



Lesotho Nursing and Midwifery Primary Health Care Clinical Placement Final Report

September 30, 2014

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The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria and HIV/AIDS, and strongly encourages opportunities for integration. Crosscutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening. www.mchip.net

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Abbreviations

| | |
|-------|----------------------------------------------|
| CHAL | Christian Health Association of Lesotho |
| FGD | focus group discussions |
| HRH | human resources for health |
| LNC | Lesotho Nursing Council |
| MCHIP | Maternal and Child Health Integrated Program |
| MNCH | maternal, neonatal and child health |
| MOH | Ministry of Health |
| NA | nursing assistant |
| NTI | nurse training institutions |
| PHC | primary health care |
| PSE | pre-service education |
| RM | registered midwife |
| RN | registered nurse |
| WHO | World Health Organization |
| YLL | years of life lost |

Acknowledgments

This program and document were made possible by the generous support of the American people through the U.S. Agency for International Development, under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-00. The contents are the responsibility of MCHIP and do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

The Maternal and Child Health Integrated Program (MCHIP) gratefully acknowledges the Ministry of Health as well as USAID/Lesotho, which has provided financial support and guidance to MCHIP in the implementation of this program. MCHIP also acknowledges the contributions of the program's partners: the Christian Health Association of Lesotho, Maluti School of Nursing, Scott School of Nursing, Roma School of Nursing, and Paray School of Nursing. In addition, many of the health centers that hosted clinics were under the Ministry of Health of Lesotho. We would like to acknowledge the MOH, especially the public health nurses who contributed greatly to the success of hosting students at the health centers and supporting preceptors who took part in this research. Finally, the success of this project and the research is grounded in the work of the nurse and midwife educators and preceptors. Their daily contributions to training the next generation of nurses are vital and greatly appreciated.

The authors would like to thank Peter Murakami and Gayane Yenokyan, who undertook much of the data analysis for the purpose of this report. Preliminary data found in this report was presented at the MCHIP Closure and Presentation of Preliminary Primary Health Care (PHC) Clinical Placement Research Results Meeting at the Lehakoe Club in Maseru, Lesotho on the 24 June 2014. The authors would like to thank the attendees of this meeting for their valuable feedback and contributions during that meeting.

Executive Summary

Countries with shortages of human resources for health face multiple competing priorities, including the need to increase pre-service enrollment, stave off the constant threat of “brain drain,” and recruit and retain health professionals in rural areas, all while ensuring that the quality of services meets minimum standards. As a country with one of the highest HIV prevalence rates in the world (23.3%), Lesotho has a dire need to address the state of HIV/AIDS care and treatment by urgently and effectively preparing nurses in HIV/AIDS care, treatment, and support systems. Nurses and midwives are the frontline health care workers who provide the majority of care to the Basotho population. Seeing that they are well trained, competent, and confident in their daily work will help to ensure that high-quality health care is delivered.

The USAID-funded Maternal and Child Health Integrated Program (MCHIP) initiated a nursing pre-service education (PSE) program in Lesotho in May 2010 to improve the quality of nurse- and midwife-delivered care. In addition to the Lesotho Ministry of Health (MOH), MCHIP worked closely with the Christian Health Association of Lesotho (CHAL) to provide technical assistance and build capacity, provide support to nursing and midwifery training institutions and clinical sites, and improve the clinical experiences of graduating nursing and midwifery students to prepare them to address community health needs. MCHIP’s goal has been to build sustainable capacity in nursing pre-service education in Lesotho, focusing on CHAL institutions. As part of the program, MCHIP supported the development of primary health care (PHC) clinical placements for trained nursing assistants and general nursing and midwifery students. The placements were designed to match smaller cohorts of students with preceptors to encourage better teaching/learning opportunities and appropriate oversight.

To expand on its anecdotal program evaluation, MCHIP conducted operational research on PHC clinical placements to provide evidence for use by schools, government, and donors. The aim of the research was to determine whether clinical placements prepared students and their preceptors to address Lesotho’s health priorities. The study employed both qualitative and quantitative methods of data collection, including questionnaires, observation of preceptors’ interaction with students, and focus group discussions with both students and preceptors.

A total of 96 preceptors, eight nurse/midwifery educators, 40 clinicians, and 241 diploma students were recruited as research participants. Eight data collection tools, including skills checklists, questionnaires, and focus group discussions, were developed in collaboration with the Lesotho Nursing Council (LNC).

The overall aim of the study was to understand the acceptability and usefulness of PHC clinical placements for nursing and midwifery students. The study had five objectives:

1. To determine whether PHC clinical placements improve competency and confidence of nursing and midwifery students.
2. To describe whether PHC clinical placements increase students’ likelihood of accepting deployment at a PHC clinic post-graduation.
3. To determine whether the PHC clinical rotation increases exposure to country-relevant clinical experiences compared to the hospital setting.
4. To determine whether PHC clinical placements contribute to increased job satisfaction and professional performance of RNs and RMs as preceptors in the PHC setting.
5. Describe the effect PHC placements have on student, and preceptor perceptions of primary health care.

Students and preceptors both perceived PHC clinics to be appropriate settings to provide students with rich learning environments, allowing them to develop personally and

professionally. In addition, results support the notion that PHC placements contributed to increasing all cadres' confidence and competence in various clinical skills.

While the quantitative data did not definitively conclude that the PHC experience directly increased the likelihood that students would accept placement in the PHC setting, the qualitative data supports this idea. A majority of students (89%) reported they would work in a PHC setting after clinical placement.

Not surprisingly, both preceptors and students highlighted HIV, tuberculosis, and maternal mortality as the most pressing health issues in the communities they served. The similarities between the students and the preceptors indicate that students had good insights into the health of the communities they would serve in the future.

In Lesotho, nurses are the primary workforce managing PHC facilities; as such they need to become role models for other health care providers by providing holistic and culturally competent patient care. The study results indicate that PHC clinical rotations play a major role in increasing awareness among nurses and midwives that although people are different, they require the same quality health care.

To ensure that the country has competent health care providers who can be placed anywhere, the nursing and midwifery curriculum has been revised to be competency-based rather than content-based. To ensure that students receive relevant content and experience during their training, nursing education institutions must facilitate both hospital and clinic experiences.

Furthermore, PHC clinical placements must be appropriately planned, implemented, and evaluated to ensure that they benefit the country and the nursing and midwifery profession as a whole. For PHC clinical placements to be cost-effective, they need to be well-planned, budgeted for, and well-coordinated at all levels. The timing of clinical placements must be carefully considered and communicated to all involved, so that the placements benefit both students and preceptors.

Background and Introduction

Countries with shortages of human resources for health (HRH) must address competing priorities as they work to meet the need for skilled health care providers and support staff. These HRH priorities include increasing enrollment in pre-service training institutions, staving off the constant threat of “brain drain,” keeping providers themselves healthy, and recruiting and retaining health professionals in rural areas, all while ensuring that health services meet minimum standards for quality. At 23.3%, Lesotho’s HIV prevalence rate is one of the highest in the world, creating a dire need to prepare nurses in HIV/AIDS care, treatment, and support systems, and thereby improve the state of HIV/AIDS care and treatment (UNAIDS 2013). Nurses and midwives are the frontline health care workers who provide the majority of care to the Basotho population. Seeing that they are well trained, competent, and confident to perform their daily work will ensure that high-quality health care is given to their communities and their patients.

MCHIP is the USAID Bureau for Global Health’s flagship program for maternal, neonatal, and child health. The program has worked to improve the primary health care clinical education of nursing and midwifery students in Lesotho. The MCHIP Lesotho nursing and midwifery pre-service education (PSE) program began in May 2010 with the goal of improving the quality of nurse- and midwife-delivered care. The initiative sought to strengthen health care services in the areas where the majority of Lesotho’s population lives.

MCHIP has worked closely with the Lesotho Ministry of Health (MOH) and the Christian Health Association of Lesotho (CHAL) to build sustainable capacity in nursing pre-service education. Focusing on CHAL institutions, MCHIP has provided technical assistance and support to nursing and midwifery training institutions and clinical sites, and has worked to improve the clinical experiences of graduating nursing and midwifery students so that they would be better prepared to address community health needs. The program has contributed to increasing the number and quality of nursing and midwifery graduates with skills appropriate to the country’s context and government priorities. Specific program objectives include the following:

1. Improve the capacity of CHAL schools of nursing to house and educate nursing and midwifery students.
2. Strengthen current didactic and clinical teaching practices.
3. Support the development of an enabling regulatory environment for nursing education through strengthening the Lesotho Nursing Council.

MCHIP’s initial nursing and midwifery PSE assessments identified gaps in both the clinical and didactic education of students. The assessments found that, for their clinical experiences, students were primarily placed in hospital sites where there were no trained preceptors and where the nursing staff was overloaded with tasks and had little time to supervise students. This environment provided limited opportunities for the students to learn. Furthermore, despite the fact that the majority of health care services provided in Lesotho are delivered through PHC facilities, nursing and midwifery programs did not routinely offer community or PHC clinical experiences for students. Students’ lack of experience in these areas was evident in their consistently low test scores in community health. A task analysis conducted by Jhpiego confirmed that although the majority of nurses work in district hospitals and health centers, few of these workplaces train students, indicating that nursing and midwifery students are not receiving exposure to health care provision at the health center level, where they are most likely to be placed during the course of their careers. To address the absence of PHC in pre-service curricula and practical training, MCHIP supported the development of PHC clinical placements for trained nursing assistants and general nursing and midwifery students. The placements matched small cohorts of four to 10 students with preceptors, to give the students’ varied clinical experiences and better supervision, and to increase their confidence when performing PHC tasks.

PHC clinical placements allow nursing and midwifery students to experience the link between community health theory and practice, which is essential for clinical skills development, professional socialization, and building confidence for future employment. The rural PHC rotations during nursing and midwifery studies were noted by the World Health Organization (WHO) as an educational intervention that could be used to improve the recruitment and retention of health workers in rural areas. Research has demonstrated that exposing students to rural communities through clinical rotations can (1) influence students' choice of where to practice after graduation, (2) aid students in developing professional networks in rural areas, and (3) increase awareness of rural health (Lofmark et al. 2008).

