

The Role of Nurse Midwife Technicians in Task Shifting in Malawi

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Abstract

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Background

The nursing role for all cadres of nurses in Malawi is shifting to add to their responsibilities. This shift is difficult for the nurse midwife technician cadre, due to the already unformed nature of their role. Current research on the nursing role tends to group all cadres of nurses together, which can lead to confounded results. This paper describes a secondary analysis of survey and focus group data focusing on the preparedness of nurse midwife technicians for task shifting of HIV-related tasks. The purpose of the primary analysis was to illuminate gaps in and to provide an evidence base for improving nurse midwife technician training.

Methods

Nurse midwife technicians were selected through weighted random sampling to participate in focus groups discussing preparation for nursing practice and their lived experience as nurses. They also participated in a quantitative survey of essential nursing tasks. Focus group data were analyzed using inductive and *a priori* coding, while survey data were analyzed through frequencies and unadjusted measures of association.

Results

Nurse midwife technicians expressed discomfort with some key tasks related to obstetrics, antiretroviral therapy, and non-communicable disease. Although trainings for many of these tasks are available, often nurses are unable to access them because of their status in the health care hierarchy, favoritism, and failure to pass on knowledge by those who are able to receive training. Additionally, nurse midwife technicians find themselves with insufficient supervision and an unclear idea of their scope of practice.

Conclusions

Like people working in similar nursing cadres in other countries, nurse midwife technicians find themselves in a position of ever increasing duties, a vague and malleable scope of practice, and a lack of support from supervisors. In order for the cadre to take on the increased responsibilities needed to meet the health needs of the Malawian population, the nurse midwife role needs to be clearly defined and properly supported.

TABLE OF CONTENTS

List of Tables	ii
Background	1
Methods.....	2
Study Setting.....	2
Study Subjects.....	2
Data Collection.....	3
Analysis	3
Results.....	4
HIV & PMTCT.....	5
Complicated Obstetrics & Family Planning.....	7
Non-communicable Disease	9
Structural Barriers to Task Shifting.....	10
Discussion	12
Conclusions	14
References	15

LIST OF TABLES

Table

1. Demographics	4
2. HIV & PMTCT Tasks.....	5
3. Complicated Obstetrics & Family Planning Tasks.....	7
4. Non-communicable Disease Tasks	9
5. Quotations	11

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Background

Malawi has a severe health care professional deficit with between 0.32 and 0.67 doctors, nurses, and midwives per 1,000 people (Malawi Health Workforce Observatory, 2010), far below the estimated 2.5 needed to achieve the health-related Millennium Development Goals (Chen et al., 2004). Largely due to health system weaknesses, Malawi has among the lowest health indices in the world, with a life expectancy of 52 years and high infant (66/1000), under five (112/1000) and maternal mortality (807/100,000 live births) (Malawi Health Workforce Observatory, 2010). Compounding the severe human resource shortage, the Malawian health system faces a high burden of HIV, with an adult HIV prevalence over 12% (Malawi Health Workforce Observatory, 2010). The HIV epidemic further stresses health care professionals in Malawi by increasing their workload, leading to increases in migration out of the public sector health system through shifting to other fields, early retirement, or emigration to work in the health sector outside of the country. High prevalence of HIV among health professionals further strains health workforce capacity (Samb et al., 2007).

Task shifting allows certain tasks to be delegated from the cadre that traditionally performs them to a less specialized cadre that is cheaper and quicker to train. These cadres command a smaller salary, decreasing the cost of meeting the health needs of a country. Additionally, some midlevel cadres, such as the nurse midwife technician (NMT) and clinical officer (CO) cadres in Malawi, have the added benefit for the government of not being recognized outside their country of training, thus reducing emigration (Bradley & McAuliffe, 2009). Research has shown that task shifting, when done conscientiously and intentionally, has similar outcomes to the same tasks performed by the more specialized cadres (Samb et al., 2007). Task shifting also improves access to care for more rural populations, where NMTs are more likely to live and work compared with other specialized cadres (Malawi Health Workforce Observatory, 2010). Currently, however, there is no global standard on the scopes of practice for health worker cadres. For example, in the Democratic Republic of Congo nurses are able to perform cesareans, while in Malawi no cadre of nurses is allowed to perform major surgery. The lack of standardization contributes to difficulties in defining an equitable division of labor, leading to tasks being shifted because specialized cadre no longer want to perform them rather than creating a fair division of labor (Iley, 2004).

