centres) in Herat's rural provincial districts.

With a view to increasing rural recruitment during the post-Taliban period, when few women had high-school qualifications, between 2003 and 2009 the Herat IHS selected midwifery students by three methods. The first two methods included the usual regional selection of high-school graduates by the IHS and nationally by the Ministry of Higher Education (MoHE). The IHS had its own examination at sub-national level, and some effort was made to consider rural needs. The MoHE used the National University Entrance Examination (NUEE), a general examination for all high-school graduates, which selects students based only on examination results, and does not consider rural needs. Furthermore, since this examination is usually given in major cities, most rural women are unlikely to attend even if they have managed to complete high school.

The third recruitment method was selection of students from rural areas through a process of community mobilization. Most had fewer than the 12 years of high-school education required for graduation, consistent with the generally low levels of rural female education. While community recruitment targeted rural workforce needs, tensions arose over perceived compromises of educational standards within the educational sector. Hence the broader selection criterion of 9 to 12 years schooling for admission to IHS hospital midwifery training was discontinued in 2008, and the requirement of high-school graduation reintroduced, with students selected either through the NUEE or by IHS (MoPH 2005a). Because of a shortage of high-school graduates in rural areas and unwillingness of city women to travel and work there, this policy change has resulted in lower intake from, and deployment to, rural locations. The community midwifery programmes in provincial hospitals also changed their selection criterion in 2008, from 6 to 9 years of school to 9 to 12 years.

No evaluation has been conducted to assess the outcomes for these different selection methods. Pertinent outcomes include both academic performance and the key issue of deployment to rural health facilities where midwives are most needed. This study aimed to compare success in acquisition of knowledge and skills and post-graduation employment by method of selection for the IHS midwifery programme in Herat. The research has assumed added importance due to the reintroduction of high-school graduation as an admission requirement to the IHS, for the stated reason of graduating more highly educated midwives.

Methods

Study dates and population

Field work was completed during January 2009. The main study population consisted of a census of all 178 students enrolled in the Herat midwifery education programme between 2003 and 2008, including those about to graduate in March 2009. The latter subgroup consisted of the cohort of 31 students in their final semester. The study assessed and analysed records available at the IHS for all 178 students. The 31 students still in training were also assessed by a self-administered questionnaire; due to logistic and financial constraints it was not

feasible to contact graduates. For comparison and analysis, students were stratified by selection method. Many community-selected students had not completed high school, and most were from rural areas 60–200 kms from a major city. IHS-selected students were mainly high-school graduates, usually from urban areas; however, they had signed an agreement with IHS to move to rural areas upon graduation. University-selected students were mainly from urban areas, but not required by the MoHE to sign a service agreement with the IHS. Key informants were interviewed in their local language by the principle investigator (PI); these included staff from the provincial health directorate, IHS management and faculty, and staff from key NGOs involved in midwifery training programmes in Herat. The interviews were continued until data saturation was reached, with no further information being obtained in additional interviews.

Assessment of knowledge acquisition by the IHS

The first semester of midwifery training focused on pre-clinical topics. The following three dealt with obstetric and newborn care, and family planning. Knowledge was verified each semester by formative and summative evaluations, with a 50% passing grade for all para-clinical subjects in the first semester and 70% in clinical subjects in the succeeding three semesters. Students failing a test were retested each semester.

Assessment of skills acquisition by the IHS

There were 28 core midwifery skills that every midwife, hospital or community should acquire. Competency was developed during three semesters of practice on models and on real patients. Students unable to achieve competency in all skills were given extra practice time after the final semester until they gained competency in all. Performance was assessed by the institution during the formal training period. Graduates from the Herat IHS were called hospital midwives, although many were meant to work in rural areas, as for CME graduates trained at provincial hospitals.

Study design and methods

A retrospective analysis of institutional records for all graduates and final semester students about to graduate was completed. In addition, a cross-sectional survey was done of the latter group. Key informant interviews were also used, mainly to verify survey results.