This report presents key findings from the study, *The Effect of Primary Health Care Clinical Placements during Nursing and Midwifery Education on Clinical Practice* (April 2013–June 2014). The authors hope that these findings will guide PHC clinical placements in Lesotho and illustrate the importance of these placements in clinical education for students in Lesotho and around the globe.

LESOTHO

The Kingdom of Lesotho has a population of just over 2 million within the borders of its 30,300 square kilometers. The country is divided into 10 districts (Figure 1). Altitudes range from 1,400 to 3,482 meters, making Lesotho the country with the highest low point in the world. Approximately 60% of the population lives below the poverty line of USD 1.50 per day, and 75% lives in rural areas, with the majority engaged in agriculture (World Bank 2013). Agricultural production has declined over the past century, and Lesotho now has food security issues (Government of Lesotho, n.d.).

Figure 1. The 10 Districts of Lesotho



In 2010, HIV/AIDS, lower respiratory infections, and diarrheal diseases were the three leading causes of years of life lost (YLL) in Lesotho. YLL is the preferred measure to use when prioritizing health interventions, as it quantifies premature mortality by weighting deaths at a younger age more than deaths that occur later. Between 1990 and 2010, the all-cause mortality rate increased among women ages 25–29 by 831%, the largest such increase among all age groups, primarily due to HIV/AIDS. Nearly one-quarter (23.3%) of adults between the ages of 15 and 49 in Lesotho are living with HIV (UNAIDS 2013). Along with the HIV epidemic, Lesotho faces the fifth highest incidence of tuberculosis globally, with 632 cases per 100,000 people (WHO 2013). The country also has one of the highest cervical cancer rates in the world, with estimates ranging from 60 to 90 cases per 100,000 women (Jack et al. 2008). HIV-positive women have a higher incidence, greater prevalence, and longer persistence of human papilloma virus infection, making them four times more likely than their HIV-negative counterparts to develop cervical cancer (Abraham et al. 2013).

Lesotho is currently facing an HRH crisis, with a shortage of personnel in all cadres. There are only six nurses and midwives per 10,000 people, 15% of the ratio in neighboring South Africa (40 nurses and midwives for every 10,000 people). The ratio of nurses to population is even lower in rural areas of the country (UNICEF 2013). A 2011 assessment of health centers found that only 22% met minimum staffing levels, and 21% did not have a nurse on staff (Icon Institute 2011). Lesotho has 43% of the number of nurses and midwives

recommended by WHO for minimum staffing (WHO 2010a). The current HRH crisis in Lesotho has three contributing factors: (1) the inability to produce the number of health workers needed; (2) the inability to retain these professionals after they are trained and deployed to the areas where they are most critically needed; and (3) morbidity and mortality among health workers themselves, largely due to high rates of infectious diseases.

In Lesotho, there are four urban filter clinics (clinics linked to the district hospitals), 17 health posts, and 192 health centers, of which 78 are owned by the government, 35 by the private sector, and seven by the Red Cross. District hospitals, of which there are 17 across the country, provide the first level of inpatient care. CHAL is responsible for the administration of eight hospitals, 72 health centers, and four schools of nursing and midwifery affiliated with district hospitals. Registered nurses (RNs), registered midwives (RMs), nursing assistants (NAs), and nurse clinicians account for 90% of personnel directly engaged in patient care in the country. According to the Lesotho Nursing Council registration records, there were 2,888 RNs and 1,458 NAs in Lesotho in 2013 (personal communication, Lesotho Nursing Council registrar, May 2014). To reach the WHO-recommended minimum threshold of 2.28 doctors, nurses, and nurse-midwives per 1,000 people, Lesotho needs to nearly triple the number of nurses and nurse-midwives employed relative to 2010 staffing levels. In 2013, 187 general nurses, 87 nursing assistants, and 177 nurse-midwives graduated from the six nursing education institutions in Lesotho and registered for service. The nurse workforce has one of the lowest levels of job satisfaction in southern Africa due to staff shortages, insufficient equipment, drug shortages, poor infrastructure, and low salaries. Retention and recruitment of nurses at PHC facilities is especially challenging. About 54% of professional nursing and midwifery posts in the health centers in Lesotho remain vacant (Icon Institute 2011). High attrition rates are often due to illness and death.

NURSING AND MIDWIFERY EDUCATION

Six schools train nurses and midwives in Lesotho. Two are government-funded schools and the other four are CHAL nurse training institutions (NTIs). There are two basic nursing qualifications: NA, which requires two years of education, and RN, which can take three to five years, depending on whether the program offers a diploma (National Health Training College and CHAL NTIs) or a bachelor's degree (National University of Lesotho). The National Health Training College and four CHAL NTIs all offer a three-year diploma in general nursing. At these five institutions, midwifery requires an additional year of education and is considered a "post-basic" qualification. Nurse clinicians are specialist nurses with clinical experience, trained in health assessment, diagnosis, and treatment; the training for this qualification is 18 months beyond the initial diploma. Additional post-basic qualifications for RNs exist in areas such as PHC, mental health, anesthesia, and ophthalmology. After graduation, students may apply to work in CHAL or MOH health facilities. Candidates are shortlisted after they apply and, if accepted for a position, are assigned to a job, with little choice as to whether it is a health center or a hospital. Currently more students are deployed to CHAL facilities because they have a higher vacancy rate.

The limited capacity of NTIs in Lesotho has been a major barrier to increasing the intake of trainees to match service demands. MCHIP's initial assessments found that there was poor and inadequate infrastructure at some of the NTIs, with CHAL schools having greater infrastructure challenges. The quality of nurse preparation at these institutions was also a concern; in general, the training was primarily theoretical, with limited guided skills development and clinical practice to enable graduates to provide services without the need for immediate in-service training. The majority of practicum training sites were inadequate due to poor infrastructure, staff shortages, lack of clinical practice standards, and communication gaps between the schools and clinical site staff.

Before MCHIP and CHAL's PHC clinical placement program was implemented, students had very little opportunity to experience PHC. CHAL students were typically placed at the associated CHAL hospitals, which frequently had low patient censuses

(often because access to antiretroviral therapy resulted in improved health of the population). There were no trained preceptors at the hospitals, and there was very little communication between the practicum sites and the NTIs. Although nurses at health centers served as PHC providers, new nurse graduates often lacked clinical experience or competence in PHC because they had little exposure during training.

PRIMARY HEALTH CARE CLINICAL PLACEMENTS

When MCHIP began working with CHAL to strengthen pre-service education, there was a specific focus on clinical education. Clinical education, grounded in critical thinking rather than task-oriented clinical skills, is vital for developing nurses who can provide safe and competent care. Many students are deployed directly to health centers and need to make key decisions independently, as they are often the only health care providers at that level of health facility.

MCHIP supported CHAL in conducting a pilot PHC clinical placement for nursing students in 2011–2012. The pilot was successful, as determined by program evaluations completed by students, educators, and preceptors, and the program was expanded. All four CHAL schools collaborated with MCHIP and participated in placing their students for two- to four-week clinical rotations, the majority of which were in rural areas, with students staying onsite. Students were supervised and mentored by clinical preceptors while being exposed to PHC and community health. In collaboration with the CHAL schools, MCHIP conducted extensive site assessments of the health centers before placements were made, using a standardized tool to determine their appropriateness for student placement. Nurse educators from the schools participated in the assessments and helped identify student accommodations as well as necessary commodities. MCHIP supported transportation for students and nurse educators at the four schools, helped to secure student accommodations, and purchased commodities for the students during the clinical placement.

Before the student placements, some of the nurses and midwives working at the health centers participated in a preceptor training workshop, which focused on effective teaching skills and mentorship. Because of financial and time limitations, not all RN/RM preceptors were trained.

Nurse educators from the NTIs were encouraged to meet with the preceptors/facility managers before the placements to review clinical learning objectives for the specific student group. In all, more than 600 PHC placements in 37 health centers were undertaken with MCHIP support.

Table 1. Clinical Placements by Year

| Academic year | Number of PHC clinics utilized | Total students placed in PHCs |
|---------------|--------------------------------|-------------------------------|
| 2011–2012 | 3 | 15 |
| 2012–2013 | 35 | 256 |
| 2013–2014 | 36 | 301 |

Objectives of PHC Clinical Placement Research

The overall aim of the study was to understand the acceptability and usefulness of PHC clinical placements for nursing and midwifery students. There were five main objectives:

1. To determine whether PHC clinical placements improve competency and confidence of nursing and midwifery students
2. To describe whether PHC clinical placements increase students' likelihood of accepting deployment at a PHC clinic post-graduation

3. To determine whether the PHC clinical rotation increases exposure to country-relevant clinical experiences compared to the hospital setting
4. To determine whether PHC clinical placements contribute to increased job satisfaction and professional performance of RNs and RMs as preceptors in the PHC setting.
5. To describe the effect PHC placements have on student, and preceptor perceptions of primary health care

A mix of quantitative and qualitative methods was used to answer the following questions:

1. Does student competency in key primary care areas improve after clinical rotation in PHC?
2. Do students report greater confidence in providing clinical care after clinical rotation in PHC?
3. Do students have stronger preferences for a post-graduation PHC placement after the clinical placement?
4. Are students satisfied with the clinical placement experience?
5. Does the preceptorship training program improve clinician performance as a preceptor?
6. Do preceptors have higher job satisfaction than other practicing RNs and RMs who do not precept students?

Methods

Clinical skills checklists for nursing and midwifery were used by the preceptors to evaluate student competence and by the students to assess their own confidence. Job satisfaction was assessed by administration of a questionnaire to practicing preceptors and non-precepting nurses. Student and preceptor perceptions of health were assessed using a tool with a Likert scale for closed-ended questions in addition to open-ended questions. Preceptor performance on 15 predetermined skills was assessed by observation by study personnel.

For the collection of qualitative data, the approach developed by Maxwell and Maxwell was used, with some modifications to suit the evaluation (Neuman 1997). Empirical data were collected, concepts were formed through coding and clustering of codes into categories, themes were developed through combining categories, and concepts were modified with integration of themes to explain the phenomena.