In Malawi, hospitals are largely staffed by Registered Nurse Midwives (RNMs), of which there were slightly fewer than 2900 in 2008. RNMs undergo four years of post-secondary education, including an optional year of midwifery that more than 96% of nursing students pursue (Malawi Health Workforce Observatory, 2010). To supplement the RNs and RNMs, the Nurse Midwife Technician (NMT) cadre was developed in 2005 by adding a mandatory third year of midwifery training to the Enrolled Nurse (EN) cadre, at a cost savings of 75% and one year less than RNM training (B. Panulo, Jr., A.S. Muula, & F.C. Maseko, 2006). In the hospital setting, NMTs practice under RNMs, but in health centres NMTs are often the only nursing staff available, performing all available medical care along with Medical Assistants.

Not only can NMTs be trained-up to fill the health care provider gap faster and cheaper than training registered nurses, there are also other potential benefits. In addition to being a country-specific cadre, as mentioned above, by assuming tasks that require less critical analysis and fewer specialized skills, the NMT can free up RN time to perform more specialized care and to care for more patients. Furthermore, the NMT salary is significantly lower than that of the RN, allowing the overburdened health system to support more health care providers with the limited resources available. However, the development of new cadres in order to reduce costs and alleviate staffing shortages, rather than as a profession with distinct and well-defined duties and responsibilities, has unintended consequences. Nurses in lower-level cadres from high income countries have noted difficulties associated with “skill extension”—i.e. picking up duties and skills of registered nurses based on need—including unclear job descriptions and carrying out work that is outside their scope of practice (Blay & Donoghue, 2007; Eagar, Cowin, Gregory, & Firtko, 2010; Iley, 2004; White et al., 2008). This effect has also been noted in Malawi and Tanzania (Lobis et al., 2011). In practice, skill extension often results in a feeling that the skills learned in school and the skills used in practice are mismatched (Oelke et al., 2008). Furthermore, lower level cadres often feel that they are doing the same work as higher level cadres with lower pay and with less respect. All these issues interfere with their ability to effectively perform their jobs, and maintain high performance levels (Eagar et al., 2010; Oelke et al., 2008).

The Malawian government is expanding the role of all nurses to include first line and uncomplicated antiretroviral therapy (ART) provision as well as other ART tasks that were formerly the province of clinical officers and doctors (Health Systems and Services, 2007), without differentiating tasks between NMTs and RNMs. As an HIV prevention strategy, voluntary male circumcision is also being introduced to Malawi, although that is in the early planning stages and the responsibility of each cadre related to circumcision has yet to be determined. This study aims to identify barriers to the successful shifting of these new HIV tasks to NMTs.

Methods

A cross-sectional study was conducted as part of a syllabus review project in Malawi. Data were collected in Lilongwe and Blantyre between November and December, 2011.

Study Setting

Nurse midwife technicians were selected for the study from a national database, and worked in all three regions of the country. Participants who worked in the northern and central districts traveled to Lilongwe for data collection, and participants working in the southern district met in Blantyre.

Study Subjects

The sampling method was designed to elicit the equivalent of four participants from each district, with an initial target of 56 participants, all of whom had registered as a Nurse Midwife Technician in 2008 or 2009. Three waves of 40 potential participants were randomly selected

from the national nurse midwife technician database to meet the criteria above. Potential participants from the first wave were contacted through their health facilities, and if they were unreachable, they would be replaced by a potential participant from the second wave and so on until the target of 56 participants was reached. Although the database theoretically includes all NMTs in Malawi, it was incomplete with inaccuracies on current postings and contact information. These database inaccuracies resulted in an oversampling in some (mostly urban) areas, and undersampling in other (mostly rural) areas, as well as an imbalance in distribution between districts, and a few participants selected who had registered before 2008. In response to the database issues, the range of registration was expanded to 2005-2009 and the NMTs who registered before 2005 were censored from the task analysis data (though they were included in the focus groups).

Data Collection

Both quantitative and qualitative data were elicited from the 48 study participants. Quantitative data were collected via a self-administered task analysis survey that included tasks selected to represent common nursing tasks in priority disease areas, as identified by the Malawian Health Sector Strategic Plan (Ministry of Health (Malawi), 2011). The survey consisted of 600-items in a multiple choice format that included three questions on each of the 200 tasks designed to elicit information on frequency of conducting each task, comfort level with performing the task, and where the task was learned. The task analysis survey was piloted two weeks before the first session in Lilongwe, to ensure that the Scantron technique was understandable to the NMTs. The pilot was also used to determine the length of time needed to answer all 600 questions with ample time for breaks, and that the wording of the survey was clear and comprehensive.