Participant selection, data management

Student records of the 178 trainees were reviewed and data extracted for demographics, selection method, performance in knowledge and skills, and deployment status and location. The 31 students about to graduate completed a questionnaire survey to assess factors related to selection and deployment to rural or urban facilities. Further insight into findings was sought by key informant interviews using semi-structured open-ended questions, audio-taped in their local languages. Data were entered into a spreadsheet by an IHS employee and the PI, and re-verified by a third IHS employee.

Data analysis

Frequencies and cross tabulations were used to assess factors potentially associated with outcomes. Significance was verified using chi-square for homogeneity, two sample t-tests and one-way ANOVA, as appropriate. The STATA statistical package, version 2009, was used for analysis. Qualitative interviews were transcribed to English by the principle investigator after repeated listening to the recorded interviews; back translation of the interviews into the original language was verified by the interviewees. Data were then analysed using Kruger's method of framework analysis and key themes extracted (Rabiee 2004).

Ethical clearance

The study protocol was approved by the ethics committee of the University of Queensland. Approval of the local provincial health director was obtained for data collection from the different sources. An information sheet and a consent form describing study aims and confirming voluntary participation unrelated to training outcomes were translated into the local language and provided to students being interviewed. Verbal consent of key informants was sought before recording interviews.

Results

Of 178 total enrolments in the training programme between 2003 and 2008, 50 had been chosen by their community, 69 by IHS examination and 59 by the NUEE. A total of 139 students had already graduated from IHS midwifery training and 31 were about to graduate at the time of assessment. Another eight had failed, transferred elsewhere or quit; of these two had been recruited through community mobilization and three each by IHS examination and NUEE. Records of all 139 graduates and 31 graduating students were reviewed. Of the latter, 97% (30/31) participated in the questionnaire survey. The eight students who had failed, transferred to other places or quit the midwifery programme were excluded. Key informants interviewed included eight faculty and managers from the IHS, and NGO representatives involved in technical and administrative support of the midwifery programme.

Analysis of student records for 2003–09 of the midwifery training programme

Attributes of students

Of 170 students, 28% ($n=48$) had been enrolled by community mobilization, 39% (66) by the IHS and 33% (56) by NUEE. Students chosen by their communities were mainly from rural areas and most had not completed grade 12 (Table 1). IHS recruits were mainly urban or semiurban and about three-quarters were high-school graduates, but more were from rural areas than the NUEE group, who were mainly urban and all high-school graduates. These differences in residence and in prior schooling among the three groups were highly significant ($P < 0.001$).

Knowledge and skills acquisition

Knowledge scores differed significantly between community and NUEE students, but not between community and IHS

students. However, there were no differences among the groups in pass rates on first attempt at examinations during all four semesters (Table 1). Furthermore, there were no differences in mastery of practical skills on models or on patients among the three recruitment groups. Prior educational level was positively associated with knowledge performance scores and development of competency in midwifery skills on patients. Nevertheless, while high-school graduates did score higher than non-graduates, their pass rates were similar (Table 2). Married students had lower scores and pass rates than unmarried; however, with average score as a dichotomous variable (fail and pass) and adjustment by logistic regression for prior education, enrolment method and marital status, the difference was not significant. Community students performed more consistently, i.e. with less variability among them in scores achieved and acquisition of practical skills, than those selected by the other two methods (Table 1, standard deviations, and Figure 1, box plots). Some students from the NUEE had high scores and achieved a high number of skills while others scored lower and obtained a low number of skills.

Attendance at deliveries

Non-high-school graduates attended an average of 39 (95% CI: 36, 43) deliveries compared with 57 (95% CI: 53, 62) for graduates.