APPLICATION TO CONDUCT RESEARCH

The study team obtained approval to conduct the PHC clinical placement study from the Lesotho MOH Research and Ethics Committee and from the Johns Hopkins University School of Public Health Institutional Review Board.

DEVELOPMENT OF THE TOOLS

Eight tools were used to collect data. Tools 1 through 4 were skills checklists that were developed based on the Lesotho Nursing Council's clinical standards and the Essential Health Package nursing task list. The methodology for determining confidence and competence rankings for tools 1 through 4 was based on South Africa's HIV Mentorship Tools (Republic of South Africa 2011).

Tool 5, the Health Perceptions Questionnaire, was developed specifically for this research study after a review of the literature on elements of health perception. Tool 6 was developed and modified based on five different tools found in the literature and referenced on the tool. Tool 7 was based on the skills checklist developed as part of Jhpiego's Skills Training

Learning Resource Package. Tool 8, the Focus Group Discussion Guide, was developed specifically for this research.

Table 2. Research Tools

| # | Tool |
|---|-----------------------------------------------------|
| 1 | Essential Nursing Skills Checklist for Preceptors |
| 2 | Essential Nursing Skills Checklist for Students |
| 3 | Essential Midwifery Skills Checklist for Preceptors |
| 4 | Essential Midwifery Skills Checklist for Students |
| 5 | Health Perceptions Questionnaire |
| 6 | Job Satisfaction Survey |
| 7 | Observation Checklist: Preceptor |
| 8 | Focus Group Discussion Guide |

PARTICIPANT RECRUITMENT

A total of 96 preceptors, eight nurse/midwifery educators, 40 clinicians, and 241 diploma students (60 of whom were midwives from Roma and Scott NTIs) were recruited as research participants. Researchers traveled to the four CHAL schools and health centers to recruit participants. Participants were given an overview of the research, and their voluntary participation was sought.

The inclusion criteria for student participants included the ability to write and speak English; 18 years of age or over; willingness to participate; and currently in second or third year of nursing program or in the one-year post-basic midwifery education program.

Inclusion criteria for clinical preceptor and clinician participants included the ability to write and speak English; 18 years of age or over; willingness to participate; licensed RN or RM with the Lesotho Nursing Council; and currently employed at a PHC facility within the catchment area of the four schools.

Participants could choose to withdraw at any time during the study and were withdrawn if their inclusion criteria (e.g., employment status or enrollment status) changed during the study period. For example, students at Maluti NTI went on strike for several months and clinical placements were delayed beyond the study period, necessitating withdrawal of a cohort of students.

DATA COLLECTION

Quantitative Data

Data collection occurred at five distinctive time periods between May 2013 and May 2014.

Baseline data collection

- The Health Perceptions Questionnaire was given to preceptors and students at baseline, before student placement in PHC clinical sites.
- For students' self-perceived confidence measurements, the Essential Nursing Skills Checklist for Students (Tool 2) or the Essential Midwifery Checklist for Students (Tool 4) was given to the students at baseline (before placement). For the preceptor assessment of student competence, the Essential Nursing Skills Checklist for Preceptors tool (Tool 1) or the Essential Midwifery Checklist for Preceptors tool (Tool 3) was given to the preceptors at the beginning of the students' clinical placements. Preceptors were instructed by the study team to fill out the checklists after two to three days of observing students.

Ongoing data collection

- Study team personnel observed preceptors during the PHC placement, using the Observation Checklist.

Endline data collection

- At the completion of the student PHC clinical placement rotations, a study team member instructed the preceptors and students to complete the Essential Nursing Skills Checklists (Tools 1 and 2) or the Essential Midwifery Checklists (Tools 3 and 4). Preceptors were also given the Job Satisfaction Questionnaire and the endline Health Perceptions Questionnaire.
- Clinicians (RNs and RMs working in facilities that did not host students for clinical placement) were given the Job Satisfaction Questionnaire throughout the study when study personnel came into contact with them.

Table 3 provides an overview of the numbers of participants completing the research tools at baseline and endline.

Table 3. Numbers of Participants Completing Research Tools

| TOOL | | RESPONDENT | |
|-------------------|----------------------------------------------------|----------------------|--------|
| Number | Objective | Type | Number |
| 1 | Assess clinical competency of nursing students | Second year baseline | 88 |
| | | Second year endline | 85 |
| | | Third year baseline | 22 |
| | | Third year endline | 22 |
| 2 | Assess clinical confidence of nursing students | Second year baseline | 140 |
| | | Second year endline | 120 |
| | | Third year baseline | 33 |
| | | Third year endline | 30 |
| 3 | Assess clinical competency of midwifery students | Fourth year baseline | 57 |
| | | Fourth year endline | 54 |
| 4 | Assess clinical confidence of midwifery students | Fourth year baseline | 60 |
| | | Fourth year endline | 55 |
| 5 | Assess health perceptions | Second year baseline | 138 |
| | | Second year endline | 117 |
| | | Third year baseline | 37 |
| | | Third year endline | 32 |
| | | Fourth year baseline | 59 |
| | | Fourth year endline | 55 |
| | | Preceptor baseline | 94 |
| Preceptor endline | 33 | | |
| 6 | Assess job satisfaction | Preceptor | 46 |
| | | Clinician | 40 |
| 7 | Assess preceptor competency in precepting students | Trained preceptor | 15 |
| | | Nontrained preceptor | 24 |

Qualitative Data from Focus Group Discussions

Seven focus group discussions (FGDs) were held in the following sequence:

- Second-year general nursing students drawn from all the four CHAL training institutions (12 participants)

- Third-year general nursing students from the three CHAL training institutions (12 participants)
- Midwifery students from Roma (12 participants)
- Midwifery students from Scott (12 participants)
- Nontrained preceptors (four participants)
- Trained preceptors (eight participants)
- Nurse educators from the four CHAL training institutions (nine participants)

The focus groups were conducted in English and were audiotaped to enable the discussions to be captured (Msolomba 2001). Recordings of focus group discussions were transcribed.

ANALYSIS OF RESULTS

Quantitative Analysis

Quantitative data, including frequencies, were analyzed using SPSS.

Qualitative Analysis

Generating categories, themes, patterns, and codes based upon FGDs

The lead qualitative researcher examined the transcripts of focus group discussions until sufficient understanding of the recorded material was reached. This was deemed important because researchers cannot analyze data unless they read and comprehend it, and how well they understand the data subsequently influences how well they will analyze it (Dey 1993). After thoroughly examining the transcript, the team developed themes and codes for the data. Recurring ideas and patterns of beliefs that link people and settings were defined as themes (Marshall and Rossman 1995). The recorded raw data were placed in a table with the following headings: participants' raw data, open/descriptive coding, axial coding, and selective/pattern/explanatory coding. Open coding, axial coding, and selective coding, the three categories of codes used, are described below.

Open coding

Open codes are descriptive codes applied to phrases, sentences, or groups of sentences that are attached to each concept described by the participant (Morse and Field 1996). In this study, the researcher performed open coding during the initial appraisal of the collected data, by locating themes within the data and assigning initial codes. During open coding, the data are broken into incidents to enable close examination and comparison for similarities and differences, and the significance of each incident is questioned. The codes help the researcher see emerging themes at a glance and, because they are similar to terms used by the participants in the interviews, serve as a link between the raw data and the developing categories. The researcher performed the coding by reading each interview sentence by sentence. Some of the codes came directly from the informants' words, while others were summaries of what the informants seemed to be describing at a particular point in the discussion (Coffey and Atkinson 1996). During this stage the data that seemed pertinent to the research question were highlighted in the text and a code was attached.

Axial coding

Axial/interpretive codes were used as the researcher moved beyond simply sorting statements using participants' terms and began to attach meanings to the statements. During axial coding, the researcher focused more on the initial codes developed during open coding than on the raw data, with the purpose of reviewing and organizing them. The concepts or themes that were related were linked together and given a new code. This enabled the researcher to identify similar codes in each question, and to cluster them under the same theme. This exercise led to the process of category formation whereby themes were

compared with one another, and those that appeared to reveal a specific connotation or pattern were grouped together under the same category.

Selective/pattern/explanatory coding

After most of the data were collected, the researcher scanned the data, together with the previous codes, to compare and contrast them and come up with one selective code. The researcher continued testing the category against incoming data in an effort to achieve saturation, the point where no new themes emerge.

STUDY LIMITATIONS

This study focused only on one country and within that country only on four CHAL NTIs that were supported by MCHIP and the health centers that accommodated students for PHC clinical placements during the 2013–2014 academic year. Therefore, study results cannot be generalized to all health centers placing students or all training institutions in Lesotho or in other countries. In addition, even though the aim was to cover all students in the four CHAL training institutions, due to unforeseen circumstances (student strike, change in placement dates, etc.), third-year nursing students, midwifery students, and some preceptors in one of the training institutions were not able to participate in the study. The duration of PHC clinical placements was not the same for all levels in all NTIs, and this may have implications for the participants' general perception of PHC clinical placements.

Because participants self-selected for the study, there is possibility of a self-selection bias. In addition, some participants filled out baseline questionnaires but did not fill out endline questionnaires. Those participants' data points were not used in the data set analysis. There is a possibility that by not filling out their endline questionnaires, they self-selected out of the study for a particular reason.

The study identified some variables that would motivate participants to be retained at the PHC settings; however, it will take a number of years and even another study to determine if the interventions used would retain nurses/midwives in these settings.

Results

DEMOGRAPHICS OF STUDY PARTICIPANTS

Lesotho requires midwives to have a first degree in nursing, and the majority (98%, n=85) of preceptors who took part in the study were trained in both nursing and midwifery. The average age of the preceptors was 34 years old, and the majority (83%, n=78) of the preceptors were female. On average, the preceptors had worked in PHC for 5.5 years and had 7.8 years of overall clinical experience.

Among all the students taking part in the research, 77% (n=181) were female, and the average age was 24 years old. Of the 234 students, 75% (n=174) were nursing students and 25% (n=59) were midwifery students.