Qualitative data were collected from seven focus group discussions. Focus group guidelines were developed by the study team, and were consistently used by the six focus group moderators. Focus groups lasted approximately 90 minutes, and discussions were recorded on a digital voice recorder and were transcribed by either an American or Malawian transcriptionist. The transcripts were checked against the recordings by two nurses with experience working in the Malawian setting. Participants were encouraged to use Chichewa, if necessary, though Chichewa was infrequently used. Chichewa sections were translated either by facilitators during the focus groups or from transcribed sections.

All subjects signed consent forms before participating in data collection, and were informed that there would be no penalty for deciding not to participate, or for choosing not to answer questions at any point.

Analysis

Quantitative data from the task analysis survey included univariate descriptive statistics for tasks related to HIV, complicated obstetrics, family planning, and non-communicable diseases, resulting in a subset of 162 questions related to 54 tasks. Frequencies were calculated using Excel[®], and unadjusted measures of associations for were calculated for comparisons between hospital-based and health centre-based NMTs, also using Excel[®].

Analysis of the focus group data was conducted using Atlas.ti through an iterative process, using both *a priori* and inductive coding. When new themes were identified, already coded materials were reviewed to ensure that the themes identified were consistent across focus groups.

The University of Washington Institutional Review Board approved the protocol for the secondary data analysis. The original data collection was approved by the Nurses and Midwives Council of Malawi.

Results

The majority of participants were between the ages of 25 and 29 (52.1%), female (72.9%), and were hospital-based (64.6%) (Table 1). Hospital-based NMTs were more likely to be older and to be from the north and central regions than were NMTs based in health centres.

Table 1. Overview of Study Participants

	Health Centre (n=17) N (%)	Hospital (n=31) N (%)	Total (n=48) N (%)
Age			
20-24	1 (5.9)	3 (9.7)	4 (8.3)
25-29	11 (64.7)	14 (45.2)	25 (52.1)
30-34	3 (17.6)	10 (32.3)	13 (27.1)
35-39	1 (5.9)	3 (9.7)	4 (8.3)
Unknown	1 (5.9)	1 (3.2)	2 (4.2)
Region			
South	13 (76.5)	13 (41.9)	26 (54.2)
Central	3 (17.6)	8 (25.8)	11 (22.9)
North	1 (5.9)	9 (29.0)	10 (20.8)
Unknown	0 (0.0)	1 (3.2)	1 (2.1)
Gender			
Female	14 (82.4)	21 (67.7)	35 (72.9)
Male	3 (17.6)	10 (32.3)	13 (27.1)
Year Graduated (NMT Training)			
2005	1 (5.9)	1 (3.2)	2 (4.2)
2006	1 (5.9)	1 (3.2)	2 (4.2)
2007	0 (0.0)	6 (19.4)	6 (12.5)
2008	14 (82.4)	21 (67.7)	35 (72.9)
2009	1 (5.9)	2 (6.5)	3 (6.3)

HIV and PMTCT

When answering questions about tasks related to HIV and Prevention of Mother-to-Child Transmission (PMTCT), as shown in Table 2, participants expressed that they did such tasks frequently and that they generally felt comfortable or skilled doing them. Most participants reported learning these tasks in school or in-service, as opposed to in more informal training. Exceptions were with some counseling, prescription, and ART administration, where confidence and frequency rates were slightly lower. More than 10% of participants who stated they frequently managed opportunistic infections, screened for side effects of ARTs, and educate on methods to prevent HIV transmission were also uncomfortable performing those tasks.