Deployment and location

Community recruits were 96% employed, including 63% in rural areas, compared with 74% employment, 43% rural, for IHS recruits, and 82%, 9% rural, for NUEE (Table 1). There were only two unemployed community-selected midwives, and both had left Afghanistan for family reasons. Employment of midwives was inversely correlated with prior education, with more non-high-school graduates employed than graduates (OR 7; 95% CI: 2, 32). When adjusted for selection method and age, prior education still had marginally significant inverse association with employment (OR 6; 95% CI: 1, 28).

Questionnaire survey of the 2009 graduating cohort

The 2009 students about to graduate had all completed high school. Out of 30, 77% (23) had enrolled through the IHS, 20% (6) through NUEE and only one by community mobilization. As for residence, 66% (22) came from Herat city, 17% (4) from semi-urban areas and 17% (4) from rural areas.

Post-graduation employment and reasons for non-employment

Of the 2009 graduating cohort, only 40% (12/30) had found employment to join after graduation. This included the single student selected by her community, 11 of the 23 IHS recruits and none of the six NUEE recruits. As for employment prospects by location of residence, 100% of rural residents and only 27% of urban had been offered jobs.

Of the 60% (18) of students reporting no work yet confirmed, 33% (6) indicated that this was linked to having enrolled through the NUEE, since no bond or service obligation was required at enrolment. A further 50% (9) of students, all IHS selected, reported having signed agreements to work in semi-urban areas; however, there were no vacant positions in such locations. Finally, 17% (3) of city students who had

Table 1 Midwifery graduates by source of recruitment, and by personal attributes, deployment and performance indicators. Midwifery training programme, Herat, Afghanistan, 2003–09 ($n=170$)

Variable	Categories	Type of recruitment ^a				P
		Community ($n=48$)	IHS ($n=66$)	NUEE ($n=56$)	Total ($n=170$)	
Personal attributes of graduates						
Age	Mean, SD	22 (5)	23 (5)	21 (3)	22 (5)	0.871 ^b
Marital status ^d	Married	30 (63%)	44 (67%)	22 (39%)	96 (56%)	0.006 ^c
Prior schooling	<12 years	35 (73%)	17 (26%)	0	52 (31%)	<0.001 ^c
Residence	Urban	1 (2%)	29 (44%)	39 (70%)	69 (41%)	<0.001 ^c
	Semi-urban	16 (33%)	16 (24%)	10 (18%)	42 (25%)	
	Rural ^e	31 (65%)	21 (32%)	7 (12%)	59 (35%)	
Performance indicators						
Scores	Mean, SD	76 (12)	79 (11)	82 (11)	79 (12)	0.027 ^{tt}
Pass on first attempt	Number, %	29 (60%)	42 (64%)	41 (73%)	112 (66%)	0.36 ^c
No. of skills achieved	On models: mean, SD	28 (0.5)	27 (2)	27 (1)	27 (1.4)	0.680 ^b
	On patients: mean, SD	18 (4)	18 (6)	18 (5)	18 (5)	0.870 ^b
No. of deliveries attended	Mean, SD	47 (22)	54 (22)	54 (22)	52 (22)	0.715
Deployment status and location						
Employed	Urban	4 (9%)	17 (35%)	24 (52%)	45 (32%)	<0.001 ^c
	Semi-urban	13 (28%)	11 (22%)	18 (39%)	42 (30%)	
	Rural ^e	29 (63%)	21 (43%)	4 (9%)	54 (38%)	
Unemployed	Unemployed	2 (4%)	17 (26%)	10 (18%)	29 (17%)	0.010 ^c

Notes: ^aCommunity=chosen by the community, IHS=chosen by the Institute of Health Sciences; NUEE=chosen by National University Entrance Examinations.

^bOne-way ANOVA (testing homogeneity among three groups).

^cChi-square (testing homogeneity among three groups).

^dAll other students were single; percentages rounded; hence some columns do not total 100%.

^eRural areas were 60–200 km away from a major city.

initially agreed to work in rural areas upon graduation were now unwilling to go to a rural area, reporting security concerns.