The majority of the clinicians who took part in the study were female (90%, n=37), and all were midwives. Their average age was 34 years old, and they had been in clinical practice on average for 11.9 years.

Eleven categories, 23 themes, and 33 subthemes were identified through analysis of qualitative data (Table 4).

Table 4. Themes and Subthemes Identified

| CATEGORY (SELECTIVE/PATTERN/ EXPLANATORY CODING) | THEME (AXIAL CODING) | SUBTHEME (OPEN/DESCRIPTIVE CODING) |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Feelings regarding PHC Placement | 1.1 Mixed feeling | <ul style="list-style-type: none"> - Excited/happy; mixed - Unhappy/frustrated |
| | 1.2 Factors contributing to the feeling | 1.2.1 Personal factors <ul style="list-style-type: none"> - Inquisitive/exploratory mind - Fear of unknown - Timing - Rural experience |
| | | 1.2.2 Structural factors <ul style="list-style-type: none"> - Lack of resources |
| 2. Competencies developed during PHC clinical placements | 2.1 Cultural competence and adaptation | 2.1.1 Cultural norms and practices 2.1.2 Knowledge gap between rural and urban people |
| | 2.2 Comprehensive client management | 2.2.1 Patient assessment and diagnosis 2.2.2 Client management |
| | 2.3 Practice-based learning and quality improvement (professional growth and development) | Transfer of theory to practice (made it easy to pass exams); provision of family planning services (did not get experience when at school), etc. |
| | 2.4 Collaboration | Learned to work with other health professionals (senior nurses, community health workers, and colleagues) |
| 3. Key clinical experiences acquired during PHC clinical rotations | 3.1 Consultation (history taking, physical examination, and diagnosis) | Correct and in-depth history taking and physical assessment in order to make appropriate diagnosis |
| | 3.2 Client management treatment and follow-up | Community involvement important for the success of the clinic |
| | 3.3 Problem-solving and decision-making skills | Communication skills to enable making good diagnosis and treatment |
| | 3.4 Communication and counseling skills | Conducting voluntary counseling and testing; being nonjudgmental |
| | 3.5 Recordkeeping | Better understanding of PHC statistics and registers |
| | 3.6 Conducting home visits and outreach, community involvement | Student should go to outreach activities |
| 4. Improved confidence | 4.1 Motives for improved confidence | Confidence improved (confidence increased as competence increased) |
| | 4.2 Specific areas where confidence improved | Family planning services; MCH; immunizations; consulting and prescribing; giving injections; giving health education |
| 5. Reasons why PHC settings are more relevant than hospitals in Lesotho | 5.1 At PHC one acquires comprehensive knowledge on management of clients | Students acquire significant and comprehensive knowledge on managing clients when they have been to the PHC setting |
| | 5.2 Hospital setting leads to narrow mindedness (and/or dependency on doctors) | Hospital focuses more on curative; working at the hospitals does not stimulate critical thinking (routine) |
| 6. Duration of clinical placement | 6.1 Inadequate time | - Less than four weeks |
| | 6.2 Adequate time | - At least four weeks |
| 7. Determinants for accepting deployment at the health centers post- graduation | 7.1 Personal-focused variables | Love for rural areas; independence; personal/professional growth due to independence as compared to hospital; no night, weekend, or holiday shift |
| | 7.2 Client-focused variables | Opportunity to provide health information to clients; love to bring services closer to people in rural areas |
| | 8.1 Structural variables | Working in a situation where you've got the utilities, you don't have to improvise; adequate security, etc. |

| CATEGORY (SELECTIVE/PATTERN/ EXPLANATORY CODING) | THEME (AXIAL CODING) | SUBTHEME (OPEN/DESCRIPTIVE CODING) |
|-------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 8. Retention strategies; motivational factors to stay at health centers, at one's working environment | 8.2 Personal | Resources to continue with educational development (internet); where students are being placed so that I can transfer my knowledge to them |
| 9. Strategies to improve students' PHC clinical placements | 9.1 Appropriate planning | 9.1.1 At governmental Level 9.1.2 At training institution level 9.1.3 At health center or community level |
| | 9.2 Implementation | Example: need to motivate for more preceptors to be able to supervise students effectively |
| | 9.3 Monitoring and evaluation | Keep appropriate records; analyze data and share information from these records with relevant stakeholders |
| 10. Community health course exam results | 10.1 Improved pass rate | High failure rate before program was implemented; pass rate higher now though there might be other contributing factors |
| 11. Health center nurses' preparedness to precept students | 11.1 Lack of preparedness | Not all are ready to precept students (refer students to nurse in charge); need for training and retention of those trained at health centers |

For ease of review and to develop key recommendations, both the quantitative and qualitative results have been categorized under the four main objectives of the study:

- Objective 1: Competency and confidence before and after primary health care clinical placements
- Objective 2: Attitudes about clinical placement and deployment after placement
- Objective 3: Job satisfaction and professional performance of preceptors and clinicians
- Objective 4: Health perceptions

COMPETENCIES AND CONFIDENCE DEVELOPED DURING PHC PLACEMENTS

Competency is the application of appropriate knowledge, skills, and behavior in a clinical setting (Jhpiego 2010). A competent nurse or midwife is one who is able to perform safely and effectively. Competency is confirmed when knowledge and skills are accurately applied and appropriate behavior and judgments are consistently displayed in practice. In order for nursing and midwifery students to develop the necessary competencies and to link community health theory and practice, they need clinical experience at the PHC level (Betony and Yarwood 2013; Maginnis and Croxon 2010). According to Merriam-Webster, *confidence* is a feeling or belief that you can do something well or succeed at it. Students must not only be competent in a skill, but also have confidence that they can do it; without confidence, they will not be able to perform.

The study's first objective was to determine how PHC facility placements contributed to increasing the competence and confidence of nursing and midwifery students. Both qualitative and quantitative data contributed to attaining this study objective. Preceptors assessed students' competence and students self-reported their confidence on 74 nursing skills and 99 midwifery skills, before and after the clinical placements. The qualitative component asked probing questions of both preceptors and students in this specific area.

Data Analysis

Second-year students

Tool 1 assessed the competence of students in select clinical skills. Preceptors were asked to assess students at baseline and endline on 74 clinical nursing skills. Analysis of baseline checklists showed only two skills—*treats patients with empathy, dignity, and respect* and *administers oral medications appropriately*—for which preceptors assessed at least 80% of students as competent at baseline (Table 5). At endline, more than 80% of students were assessed as competent in 11 skills of the 74 skills. The top five are shown in Table 6.

Table 5. Assessment of Second-Year Students' Competency at Baseline: Top Five Skills

| SKILL | % 'COMPETENT' (N = 88 - NAS) |
|---------------------------------------------------------------------------|---------------------------------|
| Treats patients with empathy, dignity, and respect | 87.4% |
| Administers oral medications appropriately | 81.0% |
| Educates patients on HIV transmission and prevention | 73.6% |
| Screens patient for symptoms of TB and orders appropriate diagnostic test | 72.7% |
| Venipuncture | 70.7% |

Table 6. Assessment of Second-Year Students' Competency at Endline: Top Five Skills

| SKILL | % 'COMPETENT' (N = 85 - NAS) |
|---------------------------------------------------------------------------|---------------------------------|
| Administers oral medications appropriately | 91.8% |
| Treats patients with empathy, dignity, and respect | 89.4% |
| Performs physical exam of adults and children | 88.2% |
| Screens patient for symptoms of TB and orders appropriate diagnostic test | 87.1% |
| Performs injections correctly | 87.1% |

Similarly, more than 50% of second-year students were assessed *as not* competent on 49 skills at baseline and only 22 skills at endline.

An analysis of improvements between baseline and endline showed that there were 27 skills on which more than 20% of students improved. The five skills for which the largest number of students improved after PHC placement are listed in Table 7.

Table 7. Skills with the Greatest Percentage of Students Improving between Baseline and Endline

| SKILL | PERCENT IMPROVEMENT |
|------------------------------------------------------------------------|---------------------|
| Sputum sample | 32.6% |
| RPR-syphilis test | 31.6% |
| HIV-positive individuals linked to appropriate services, including CD4 | 30.8% |
| Management of common opportunistic infections | 29.0% |
| Rapid HIV testing | 26.1% |

Tool 2 assessed students' self-reported ability to perform a skill, which the researchers classify as confidence, at baseline and endline, for the same 74 clinical nursing skills. Analysis of checklists showed that 80% or more of students self-assessed as confident on 17 skills at baseline (the top 10 are shown in Table 8) and 23 skills at endline, and 70% or more reported that they were confident on 27 skills at baseline and 41 skills at endline.

Table 8. Self-Reported Confidence of Second-Year Students at Baseline: Top 10 Skills

| SKILL | % 'NOT COMPETENT' (N = 88 - NAS) |
|------------------------------------------------------------------------------|-------------------------------------|
| IUD insertion | 100.0% |
| Pelvic examination | 88.7% |
| Providing patient with cervical cancer screening guidelines | 88.2% |
| Identifying the difference in cervical cancer screening guidelines HIV+/HIV- | 85.9% |
| Suture of simple wounds | 83.6% |

Third-year students

Preceptors assessed 80% or more of third-year students as competent on 23 skills at baseline and 51 skills at endline. Tables 9 and 10 list the skills that the greatest numbers of students were competent to perform at baseline and endline.