Table 2. HIV & PMTCT Tasks

Task	Does often (daily/ weekly/ monthly) N (%)	Feels competent/ skilled N (%)	Learned in school or in-services N (%)	Among those who do task often, % that feel uncomfortable
Initiate and follow-up Anti-retroviral treatment (ARV) for HIV positive women according to 2011 national guidelines.	25 (52.1)	28 (58.3)	33 (68.8)	4.0% (1/25)
Provide ART prophylaxis during labour.	23 (47.9)	32 (66.7)	38 (79.2)	0.0% (0/23)
Determine eligibility of HIV patients for ART according to CD4 counts and clinical staging.	27 (56.3)	31 (64.6)	40 (83.3)	3.7% (1/27)
Screen for ART medication side effects using the standard clinical monitoring checklist.	25 (52.1)	27 (56.3)	35 (74.5)	12.0% (3/25)
Provide HIV-screening to children under 24 months who are born to HIV positive mothers.	23 (47.9)	32 (66.7)	36 (75.0)	0.0% (0/23)
Counsel parents on approaches for disclosing HIV status to pediatric patients.	15 (31.3)	21 (44.7)	27 (56.3)	6.7% (1/15)
Facilitate timely enrollment of exposed infants (including those breastfeeding from HIV infected mothers) into HIV care.	25 (52.1)	31 (64.6)	36 (75.0)	4.0% (1/25)
Provide counseling on infant and child feeding to HIV positive mothers.	26 (54.2)	34 (70.8)	41 (89.1)	0.0% (0/26)
Prescribe and dispense ART for HIV positive mothers.	26 (55.3)	28 (59.6)	34 (70.8)	0.0% (0/26)
Prescribe and dispense ART for pediatric patients.	20 (41.7)	27 (56.3)	34 (70.8)	10.0% (2/20)
Educate pregnant women (and their partners if available) on methods to prevent HIV infection and other STIs.	36 (75.0)	41 (85.4)	46 (95.8)	11.1% (4/36)
Support newly diagnosed HIV patients to cope with psychosocial and emotional pressures.	27 (56.3)	33 (70.2)	36 (75.0)	7.4% (2/27)
Provide adherence counseling to HIV patients.	30 (62.5)	36 (75.0)	41 (85.4)	0.0% (0/30)

Table 2 continued. HIV & PMTCT Tasks

Task	Does often (daily/ weekly/ monthly) N (%)	Feels competent/ skilled N (%)	Learned in school or in-services N (%)	Among those who do task often, % that feel uncomfortable
Provide counseling on Prevention with Positives interventions, e.g. ART adherence, recognizing symptoms of STIs, etc. to HIV positive patients.	28 (58.3)	33 (68.8)	36 (75.0)	3.6% (1/28)
Routinely screen HIV patients for active TB.	22 (45.8)	30 (62.5)	32 (66.7)	0.0% (0/22)
Identify and monitor HIV-related diseases such as oral candidiasis, chronic diarrhea, TB, shingles (herpes zoster), etc. using the standard clinical monitoring checklist for HIV patients.	26 (54.2)	32 (66.7)	35 (72.9)	3.9% (1/26)
Treat HIV-related diseases such as oral candidiasis, chronic diarrhea, TB, shingles (herpes zoster), etc.	26 (54.2)	33 (68.8)	39 (81.3)	11.5% (3/26)
Identify and diagnosis cases of HIV treatment failure.	22 (45.8)	31 (45.8)	39 (81.3)	0.0% (0/12)
Provide CPT to HIV patients.	30 (63.8)	33 (68.8)	36 (75.0)	0.0% (0/22)
Initiate Post-Exposure Prophylaxis (PEP) for eligible patients with risky exposures in the last 72 hours.	12 (25.0)	29 (61.7)	35 (74.5)	0.0% (0/12)
Link HIV positive patients to appropriate community programs and local resources.	18 (37.5)	25 (52.1)	33 (68.8)	0.0% (0/18)
Compile monthly facility HIV reports for ANC, Maternity and exposed child follow up visits.	15 (31.3)	21 (44.7)	29 (60.4)	0.0% (0/15)

In the focus groups, however, participants stated that they were not comfortable with ART protocols. All seven focus groups spontaneously raised both pre- and in-service training gaps for general HIV-related tasks, and specifically ART-related tasks. Three of the focus groups noted training gaps in HIV counseling and ART tasks first, before all other subjects.

Participants identified gaps in the in-service and continuing professional development system, using the new ART guidelines and their inability to access desired trainings to illustrate those issues. Even with mandatory training of the updated ART guidelines (Ministry of Health (Malawi), 2011) that was supposed to cover at least 4,000 health care professionals between February and December 2011 (S. Lissit, personal communication, August 15, 2012), only one of the participants had received the trainings by the time of data collection in late 2011. Participants in other focus groups mentioned having attended a presentation of a staff member who attended the training, that only a few clinicians at his facility were sent for ART training, or that they had been selected for the training but were not allowed to attend. NMTs expressed that they felt unprepared for patients they treated every day: "Listen to me, just listen to me. Each and every time we meet a person with HIV positive; so we are working with these people.

A person with HIV; but I myself, since 2005, I don't know ART; people who can go [to the trainings] are limited.”

Participants in three focus groups attributed the lack of training on updated ART guidelines and other topics to failed leadership, including favoritism, selecting attendees based on working schedule rather than according to need, and a preference for sending RNs to the trainings instead of NMTs. In two focus groups, participants stated that it was difficult for NMTs outside of health centres to be selected for any type of in-service training. In one focus group, several participants stated that RNs were preferentially selected for trainings “...because whenever there's something good, like workshops, they themselves [RNs], they go to attend,” and because the NMTs are needed to work in the wards, “Yes, they say, if you go there, who'll be working here?”