Reported factors affecting deployment

The 12 students with an identified place to work were asked about the most important factors facilitating their deployment. Belonging to the same community and residing in an extended family providing support and protection in rural areas were reported by 58% (7), a bonded obligation to the IHS by 33% (4), and the higher salary in rural areas by 9% (1). Regarding concerns about future work, lack of security was cited by 42% as most important, while the remaining 58% reported other concerns including lack of medical equipment, proper schools for children and poor living conditions.

Perceptions on community mobilization for midwifery education

The graduating cohort students were asked their opinions on appropriate selection criteria for midwifery training. Although 97% were high-school graduates chosen by methods other than community mobilization, their responses were divided with 56% stating that being from the community and selected on the basis of community need were most important, while the remaining 44% identified graduation from high school as the key criterion for recruitment. As for motivating women from rural areas to enrol in midwifery training, 80% identified

financial assistance together with family permission and support as the two most important factors.

Perceptions of motivators to work in rural areas

The graduating students were asked their opinions on motivators for city midwives to work in rural areas. Security together with family permission and accompaniment to the rural area were noted by 90% as the two most important factors. The remaining students mentioned availability of schools for children, proper living conditions and higher pay as most important.

Key informant interviews

The main finding from key informants was that community students' expectation of employment in rural areas gave them greater motivation to acquire practical skills.

Discussion

Overview of findings

Students recruited by community mobilization performed similarly to those recruited through IHS and NUEE in completing their training, pass rates on examinations and acquisition of practical skills, even though most of the community recruits entered midwifery training with less than

Table 2 Performance in knowledge and skills acquisition and deployment by personal attributes of midwifery graduates. Midwifery training programme, Herat, Afghanistan, 2003–09 ($n=170$)

Variables	<i>n</i>				<i>P</i>
Knowledge score		Mean	SD	95% CI	
a. By marital status					
Single	74	82	10	80, 84	0.003 ^a
Married	96	77	12	74, 79	
b. By prior education					
<12 years	52	74	12	71, 78	0.0004 ^a
≥12 years	118	81	11	79, 83	
Pass rate in knowledge assessment		No. passed		% passed	
a. By marital status					
Single	74	55		74%	0.042 ^b
Married	96	57		59%	
b. By prior education					
<12 years	52	29		56%	0.065 ^b
≥12 years	118	83		70%	
Skills achieved by prior education		Mean	SD	95% CI	
a. On patients					
<12 years	52	15	5	14, 17	<0.001 ^a
≥12 years	118	19	5	18, 20	
b. On models					
<12 years	52	26.6	1.3	26.3, 27	0.002 ^a
≥12 years	118	27.4	1.4	27.1, 27.6	
c. No. of deliveries attended					
<12 years	52	39	14	36, 43	<0.001 ^a
≥12 years	118	58	23	53, 62	
Deployment		Mean	SD	95% CI	
a. By age in years					
Employed	141	21	4	21, 22	0.002 ^a
Unemployed	29	24	6	22, 27	
		No. employed		% employed	
b. By prior education					
<12 years	52	50		96%	0.042 ^b
≥12 years	118	91		77%	

Notes: ^at-test; ^bchi-square test.

12 years of schooling. While community recruits slightly underperformed on theoretical knowledge, their practical performance was equal to the others, and more consistent among students. With respect to the priority issue for the health workforce—deployment to rural areas of need—community recruits outperformed the others. This highlights the importance of including students from rural areas for the midwifery programme in sufficient numbers to meet rural needs. Their deployment to rural areas is much more feasible, fulfilling the MoPH objective of increasing access to maternal and newborn care in underserved areas.

The odds of being unemployed as a midwife were six times greater among recruits who entered with grade 12 education, i.e. (27/118) 23%, versus (2/52) 4% in those enrolled with less

than 12 year education. This remained significant even when adjusted for potential confounders. This is not surprising since the more highly educated students were mainly from urban areas with few job openings, while the others had been selected by their rural communities with serious shortages of trained midwives. Similarly, unemployment in general was 4.5 times greater among urban residents compared with rural, 35% (24/69) versus 8% (5/59), probably reflecting urban job saturation and greater rural demand (see Table 2).