Table 9. Assessment of Third-Year Students' Competency at Baseline: Top Five Skills

| SKILL | % 'COMPETENT' (N = 22 - NAS) |
|---------------------------------------------------------|---------------------------------|
| Educates patient on HIV/AIDS disease progression | 100.0% |
| Provides immunization schedule for infants and children | 95.5% |
| Administers oral medications appropriately | 95.2% |
| Administers pregnancy test | 94.4% |
| Administers rapid HIV testing | 94.1 |

Table 10. Assessment of Third-Year Students' Competency at Endline: Top Nine Skills

| SKILL | % 'COMPETENT' |
|-----------------------------------------------------------------------------------|---------------|
| Sputum sample | 100% |
| Venipuncture | 100% |
| Treats patients with empathy, dignity, and respect | 95.5% |
| Performs physical exam of adults and children | 95.5% |
| Provides immunization schedule for infants and children | 95.5% |
| Performs injections correctly | 95.5% |
| Educates patients on HIV/AIDS disease progression including s/s and common OIs | 95.5% |
| Explains PMTCT and current interventions: testing, treatment, prophylaxis | 95.5% |
| Educates family members on the importance of nutrition for growth and development | 95.5% |

The largest percentage of third-year students improved on the following five skills after PHC clinical placement (from baseline to endline):

1. Recognize when patient care is beyond scope of nurse (36.1% of students improved)
2. Calculate percent weight loss / gain and BMI (36.1%)
3. Diagnose and manage common and severe respiratory diseases (31.8%)
4. Counsel patients on lifestyle, nutrition, and gender based violence (GBV) (31.8%)
5. Carry out clinical review and present patient cases (28.6%)
6. Educate patients on cervical cancer (28.6%)

The vast majority of students indicated they were not confident to perform IUD insertion (97.0%) or pelvic exam (81.8%) at baseline. Other skills that more than half of third-year

nursing students indicated they were not confident to perform included: collect stool sample (66.7%); identify the difference in cervical cancer screening in HIV- / HIV+ (66.7%); perform post abortion care (60.6%); provide patient with cervical cancer screening guidelines (57.6%); diagnose and manage ophthalmic disorders (57.6%); RPR (syphilis testing) (57.6%); diagnose and manage skin disorders (54.6%); and screen for GBV (51.5%).

Students rated themselves as confident to perform many skills at baseline. The skills that more than 90% of students were confident to perform are found in Table 11.

Table 11. Assessment of Third-Year Students' Confidence: Skills > 90% Were Confident to Perform at Baseline

| SKILL | % 'CONFIDENT (N=33) |
|----------------------------------------------------------------------------|---------------------|
| Take blood pressure | 97.0% |
| Administer oral meds | 97.0% |
| Administer IV meds | 97.0% |
| Urinalysis | 97.0% |
| Treat patient with empathy and respect | 94.0% |
| Perform injections | 94.0% |
| Counsel mother on benefits of breastfeeding | 94.0% |
| Provide advice and counseling about diet, nutrition, and physical activity | 94.0% |
| Counsel TB patients and immediate contacts | 94.0% |
| Offer HIV testing and counseling to all patients | 90.9% |

For second- and third-year nursing students combined, there were five skills that were statistically significant ($p < 0.05$) for improved competency after PHC clinical placement:

- Identify common side effects of each ARV and how to manage/refer appropriately ($p = 0.007$)
- Provides advice and counseling about diet, nutrition, and physical activity ($p = 0.033$)
- Educate family members on the importance of nutrition for growth and development ($p = 0.019$)
- Rapid HIV test using national algorithm ($p = 0.013$)
- Venipuncture (phlebotomy and blood collection) ($p = 0.028$)

Midwifery students

At baseline more than 80% of midwifery students were assessed as competent on 86 of 97 skills, and all students were competent at 14 of the skills (Table 12).

Table 12. Assessment of Midwifery Students at Baseline: Skills for Which All Were Competent

| SKILL | |
|---------------------------------------------------|--------------------------------------------|
| Treats patient with empathy, dignity, and respect | Active management of third stage of labor |
| Calculates estimated due date and gestational age | Delivery of placenta |
| Palpates to determine lie and presentation | Examines vagina and perineum for tears |
| Measures and estimate fundal height | Appropriate care of the newborn |
| Listens to fetal heart | Inspects and palpates the head (newborn) |
| Manages normal birth process appropriately | Assists with initiating breastfeeding |
| Recognizes when there is an obstetric emergency | Performs physical exam of postpartum women |

More than 20% of the midwifery students improved on three skills after PHC placement, and all three were related to the management of people living with HIV:

1. Prepare patients for ARVs (33.2%)
2. Dry blood spot test (30.4%)
3. Identify common side effects of each ARV (23.9%)

Focus Group Discussions

Supporting the quantitative findings, all FGD participants agreed that PHC clinical placement improved students' clinical competency in caring for patients. Similarly, all focus group participants agreed that placement of students at PHC facilities improved their confidence. Competence was realized in the five areas noted below, with accompanying quotations from the participants.

Improvement in competence

Cultural competence and adaptation

The issue of appreciating the different cultural backgrounds of patients in urban and rural settings came out prominently among the second-year nursing students. This is how two of the second-year participants put it:

"I think we learned a lot from that experience because it was like, if the patient comes, you have to greet them, everyone you meet you greet because it is their norms. You learn a lot to interact with people from the rural areas; how do they do their things. Not how you are used to doing things. The service you are offering them they were so appreciative and it was so good."

"About norms and values and cultural background, you learn more about . . . you have respect. You have more respect about people's beliefs and what they want. You start first by appreciating other people's interests; then you attend to them after knowing what their desires are, other than in hospitals where we do routine work."

To provide holistic nursing care, nurses must know and respect clients' cultural practices. This was also echoed by the nurse educators:

"In the clinics they were taken to the actual community, with the nursing sisters who explained to them that this community is having this problem, and [they] learnt how to manage such a problem. Which helped in linking theory with practice. And I think it is a very good principle that they can get, because we have different communities here in Lesotho, which have different needs. For instance, if you look at the community on top of the mountain there, their needs will be different from the community in the lowlands."

Comprehensive client management

At the PHC facilities, students manage clients through community outreach. Unlike in the hospital setting, where students care for clients who have already had their background assessment and clinical management facilitated by the doctor, students in the PHC setting conduct comprehensive management of clients. This comprehensive management prepares nursing and midwifery students to provide essential care:

"I think in the health center a nurse is able to make his or her own judgments regarding the condition at the moment, and is able to act appropriately. If there is a condition in a hospital the doctors are there but at the health center it needs the nurses to act immediately as there are no doctors."

"On my side, the rural experience I think was the best thing ever! Because here at hospital the patient comes with the condition and the doctor has to manage. But at the clinic we start from the grassroots. The patient comes, it is you who are going to examine, take history. I think it was the best experience."

Practice-based learning and quality improvement/professional growth and development

PHC clinical placements help nursing and midwifery students translate what they have learned into practice, and they are able to continue improving their skills. Practice develops competency and reinforces knowledge:

“In (pediatrics) and community we have been taught this immunization schedule so it was put on the wall. So when we were about to write test, we would memorize it. . . . So those outreaches, or that campaign for NID [National Immunization Day], it helped us because we were at outreaches doing those immunizations so it was not about memorizing; we were doing it practically, and it even appeared in the final exam so it was easy because we knew it.”

“Yes, PHC clinical placements are really assisting the students because at my school, when the students came back from clinical placements, we had an evaluation and one of the evaluation questions asked was, “Where would you prefer to work—in the clinic or at the hospital?” And all of them shouted “In the clinic!” because they felt the independence is what completes their nursing; unlike in the hospital.”

Collaboration

Implementing holistic patient care requires working in partnership with other health care cadres, different community members, and health partners. Collaboration means functioning effectively as a member of an inter-professional team (Hoge et al. 2014). Student nurses and midwives need to acquire skills in working as a team and with other cadres in the delivery of patient care.

“They were able to make decisions independently and also looking at them as individuals. We sort of wanted them to interact with each other and be able to work collaboratively when we send them together.”

“The experience I got there was why are other drugs prescribed for the patients, because when you are at the hospital you just give what the doctors prescribe to the patients so when you get there and someone comes with the complaint it is then that you need to think, why is this? And why should I give this for this thing? So and then, the Registered Nurse we are working with—that [lady] helped us a lot because she will be saying, ‘these are your patients, I’m not here, so manage this patient, don’t tell me that you are going to refer, if you are going to refer the patient, tell me why you are referring the patient, can’t you manage the patient?’ So it was a good experience for me.”

Improvement in community health test scores

As stated previously, the initial PSE assessments of nursing and midwifery programs found that programs did not include community and PHC clinical experiences for students (CHAL Nursing Training Institution student records, 2009–2010 through 2011–2012). The lack of experience was illustrated in consistently low community health test scores.

Nurse educators taking part in the FGDs were asked to review student examination results in community health for the 2011–2012 academic year and compare them to results for the years before implementation of the PHC clinical placement program. All nurse educators (n=9) said that performance improved remarkably after the program was implemented, although they noted that there could have been other variables that contributed to the poor performance in previous years.

“Yes, there has been a lot of improvement. It was in the year 2009–2010 or was it 2010–2011 that we really had bad results for community health. Many students had failed. But from the subsequent years 2011–2012, 2012–2013 the results were wonderful! Even if there is a student who is going to fail, but it would never be like in the year of 2010, if you remember well. And so, I would say there is great improvement.”

“Even though we cannot delineate other factors which contributed to poor performance in those years, but currently now in these previous years we no more talk about community-

based courses performance being bad, we have not realized so far, we can't be sure to say maybe it was the clinical placement. Yes, maybe it is the clinical placement because as for now basically we are no more talking about community-based courses performance being unsatisfactory anymore. Yes it has improved."

Improvement in confidence

Nurse and midwife confidence comes from exposure to as many different patient scenarios and clinical situations as possible. In PHC clinics all scenarios are found in one setting. In all seven FGDs, there was general agreement that a correlation exists between students' competence and their confidence. As competency develops, confidence improves:

"If you look at student before going to the placement and you look at the same student after placement, you will realize there is a lot of confidence and self-belief that has built up. I don't know, maybe it's because of this independence they have at the clinic."

"I feeling we improved our competence because when I was at the health center we used to doing the patient history, patient vital signs, HIV counseling and testing, so doing that is very difficult. Having to convince someone, when the status is positive, to convince that someone it is really tricky, so we have to be confident and reassure the patient."

Focus group participants highlighted the following key areas in which student confidence improved: family planning, maternal and child health, management of HIV and AIDS clients, giving health education, history taking, providing HIV testing and counseling services, giving subcutaneous injections, and consulting and prescribing. Furthermore, being placed in PHCs exposed students to a variety of experiences. Five fundamental experiences were highlighted by focus group participants.