Complicated Obstetrics and Family Planning

Participants indicated that they were comfortable performing nearly all of the complicated obstetric and family planning tasks (Table 3), and indicated that they learned these skills in nursing college. Exceptions were administering oxytocin to promote labor, manual removal of the placenta, managing shoulder dystocia, performing manual vacuum extraction and inserting intrauterine devices (IUDs).

Table 3. Complicated Obstetrics & Family Planning Tasks

Task	Does often (daily/ weekly/ monthly) N (%)	Feels competent/ skilled N (%)	Learned in school or in-services N (%)	Among those who do task often, % that feel uncomfortable
Identify obstructed labour and initiate intervention and/or referral.	26 (54.2)	36 (75.0)	48 (100.0)	7.69% (2/26)
Initiate labour augmentation using oxytocin for prolonged labour.	10 (20.8)	17 (35.4)	41 (85.4)	0.0% (0/10)
Identify prolonged or preterm rupture of membranes and manage or refer appropriately.	27 (56.3)	40 (83.3)	46 (95.8)	0.0% (0/27)
Perform vacuum extraction deliveries.	3 (6.3)	10 (20.8)	41 (87.2)	0.0% (0/3)
Identify and provide the initial treatment for severe pre-eclampsia and eclampsia, including referral to next level of care.	19 (39.6)	29 (60.4)	44 (91.7)	21.1% (4/19)
Manage postpartum haemorrhage (PPH) using uterotonic medications and bimanual compression of the uterus.	22 (45.8)	32 (66.7)	46 (95.8)	0.0% (0/22)
Perform manual removal of placenta.	10 (20.8)	22 (45.8)	41 (85.4)	10% (1/10)
Provide blood transfusion.	23 (48.9)	37 (77.1)	42 (89.4)	0.0% (0/23)
Perform breech deliveries.	17 (35.4)	28 (58.3)	47 (97.9)	5.9% (1/17)
Perform twin deliveries.	17 (35.4)	31 (64.6)	47 (97.9)	5.9% (1/17)
Identify and provide initial management for prolapsed umbilical cord.	11 (22.9)	30 (62.5)	47 (97.9)	18.2% (2/11)

Table 3 continued. Complicated Obstetrics & Family Planning Tasks

Task	Does often (daily/ weekly/ monthly) N (%)	Feels competent/ skilled N (%)	Learned in school or in- services N (%)	Among those who do task often, % that feel uncomfortable
Identify and refer malpresentation that cannot be delivered vaginally.	18 (37.5)	35 (72.9)	44 (91.7)	0.0% (0/18)
Manage shoulder dystocia.	3 (6.3)	12 (25.0)	44 (91.7)	0.0% (0/3)
Insert contraceptive rods.	11 (22.9)	15 (31.3)	28 (58.3)	0.0% (0/11)
Insert IUDs.	1 (2.1)	4 (8.3)	29 (60.4)	0.0% (0/1)
Provide counseling for family planning to HIV patients.	27 (56.3)	37 (77.1)	42 (87.5)	0.0% (0/27)

Participants in four of the seven focus groups identified lack of training in manual vacuum extraction as a gap in their training. Participants explained that while RNs or clinical officers are generally responsible for vacuum extractions, NMTs can receive training to allow them to perform this task. However, only one participant had received this training, and reported that she had that responsibility only because she worked at a rural health centre where there was no one else available to perform the task. IUD and contraceptive rod placement were also identified as tasks that were beginning to be shifted to NMTs, but most of the NMTs had not undergone the training at the time of data collection.

Manual vacuum aspiration (MVA) was a skill mentioned in three focus groups that was not included in the quantitative questionnaire. Participants expressed a desire to receive training on performing MVAs, but also used it as an example of other cadres of medical professionals relying on NMTs to do unwanted tasks. They explained that even though other cadres, such as RNs, were preferentially selected to attend trainings, the trainings did not shift who was responsible for the day-to-day tasks; one NMT complained that "...everything depends on the NMT..." because even when coworkers in different cadres have gone to the same training, the other cadres decline to use their new skills in favor of asking the NMT to do it.