Although having completed high school is not in itself causal for unemployment, it may be associated with other factors that are: The status of midwifery has been low in many countries where the profession may not be well integrated into health services nor appropriately paid to compensate for irregular

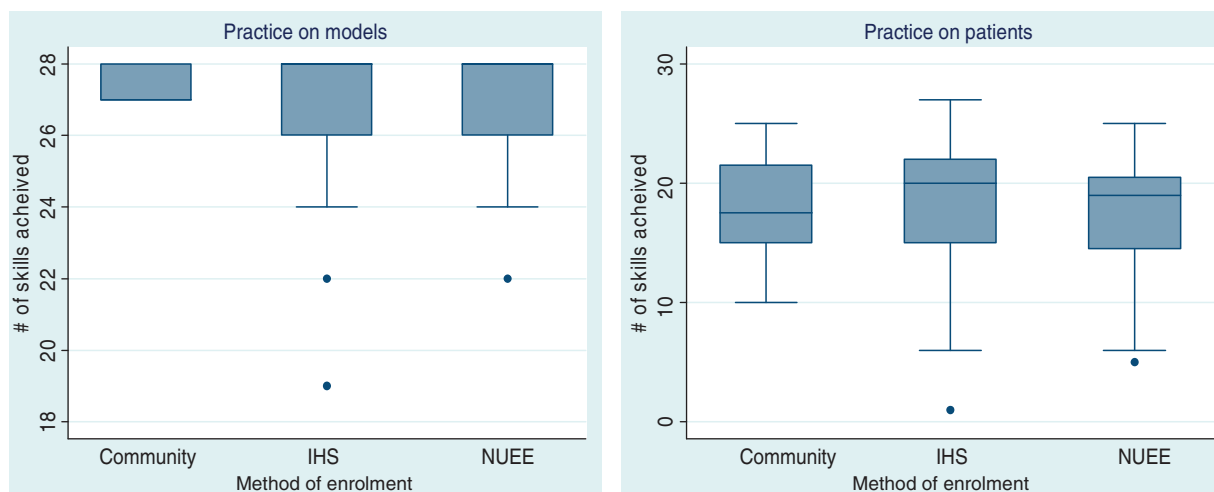


Figure 1 Achievement of competency in skills on models and patients by enrolment method. *Midwifery training programme, Herat, Afghanistan, 2003–09 ($n=170$) Notes: *Community = chosen by community; IHS = chosen by the Institute of Health Sciences; NUEE = chosen by National University Entrance Examinations.

hours and night work (Fox 1993; Rozario 1995; Lowis and McCaffery 2004). Examples include the United States, the United Kingdom, Bangladesh and India. A contrasting example of a country where midwifery commanded considerably greater respect is the Netherlands. In Asia, cultural beliefs in the pollution around childbirth have been a potent factor in deterring women of educated and wealthy families from midwifery. In Turkey, women who had not willingly chosen midwifery as a profession had higher scores of emotional burnout, while love for their work was protective (Alparslan and Doganer 2009).

Although the training of SBAs accords them greater status than that of mainly untrained traditional birth attendants (TBAs), in light of the foregoing considerations, random and exclusive selection of high-school graduates for midwifery on the basis of NUEE results would appear unwise. In Afghanistan, only 13% of women surveyed in 33 provinces of Afghanistan in 2004 had used an SBA (Mayhew *et al.* 2008). Women who lived less than 60 minutes from a health facility and near one with a female midwife had greater use of an SBA, further supporting the need for training women from rural areas with a shortage of SBAs.