Client consultation

Client consultation includes important experiences such as history taking, performing a physical examination, and making a nursing diagnosis. All participants noted that students acquired these skills during PHC clinical placements. They regarded client consultation as an important skill that nurses and midwives in Lesotho should acquire.

"The first one is consultation and a strong background of pharmacy. Because in the clinics, there is no doctor, so it is the responsibility of the nurse to consult the patients and to prescribe relevant treatment."

"[A]nd then you have to know your physical assessment from head to toe. So you can be able to make a definite diagnosis of the patient."

"Making diagnosis, like if the patient tells me, I'm swollen, here, under the ears or something, then I'll be able to say this is mumps or something."

"I was able to screen a patient for STIs and treat them according to the guidelines. I was also able stage and classify HIV patients and malnourished patients in the community because we are getting some experience at the health center."

Conducting home visits and outreach

Nurses and midwives bring health care closer to where people live by conducting home visits and facilitate community involvement in health care through community outreach. This is one of the key elements of PHC. FGD participants felt that home visits and outreach gave them a chance to gain knowledge in "formulating a community diagnosis" and to develop "independence in clinical decision-making as well as improvement in critical thinking skills."

"I gained confidence, I was shy. When I was at the outreaches I was able to... to... give health talk to convince people about most of the health services about ART and "ka n'ete" [really] I've been improved in not being shy and I was able to recognize my weaknesses."

Placement at health centers also helped students realize that resources are often scarce, that there are economic considerations for the patient as well as the health system, and that improvisation is a necessary skill.

Problem-solving and decision-making

Problem-solving and decision-making were also noted as competencies students acquire in PHC settings where there are no doctors. Students are frequently given responsibility for assessing and managing conditions by themselves under the supervision of the preceptor.

“For me I would say consultation which goes together with decision-making, physical assessment and history taking. Then number two, I would say is community assessment maybe number three would be management.”

“For me I experienced critical thinking, because you would be there, you'd be the one consulting the patient and the patient presents to you with sign and symptoms, or the complaints, then you are . . . supposed to manage those complaints of the patient. And you can still find help, but you are supposed to deal with them.”

Communication and counseling skills

Communication and counseling were also noted as important skills:

“I think . . . having good communication is the first, the very first, and the most important part. Communication is most vital or essential . . . for healthy relationships. . . . We need to have good communication with people. It is then that we can be midwives in Lesotho or like they said competence [competent] midwives. The more you're doing these things, the more you're exposed to this field, the more we put our hands onto these other things, the more competent we get and the more help we are giving to our society or the community as a whole.”

“Confidence, I think, that's the best thing that I got. Because, at first, I wasn't shy too, but I was unable to speak, like to speak, to talk to people in a crowd, in a crowd, talk to a large group of people. I was able to address my points and be confident in what I'm saying, and they would listen, and I was very happy that they listened to me and there will be a difference.”

Recordkeeping

Client records kept at the health centers are different from those that used at hospitals, and placement of students at PHC facilities gave them experience in completing patient records as well as an appreciation for the importance of recordkeeping. This was noted by both students and preceptors:

“What I have realized is that eh . . . is that they were very happy about knowing how to fill the big health center records or registers. They were very happy that at least today they know how they are filled and when.”

ATTITUDES ABOUT PLACEMENT AND DEPLOYMENT

Placement

Students were asked how they felt the first time they were told they would have a clinical experience at a PHC facility. Of the 48 students who participated in the FGDs, 46 (96%) indicated they were excited about going to a health center.

“I was so excited. I was very tired of the routine we are doing here at school.”

“Had a good feeling because in the health center you get the experience you need, you go to the ANC sometimes, sometimes you consult, sometimes go to ART, there were many things!”

A person's feelings regarding a particular setting may be affected by what s/he already knows or has heard about that setting. A number of factors contributed to the students' feelings about health centers. Those that were happy with the placement indicated they wanted something different, as they were tired of the routine at the school and the hospital (as noted in the quote above). The ones with mixed feelings did not know what to expect:

"I was in the middle, because I was thinking "whom am I going to stay with there?" because of like I don't love staying with other people, sharing. But then, but at the end of the day, it was very exciting. I got what I wanted and what I went there for. Actually, where I went it was very good."

"I was scared at first, thinking about [name of facility] which is in the mountains, very rural; the temperature and how people are going to react and . . . but when we arrived, it felt just like any other place, just like [name of facility]. I became happy."

Some students had mixed feelings about the placement, but were very positive when they reached the clinic. Early exposure to rural PHC settings improved their attitudes and modified their perceptions, perhaps influencing their decision to accept deployment at PHC facilities after graduation. Having been at the PHC settings, the nursing and midwifery students perceived the PHC facilities as environments that enabled them to acquire necessary nursing/midwifery skills, and that offered an opportunity for professional socialization (Lofmark et al. 2008).

Deployment

Deployment of nurses and midwives in hard-to-reach rural areas of Lesotho remains a challenge; yet more than 70% of Basotho live in rural areas. The study sought to determine whether students exposed to PHC facilities would accept deployment at these settings after graduation. While there was minimal change between baseline and endline (87% vs. 89% stating they would accept deployment to a PHC facility), there were some specific schools/cadres that had significant changes after placement. In the focus groups, 72% (N=35) of students said they would love to work at PHC clinics. Interest in accepting a PHC placement tended to be motivated by personal and client-focused factors.

Personal motives

Participants highlighted the following as factors that would motivate them to accept deployment and be retained at the health centers: independence, personal and professional growth and development, being treated with respect by both the nursing staff and the community, support from preceptors, and being paid enough salary. Without these factors, students would not accept their assignment or would resign from health centers.

"I would like to work in the clinic because what I'm taught in class, I am able to implement it in the clinics and I would like to. . . . I like to work individually, make my own decision when I work in the clinic; in the hospital all decisions are taken by doctors."

"I like the structure of the new clinics. I would appreciate being based in any clinic despite rural or . . . because the places are so good and the residences really comfortable."

"I would like to work in the health centers because they make us grow professionally, personally and professionally, because there are many challenges and you are on your own there, unlike in the hospitals where there doctors and maybe other health care workers, where, like in the hospitals you rely on doctors mainly, it most cases you rely doctors but in the health centers you are on your own."

"Right now they really like going to the clinics as they find it a non-intimidating environment to learn their skills. The other thing that I think: no one wants to work in an environment that he/she has not explored."

Some participants would not accept deployment at health centers for personal reasons:

“I wouldn't love to work at the health centers, especially the rural ones because some of the . . . due [to] the climactic changes, some of the conditions you find that they are not so good for one to live there, not unless arrangements . . . good arrangements are made for the warmth of the health center in general, for one to feel that it's user-friendly.”

Nurse educators and clinical preceptors indicated that due to the remoteness of some health centers, there were some students who indicated they would not like to be deployed there.

“But there is an issue of hardships which is associated with the most remote areas. They would tell you, “We want to work in the health centers, but not in the most remote ones!”

Client-focused motives

Client-focused motives included factors such as bringing services closer to those in need and the holistic care of patients.

“I would like to work in the clinics because the ability of the health center . . . they bring availability of health services closer to the people which are most needed. I'd like to work at the health center because we are in close contact with our patients, and we know . . . I will know my patients more than those in hospital because at hospital they are far away from our services, and they are scared.”

“To work in the [clinic] is beneficial in that you get to know your patients, you get to know their needs, and you make follow-ups because there are village health workers who go around the villages.”

Relevance of Setting to Acquisition of PHC Skills

PHC brings health promotion, disease prevention, cure, and care together in a safe, effective, and socially acceptable manner to the community, and research participants indicated that PHC settings are more relevant than hospital settings in assisting nursing and midwifery students with acquiring competencies. When the research team reviewed the relevancy of placements at hospitals versus the PHC clinical settings, two subthemes specific to the location of the placement (hospital or clinic) appeared (Table 4).

PHC settings

All focus group participants agreed that PHC settings were more relevant than hospital settings for acquisition of nursing and midwifery competency and confidence, as they allow both personal and professional growth. During PHC clinical rotations, students gain comprehensive knowledge on management of clients, which they do not acquire in hospital settings.

“The other important thing about students going to those areas [is] that, if you look at PHC principles, PHC clinical placement, and the hospital, there is a big difference. So many health benefits can be drawn when you look at it, unlike the hospital because the hospital, the approach is just to treat (curative) while at the PHC is preventative, curative, and rehabilitative. The approach there is to find out what caused this problem, who is affected by this problem, and how best to address it.”

Hospital settings

Hospital settings provide learning opportunities. However, they were found to contribute to nurses' dependence on doctors, inhibiting the development of important nursing skills such as clinical decision-making, problem-solving, and accountability.

“The first time I was placed at the health center I was excited because I felt I was going to be independent. There was no doctor there to instruct me to do something. It said I had to be on my own, all the knowledge I got as a student, I had to implement. I had to show my competence and it was a good experience because there was a nurse

clinician there who was guiding us in consulting the patients, so it was . . . and we had a warm welcoming by the community.”

Length and Timing of PHC Placements

During the FGDs, participants explored the length and appropriate timing of clinical placements. While this was not part of the research objectives of this study, the researchers felt it was important to address because it would affect programmatic decisions for future placements.

All the participants felt that students should be placed at the PHC sites for at least four weeks to allow students to adjust at the health center, acquire skills, and practice them. Less than four weeks was noted by both students and preceptors as inadequate:

“I can say at least will be enough. Maybe if it was six weeks, because by the time they reach four weeks they will start to gain experience and to enjoy learning new things, that is the time when they are supposed to leave the health center, maybe if it was six weeks it was going to be better.”

“Two weeks is too little really for them, because the first week then it’s an orientation week and the second week they are now starting to identify themselves and we are taking them back to school. Students also felt that was too little for them. They may need about a month to be in the clinic because in other clinics we were even informed that they only go for out reaches.”