Another participant explained that the expectations that NMTs perform routine duties can lead to a failure to transmit specialized knowledge, and that RNs refuse to share knowledge of how to perform duties. Even when potential mentors are in the ward, "You find that people are not doing [well performing their duties, and] there is a registered nurse who knows it better; but instead of . . . doing the job or teaching you how it is supposed to be done you find that that registered nurse is delegating to you." Some facilities have mechanisms for coworkers to share information obtained at trainings. Participants in one focus group disagreed about the efficacy of this approach, with one saying, "Sometime in orientation [to an in-service training topic] they don't give enough or correct information," and another stating that "When someone went for a training and presents as a CPD [Continuing Professional Development] session, I gain knowledge."

Non-communicable Disease

Participants indicated less comfort and performance frequency for non-communicable diseases compared with obstetric or HIV tasks (Table 4). In particular, half or fewer of the participants were comfortable performing all of the tasks around managing overweight patients, as well as the more complicated tasks around diabetes, such as managing medications. There was greater frequency and comfort about tasks related to asthma, which was also reflected in the focus group discussions. Of note is that, with the exception of asthma, non-communicable diseases were mentioned only rarely without prompting in the focus group discussions, and there was little agreement among participants.

Table 4. Non-communicable Disease Tasks

Task	Does often (daily /weekly /monthly) N (%)	Feels competent/ skilled N (%)	Learned in school or in- services N (%)	Among those who do task often, % that feel uncomfortable
Assess patient BMI to evaluate for overweight and obesity.	5 (10.4)	16 (33.3)	40 (83.3)	0.0% (0/5)
Teach patients management of overweight and obesity through nutrition and activity.	7 (14.6)	20 (41.7)	40 (83.3)	14.3% (1/7)
Evaluate patients for signs and symptoms of diabetes.	6 (12.5)	27 (56.3)	45 (93.8)	0.0% (0/6)
Assist patients to manage their diabetic medication regimens, including oral medications and/or insulin.	9 (18.8)	24 (50.0)	43 (89.6)	0.0% (0/9)
Evaluate patients for complications of diabetes, such as neuropathies.	7 (14.6)	14 (29.8)	42 (87.5)	0.0% (0/7)
Manage patients who have acute hypoglycaemia or hyperglycaemia	22 (45.8)	31 (64.6)	45 (93.8)	4.6% (1/22)
Teach diabetic patients about nutritional management of their diabetes.	10 (20.8)	29 (61.7)	47 (97.9)	0.0% (0/10)
Monitor blood pressure three times over more than one day to evaluate for hypertension.	25 (52.1)	39 (81.3)	46 (95.8)	0.0% (0/25)
Educate hypertensive patients about management of hypertension through diet and exercise.	20 (41.7)	38 (79.2)	48 (100.0)	5% (1/20)
Refer patients with Stage 1 or 2 hypertension immediately.	17 (35.4)	29 (60.4)	40 (83.3)	0.0% (0/17)
Monitor blood pressure and pulse before administering antihypertensive medications.	24 (50.0)	37 (77.1)	45 (93.8)	4.2% (1/24)
Educate patients on how to recognize warning signs of hypertensive emergencies (including severe headache, numbness and tingling in face or extremities, confusion).	26 (54.2)	39 (81.3)	47 (97.9)	0.0% (0/26)

Table 4 continued. Non-communicable Disease Tasks

Task	Does often (daily /weekly /monthly) N (%)	Feels competent/ skilled N (%)	Learned in school or in- services N (%)	Among those who do task often, % that feel uncomfortable
Evaluate patients for asthma	24 (50.0)	38 (79.2)	44 (91.7)	8.3% (2/24)
Refer severe asthmatic patients who are not responding to conventional treatment.	17 (35.4)	31 (66.0)	44 (91.7)	5.9% (1/17)
Educate patients on air pollution and triggers for asthma.	20 (41.7)	37 (77.1)	44 (91.7)	5% (1/20)
Administer nebulizers to patients in immediate respiratory distress due to wheezing.	14 (29.2)	29 (60.4)	35 (72.9)	7.1% (1/14)

Structural Barriers to Task Shifting

Both quantitative and qualitative results indicate that NMT's scope of practice differs by location and type of facility where they work. Hospital-based NMTs are near the bottom of the hierarchy and are restricted from many tasks health centre NMTs are expected to perform. Health centre NMTs, on the other hand, call themselves "the one" and "general fitters," terms that convey their responsibility for the entire health centre, presence at the health centre when other health care providers are not there, and flexibility in caring for every patient and every ailment that comes to their centre, even when they are working outside their scope of practice (Table 5). Hospital-based NMTs were more likely to report comfort performing non-communicable disease tasks and were less likely to report comfort performing obstetric and ART tasks than health centre-based NMTs ($p < 0.05$). Only three tasks (vacuum extraction, shoulder dystocia, and complications from diabetes) did not show statistical significance between groups.