Despite these realities, the IHS is currently constrained by MoHE recruitment policy and can only train high-school graduates, receiving students allocated via the NUEE rather than by their personal choice, who may or may not be interested in midwifery. Such students are not required to make any service commitment, nor are students qualifying via the IHS on the basis of completed high school and passing the IHS examination. Given the limitations of education in rural communities, most eligible candidates are now from urban areas. In contrast, formerly NGOs had challenged the MoPH selection criteria and when recruits with less than 12 years education were being accepted, recruited women from areas of great need, sponsored them for study and return to rural areas, and helped with rural deployment.

To overcome the lack of service by graduates, the IHS has insisted that students it selects must sign a bond to work in public health facilities upon graduation. This has proven ineffective because facilities in urban and semi-urban areas have a full complement of midwives, and because urban dwelling midwives are reluctant to move to rural areas. Such reluctance is due to perceived lack of security and of community support from extended family, or other reasons including cultural values such as *Purdah* (protection) and constraints on women's mobility (Moghadam 2002; Currie *et al.* 2007).

In order to motivate urban women to work in rural areas, the MoPH provides a hardship allowance of up to 250% of base salary (MoPH 2005b). Although this policy has had some success, clearly finance is not the only issue motivating health workers (Lehmann *et al.* 2008). In other countries, job security, recognition, better living conditions and other factors have been highlighted as key motivators for placement and retention in remote areas (Fort and Voltero 2004; Manongi *et al.* 2006; Henderson and Tulloch 2008; Willis-Shattuck *et al.* 2008; Bradley and McAuliffe 2009; Dolea *et al.* 2009). In Afghanistan the key inhibitors—security from violence including murder, and cultural and family issues affecting mobility of women—cannot be easily overcome. While such inhibitors adversely affect deployment of urban dwellers to rural areas, they pose less of a disincentive for students already resident there. Protection provided by students' extended families and the community they come from, together with selection by community consultation, do much to support completion of studies and eventual return for service.

A few other practical issues merit comment. Lower scores and pass rates among married students probably reflect the competing priorities of family and education. Hence married women may need appropriate support. Another issue was the substantially fewer deliveries conducted by students with less than grade 12 education. Obstetricians serving as clinical preceptors at the maternity hospital initially resisted allowing access to deliveries for trainee midwives, for the stated reason

that this placed patients at risk. Students perceived that such resistance particularly affected rural students, since their educational standards were assumed to be lower than for urban. Intervention by IHS staff has succeeded in changing obstetricians' attitudes. A subsequent decision to recruit additional midwife preceptors, who support student access to deliveries, also helped in removing this obstacle to student experience.

Conclusion

Health workforce training and retention pose much greater challenges for females than males in Afghanistan, as compared with most other countries. The combination of a retrospective and a cross-sectional survey demonstrated that the challenges of recruiting trainee midwives for rural areas of Afghanistan can be addressed in a culturally appropriate and effective manner. Restricting access for midwifery training to high-school graduates has harmed a fundamental reason for such training, which is the provision of skilled obstetric care to all residents, not only urban. Furthermore, scarce resources including faculty time and donor funding are wasted on training excessive numbers of urban students who end up unemployed.

A collaborative approach between the MoPH and MoHE, recognizing both workforce requirements and educational standards, should best meet the obstetric needs of rural populations, including staffing for the MoPH. To address this, an appropriate proportion of rural students must be selected for training.

A sound extracurricular foundation programme to improve levels of general knowledge could be delivered to rural students prior to initiation of actual midwifery training. They should then be sponsored and supported throughout their education in a culturally sensitive environment conducive to studying and, for married women, family life. Clinical training sites should be reinforced educationally and financially, and directed by well-trained tutor-midwives. This would provide opportunities for students to assume practical clinical responsibilities with supportive supervision, ensuring availability and retention of an effective rural obstetric workforce. Sufficient numbers of students might then be enabled to not only obtain but also use midwifery knowledge and skills, thereby contributing to sustainable solutions for rural maternal health.

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