JOB SATISFACTION AND PROFESSIONAL PERFORMANCE

The majority of clinicians and preceptors were satisfied with their current positions and with their employment, according to the results of the job satisfaction questionnaire.

Figure 2. Job Satisfaction: “Considering everything, I am satisfied working here”

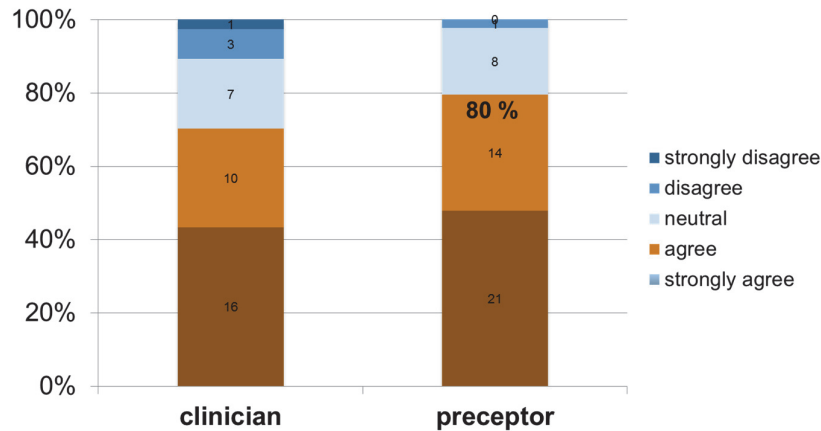
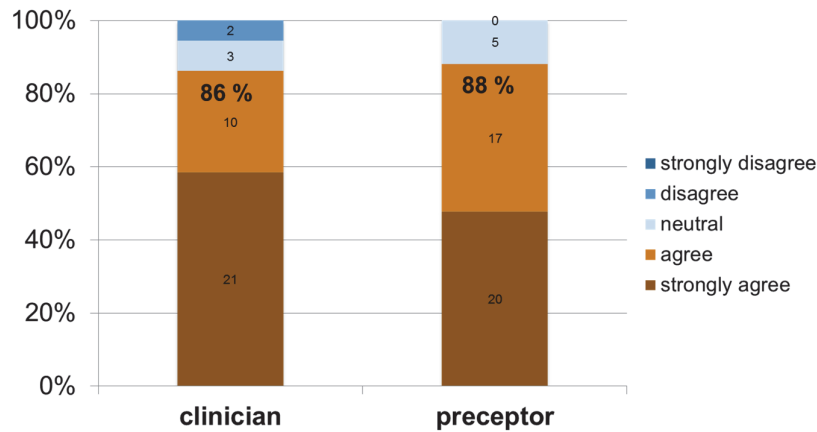


Figure 3. Job Satisfaction: “In general, I am satisfied with this job”



Students identified a number of factors that would motivate them to accept deployment at the health centers. Preceptors and nurse educators identified factors that would motivate them to stay in their jobs at health centers. The variables were categorized as either structural or personal.

Structural Variables

Influential factors pertaining to the health center or the training institution itself included accommodations, availability of equipment and utilities such as water and electricity, and transport to and from the PHC:

“ . . . again being with students....sometimes when you are alone we are cheating (taking short cuts), but when we have students, you know that I have to do this procedure properly. So I start remembering what I have been doing at school, everything and you visit your books so that you can do things properly. But when a student is here I do everything correct.”

“Conducive environment . . . network should be there. Cellphone is okay so that I can still be updated of what is happening and even be able to talk to the relatives . . . some of us have left the families, we have to know what is happening, even the children and everybody. The second one will be electricity. Electricity because ka nete some of us our eyes are so damaged that when you use a candle, it’s like there is no light during the evening and night, so this one is better. More especially you find that there are some activities you will have to perform during the night, like deliveries. The health centers are not closed, they operate throughout so if there is no light during the night it means no deliveries, or risky deliveries that are happening now.”

Personal Variables

Personal factors such as salary are those that would benefit and individual person.

“If I may respond to that one eh . . . What motivates me to be where I am now, more than eight years now, it is the support that I get from my [principle nurse educator] to be fair and frank. She supports us in every way, whether tough or smooth. She will be supporting you, she will be supporting you, she will be guiding you. And also we work as a team with my colleagues. I think that is what motivates me. We support each other, we are there for each other, we assist each other, we learn from each other.”

“Working in a clinic where students are being placed so that I can be able to transfer my knowledge . . . to them.”

Impact of Training on Performance

Trained and nontrained preceptors were observed and evaluated for their performance on 22 skills. Trained preceptors scored an average score of 85% while nontrained preceptors scores averaged 71%. The trained preceptors had a significantly higher total score ($p < .005$).

Figure 4. Professional Performance, Trained vs. Nontrained Preceptors

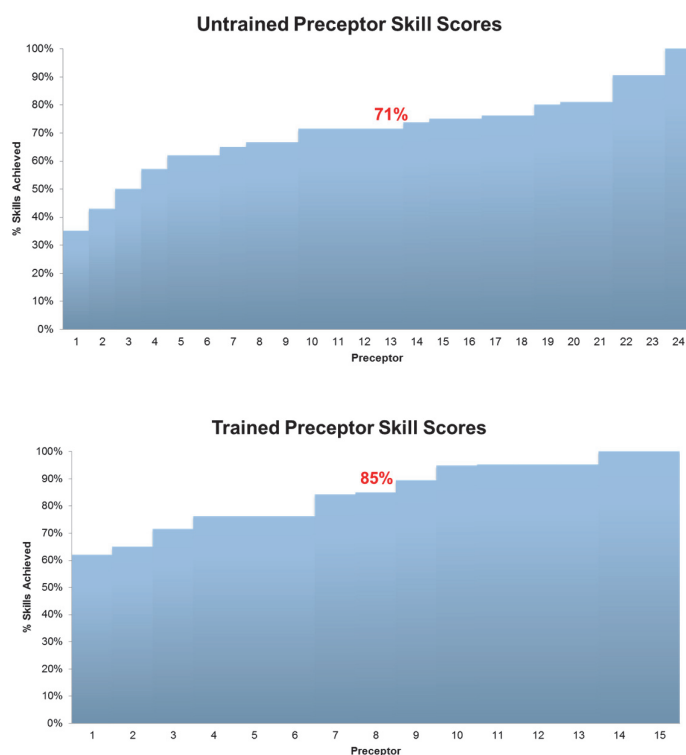


Table 13. Preceptor Test Scores

| | TRAINED | NONTRAINED |
|----------------------|---------|------------|
| Number of preceptors | 15 | 24 |
| Mean score | 18,3 | 15,6 |
| SD | 2,57 | 3,05 |
| Variance | 6,6 | 9,3 |
| T distribution | 2,88 | |

For a one-tailed test of t, with $df=37$ and $p=.05$, t must equal or exceed 1.68.

There were four skills for which trained preceptors were significantly more proficient than nontrained preceptors. All four skills were related to coaching students after they performed clinical tasks or at the end of the clinic day (Table 14).

Table 14. Comparison of Trained and Nontrained Preceptors on Four Skills

| TRAINING STATUS | SKILL | | P-VALUE |
|---------------------------------------------------------------------------------------------------|-------|----|---------|
| Asks the student to share feelings and talk about their performance with the clinical task | | | |
| | Yes | No | 0.01 |
| Attended training | 8 | 7 | |
| Did not attend training | 3 | 21 | |
| Asks the student to identify the steps that they performed well | | | |
| | Yes | No | 0.015 |
| Attended training | 7 | 8 | |

| TRAINING STATUS | SKILL | | P-VALUE |
|-------------------------------------------------------------------------------------------------|-------|----|---------|
| Did not attend training | 2 | 22 | |
| Provides positive reinforcement regarding those steps or tasks the learner performs well | | | |
| | Yes | No | 0.038 |
| Attended training | 13 | 2 | |
| Did not attend training | 12 | 12 | |
| Offers specific suggestions for improvement | | | |
| | Yes | No | 0.015 |
| Attended training | 15 | 0 | |
| Did not attend training | 16 | 8 | |

During the FGDs, the trained preceptors said that they were well prepared, but they expressed the need for refresher preceptorship training. Nontrained preceptors felt that they were not well prepared to precept students. They felt they needed training as preceptors, because they had seen remarkable improvements among their trained counterparts. Nurse educators felt that preceptors needed training to precept students. However, retention is a challenge, as some of the trained preceptors leave the health centers.

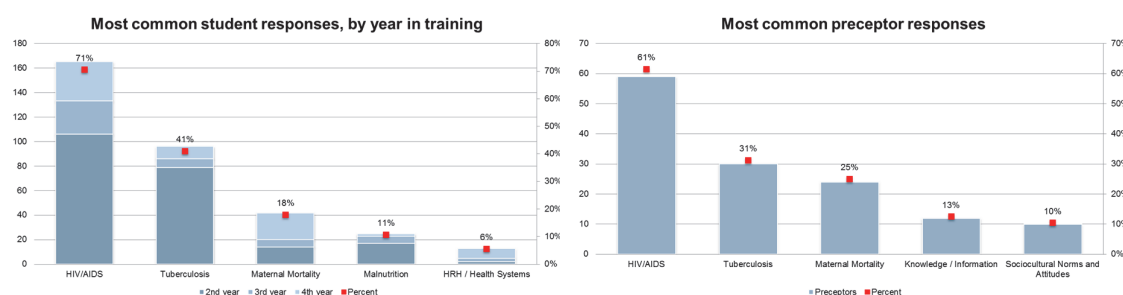
“Not in all health centers because what I have realized with [name of place] area, there is high turnover of staff in the health centers, we had preceptors trained in those health centers, but after a short period, we were informed that [a] preceptor has resigned, it is also challenging that sometimes students go to the health center and find that all the nurses there are not trained.”

“From my observation, the sisters in charge there would be ready and expecting the students. But their subordinates you would find that they solely depend on the supervisor. They would tell you that the sister in charge is the one who knows everything, and you may find that really they are not ready to supervise the students. Only the one who is in charge . . . is the one who is supposed to run around and monitor students. So I really don't think most of them will be ready.”