In the focus groups, NMTs also raised the issue that the roles of NMTs, RNs, and Medical Assistants (MAs) are poorly defined and differentiated from each other. While RNs are supposed to have an active clinical role in the Malawi health system (Nurses and Midwives Council of Malawi, 2008), several NMTs complained that RNs do not assist with clinical duties, preferring to go to trainings and to do office work. The confusion extends to pre-service training, where NMTs working on a ward supervise RN students in the absence of the clinical instructors, even though as soon as the students from Kamuzu College of Nursing (KCN) graduate, they will be supervisors of the NMTs. One participant stated that a clinical instructor told a KCN student in front of her that the student should not be providing daily clinical care because the student would be a manager.

The interaction with Medical Assistants (MAs) is somewhat less fraught with tension; some participants stated discontent with MAs viewing themselves as being in charge. However, others were more sanguine about it, stating "It is just a matter of understanding," that the Ministry of Health operates with MAs in charge. However, participants in three focus groups explained the tension they experienced regarding MAs and the hierarchy in which NMTs find

themselves prevented them from providing quality care. For instance, there was laughter and wide agreement when one participant discussed being made responsible for frequent facility stockouts by MAs who ask “for money from the nurses . . . for transport to go and collect the drugs.” Other NMTs described being blocked from providing care when the NMTs were not allowed to access supplies. One NMTs solution was to use the hierarchy to her benefit, telling the MA she worked with, if “something. . . will go wrong at Maternity just because I’m short of supplies which you are keeping, [then] I’ll document.”

Table 5. Quotations

“The One”

“. . . when you are at work, you are the one, you are, you are the one attend to antenatal mothers. You are the one to attend to the mothers in labour, you are the, the one to attend to family planning clients. You also the one attending to post-natal mothers. And even when the MA is not there, you are the ones to attend to OPD. . . . But the workload now compared the way to it we have more workload as compared to others that are working at District or Central Hospitals. We do work 24 hours, day and night.” (FGD 1)

“Exhaustion is there. Frankly speaking we are the one who work in the wards. Medical assistants are there, clinical officers are there, they just come to do a ward round and go, but a nurse midwife technician is always there.” (FGD 5)

Cadre Hierarchy

“We have the rules that during the weekend no patient is helped because the keys for the pharmacies are in the hands of the in charge. But you see the patient convulsing and you have something in your heart, that if someone could have been near, I could have done something to serve this person.” (FGD 6)

“[MAs] have a certificate. Nurse midwife technicians, we have a diploma. But when it happens you [are] there at Health Center, [MAs say], ‘I am the Health Centre in charge!’” (FGD 7)

“We are two in this labour ward but I’m the one working while [the RN] is just sitting there doing their laptop, playing with his or her, her, laptop . . .” (FGD 5)

Finally, participants stated they did not receive proper supervision in pre-service training or in their clinical practice. In six out of the seven focus groups, participants told stories of “bosses [who] are harsh” and other cadres being “fault finders,” who become angry, criticize, and yell at NMTs and students when asked questions. NMTs complain of being asked to do tasks they are too busy or do not have the knowledge or supplies to carry out, and then being shouted at by instructors, Clinical Officers, patients, and supervisors when they cannot carry out the requested task. They find it particularly frustrating when they are yelled at in front of patients, undermining respect and authority, and leading to NMTs who are afraid to ask for assistance, which is why “you see the students run away when the tutor is coming.”

Discussion

The NMT role is a cadre that, like similar cadres around the world, has an ill-defined scope of practice and is frequently asked to work outside the official job description. Overall, NMTs report comfort with the tasks required of them, although they are not comfortable with certain key tasks, particularly related to the new ART protocols; obstetric complications, such as manual vacuum extraction, manual vacuum aspiration, and shoulder dystocia; some non-communicable disease tasks, including diabetes care; and some family planning tasks, such as inserting and removing IUDs and contraceptive rods. The acquisition of new skills by NMTs is often passed on informally due to limited training opportunities, resulting in inadequate skills development. Furthermore, NMTs are in an uncomfortable position due to high expectations with little control or authority in the health setting.