HEALTH PERCEPTIONS OF STUDY PARTICIPANTS

Students and preceptors had similar perceptions of the greatest health issues of the Basotho: HIV/AIDS, tuberculosis, and maternal mortality were the top three health issues identified by both students and preceptors.

Figure 5. Currently what are the Biggest Health Issues facing the People of Lesotho?



Discussion and Conclusions

PHC clinical placements are perceived by both students and preceptors as appropriate settings for students to develop both personally and professionally (Bennett et al. 2013; Dalton, Routley, and Peek 2008; Betony and Yarwood 2013). Some authors see PHC clinical placements as a means to better prepare nurses to work in rural and remote communities

and to encourage students to consider deployment in such settings after graduating (Reid 1994). Exposing students to rural communities through PHC clinical rotations has been shown to increase awareness of rural health and to influence the locations in which students choose to practice after graduation (WHO 2010b). This research was conducted to explore whether these PHC clinical placements in Lesotho would have a positive influence on the recruitment and deployment of nurses and midwives in the hard-to-reach rural health centers of Lesotho.

Initially students had mixed feelings when they were informed that they were going for PHC clinical placements. These feelings of apprehension were reportedly due to students' fear of doing harm to patients, as they still considered themselves incompetent at most skills, as well as a sense of not belonging to the nursing team at the health centers and a fear of making mistakes (Sharif and Masoumi 2005). It is therefore important that students are exposed to these settings during their training period, as it improves their attitudes and perceptions.

CONFIDENCE AND COMPETENCE

A competent nurse or midwife is one who is able to perform specific skills safely and effectively. Competency is confirmed when knowledge and skills are accurately applied and an appropriate attitude is consistently displayed in practice (Jhpiego 2010). To be able to link community health theory and practice and to develop the necessary competencies, nursing and midwifery students need clinical experience at the PHC level, because the setting provides an environment conducive to practicing a variety of skills (Betony and Yarwood 2013; Maginnis and Croxon 2010). The more students acquire competency, the more their confidence improves, and this prepares them for their future practice as nurses and midwives.

The results of this study support the notion that PHC clinical placements contribute to increasing nurse and midwife confidence and competence. The effect was greater for nursing students than for midwifery students. This is likely attributable to the fact that midwifery students are already RNs.

Some skills were difficult to evaluate due to missing data or invalid responses (i.e., entering a number not included in the scale used to assess competency/competence). Competency and confidence could not be adequately assessed for the following skills: stool sample collection, postabortion care, and IUD insertion. The authors surmise that these skills might not have been practiced in the health centers and thus respondents were unsure how to respond to the tool.

Some critical midwifery skills did not show improvement in the PHC placements, possibly because they were not practiced frequently. Skills such as breech birth, bimanual compression of the uterus, and manual removal of the placenta had a high percentage of respondents rated as not competent at baseline and endline. Students were most likely not exposed to these skills during their PHC facility rotation, because the situations that require them happen infrequently. Students need to be exposed to these skills either in a higher acuity/patient census setting or in the skills lab so they can be prepared to perform them. Lesotho has a staggering rate of HIV, and the study showed that the PHC placements impacted confidence and competence in HIV care skills among all three cadres of students. HIV skills featured prominently throughout the frequency analysis of the number of students improving. The lone exception was among midwives who reported both at baseline and at endline that they were not competent to “identify common side effects of ARVs.” However, student midwives did increase in competence to “prepare the patient for ARVs.”

While the skills lists were useful in capturing improvement in specific skills, they did not capture the whole picture of changes in student competence and confidence. The PHC setting allows students to practice taking a full health history, conduct a health assessment (including community issues), and truly implement a primary health care approach. This experience is rich for students and the researchers believe this was well captured in the

qualitative component of the study. Students overwhelmingly reported that they experienced firsthand the health issues of entire communities, including poverty, HIV, and malnutrition. They subsequently became more empathetic and knowledgeable of the challenges the communities faced.

Although Lesotho is a small country, its topography has resulted in Basotho people in different geographical areas having different cultural practices, values, and beliefs about health. To provide holistic and individualized patient care, nurses need to know and appreciate the different backgrounds their clients come from. Holistic patient care requires nurses to work in partnership with other health care cadres. Collaboration is the ability to function effectively as a member of an inter-professional team, and this process is essential for professional socialization (Hoge et al. 2014; Makupu and Botes 2000). Placement in PHC clinics increases opportunities for professional development, including participation as a respected member of the health care team.

ATTITUDES ABOUT CLINICAL PLACEMENT AND DEPLOYMENT

While the quantitative data was not sufficient to conclude that PHC clinical placement directly increased the likelihood that students would accept placement in the PHC setting, the qualitative data supports this notion. The majority of students, both in the quantitative and the qualitative component, indicated that they were willing to be placed in a PHC setting.

Students and preceptors felt that PHC clinical placements are more suitable than hospital placements because students are exposed to relevant experiences for developing competencies and confidence in providing comprehensive care for communities. PHC clinical placements also increase the likelihood that young professionals will accept deployment at health centers after graduation. However, in order to ensure that the above factors are developed, the timing for these placements should be increased to at least four weeks and be well planned with all the stakeholders involved. The need to improve PHC clinical placements as well as to prepare preceptors was also emphasized. Addressing these issues and implementing the suggested retention strategies will facilitate the recruitment and retention of young, highly qualified nurses and midwives who will deliver quality nursing care to more than 75% of the Basotho people.

Lack of resources at the PHC level is a prevalent theme among other studies reporting on student placements in rural settings (Makupu and Botes 2000; Moeti, van Niekirk, and van Velden 2004; Dennis-Antwi 2011). PHC placements enable students to understand the importance of universal access to health care, from community to clinic, and it affords the future providers an opportunity to work with communities to address locally defined needs and priorities. Given the high prevalence of HIV and the ever-increasing maternal mortality rate in Lesotho, it is extremely relevant that HIV/AIDS management as well as maternal and child health and family planned were among the top 10 experiences that students had during their PHC clinical rotations.

JOB SATISFACTION AND PROFESSIONAL PERFORMANCE OF PRECEPTORS AND CLINICIANS

This is the first evaluation to confirm the impact of the Jhpiego training skills course on preceptor performance. When looking at trained versus nontrained preceptors, using a combined score for all of the preceptor skills assessed, trained preceptors significantly outperformed nontrained preceptors. The skills that showed statistical significance were all generally related to coaching the student, highlighting that the training improved this important preceptor ability. Furthermore, the qualitative component supported the quantitative data; nontrained preceptors commented that they saw remarkable improvement in their colleagues' teaching skills following the training.

HEALTH PERCEPTIONS

Not surprisingly, both preceptors and students highlighted HIV, tuberculosis, and maternal mortality as the most pressing health issues in the communities they served. The similarities between the students and the preceptors indicate that students have good insight into health challenges, and the PHC placement experience surely contributed to their knowledge.

Recommendations

Nurses are expected to function in diverse settings (Cohen n.d.). In Lesotho, nurses are the primary workforce managing PHC facilities; as such they need to become role models for other health care providers by developing holistic and culturally competent patient care. PHC clinical rotations play an important role in preparing nurses and midwives to provide high-quality care across settings and populations.

To ensure that Lesotho has competent health care providers who can be placed anywhere, the nursing and midwifery curricula have been revised to be competency-based rather than content-based. To provide student nurses and midwives with relevant content and experience during their training, nursing education institutions must ensure that they are exposed to both hospital and PHC settings. This will ensure that they acquire competence and confidence working in both settings as well as to appreciate the differences between the two.

As noted in the Lesotho Nursing Task Analysis report, the cost-effectiveness and efficiency of training all nurses on the same skills in basic nursing education, despite divergence in practice upon deployment, needs to be considered (Stender et al. 2013). The importance of PHC clinical placements cannot be overemphasized, and appropriate planning and implementation are required to make them happen. It is recommended that PHC clinical placements are appropriately planned, implemented, and evaluated to ensure that they benefit the country and the nursing and midwifery profession as a whole.

Successful implementation of comprehensive PHC programs includes enabling government policies and legislation for equitable use of scarce resources and to ensure implementation of cost-effective health care interventions (Magawa 2012). Training institutions cannot achieve this on their own; a collaborative effort among all stakeholders is needed. Clinical placements need not only to be well planned and coordinated, but also resourced with a sufficient budget allocation. The issue of timing for clinical placements needs to be carefully considered and communicated to all involved, so that the program benefits both the students and the preceptors. When considering clinical placement duration, thought should be given to the fact that students will be going to a new setting where they need time to get used to the culture of the people there, the staff they will be working with, and the general environment in which they will be trying to attain the required skills (Bennett et al. 2013). Findings from this study have shown that a minimum of four weeks is acceptable to all concerned parties.

During planning for clinical placements, therefore, the following steps are recommended:

- Prioritize PHC placements to address country priorities and prevent needless deaths. PHC clinical placements should be included in MOH plans as the MOH revitalizes primary care.
- Develop PHC clinical placement guidelines with standardized PHC clinical placement objectives that are responsive to the competency-based curriculum for nurses and midwives.

- Improve staffing patterns at PHC facilities to ensure that students get quality supportive supervision; also ensure that the preceptors are well trained and mentored.
- Ensure that enough health centers are accredited such that a reasonable number of students can be allocated to each PHC facility (e.g., strive to achieve a preceptorship norm of four students per facility).

The following steps are recommended for appropriate implementation of PHC clinical placements:

- Improve communication and collaboration between the training institutions and the clinical sites. Nurse educators need to collaborate well with preceptors and improve clinical supervision.
- Equip students with enough theory before PHC clinical placements.
- Standardize the duration of PHC clinical placement across all NTIs.
- Train clinical nurses to be able to precept students to achieve competency and confidence.
- Inspire clinicians to mentor/precept students. This can be done through establishing a career pathway for preceptors, including acquisition of continuing professional development points.

It is further recommended that additional research be conducted to promote the value and effectiveness of PHC clinical placements to the nation and the profession. Follow-up studies could determine the influence these clinical placements have on career choices for students as well as preceptors. Deployment choices and retention could also be assessed.

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