This study has a number of limitations. Despite attempts to correct imbalances in sampling between urban and rural NMTs, urban, hospital-based NMTs were oversampled, which may have skewed results towards higher comfort levels with non-communicable disease, which has a higher prevalence in urban areas, and the experiences of very rural NMTs may not have been exhausted in the focus groups. In addition, the study relied on a relatively small sample size, limiting the precision of sub-group analyses. Furthermore, because the study relies on self-reported claims by NMTs rather than direct observation, it is possible that some results do not reflect true work challenges or practices. Another limitation is that the focus groups and task analysis were conducted primarily in English, which may have biased participation towards those NMTs who were more comfortable with English. Finally, the task analysis survey had 600 questions, which may have led to test-taking fatigue, resulting in biased responses questions near the end of the survey. This effect was minimized by providing frequent breaks for participants.

Despite the limitations, this study has a number of notable strengths. First, the random sampling approach from a nationwide sampling frame provides results that are representative of Malawi in its entirety. A second strength is that results were consistent across the focus groups, with facilitator reports indicating that participants spoke from shared experience across the country and across facility types. The mix of quantitative and qualitative data, and the amount of data collected, allowed for a comprehensive description of activities performed by NMTs, and NMT perception of factors that facilitate and impede the acquisition and use of essential health care tasks.

Discrepancies were found between quantitative and qualitative results, even though NMT respondents were the same and focus groups were conducted the day following the task analysis survey. This difference was most apparent in the HIV-related tasks, where participants expressed comfort with most of the tasks in the task analysis questionnaire, and expressed discomfort during the focus group discussions. One explanation for this discrepancy is that NMTs feel unprepared for the rapidly changing HIV protocols, including the change of prevention of mother to child transmission of HIV protocols to Option B+, and the rollout of

additional responsibilities for NMTs, such as the expectation that NMTs would begin prescribing ART.

The primary research implication is that most of the research about nursing in Sub-Saharan Africa does not delineate between enrolled nurses and registered nurses. The difference between mid-level health cadre roles in urban and rural facilities and at different facility levels in resource-poor nations is another research gap that makes understanding the whole picture of health care provision difficult. Research must be done that examines role differences in theory and practice and how well training supports those differences. Treating both inter- and intra-cadre roles as the same in research leads to gaps in knowledge about realities in clinical situations.

Practical implications must take into consideration the nature of task-shifting. According to Iley (2004), when task shifting occurs professionals try to enhance their own position by taking on skills that previously were only allowed to a higher cadre, while handing off their least desired skills to the cadre below them. This explains RNs sitting in their offices when NMTs are otherwise alone in a ward, and why focus group NMTs imply a situation that is familiar to U.S. nurses: the concern that RNs might be handing off all of the duties and skills that make the nursing cadre what it is in the desire for a more professional role with greater autonomy and authority. Any plans for task shifting in Malawi must take into consideration that scopes of practice after task shifting must be reasonable, and that all necessary duties must be performed by the entire team of health care professionals. Inter- and intra-cadre role differences should also be considered when designing a task shifting program. Those differences must be identified and decisions must be made about whether to reduce those differences or codify them in the training, potentially training hospital-bound NMTs differently from those who will work in rural health centres. NMTs and all other cadres should be able to leave their training feeling well prepared for their careers.

The system for continuing professional development must be improved, with guidelines on prioritization and selection of attendees for trainings and supervision that guidelines are followed to ensure broad coverage of trainings. Focus group participant assertions that selection of attendees for trainings and then higher cadre trainees refusing to use their new skills were supported by another Malawian study. (Muula & Maseko, 2006) noted that senior staff goes to more lucrative meetings and workshops, even when it would be more appropriate for other cadres. Resentment increases when the people who go to the training are unable to pass on what they learned there, or when they do not assist in the patient care that was taught in the workshop, but instead continue to focus on administrative tasks. A continuing professional development database can also be created and integrated with an improved nursing database, to ensure that the Nurses and Midwives Council (NMCM) is aware of coverage of trainings, and can follow up on expectations for those who have attended trainings.

In the complicated environment that is a resource-poor health care facility, all health professionals need to work as a team. How the team should work together should be developed by the relevant regulatory bodies, and then teamwork should be built by making the

role of each cadre clear. Training different cadres together might also help develop a less antagonistic relationship between cadres. Additionally, supervision must be something supervisors are trained to do; one Malawian study found that there is little appraisal of mid-level providers (Bradley & McAuliffe, 2009) and another found that some supervisors absent themselves from supervision because they don't know how to perform their job duties and they don't want to appear to fail at their jobs (Muula & Maseko, 2006). Supervisory expectations must be made clear, and supervisors must be provided with the skills to supervise effectively. The supervisors themselves must be evaluated on a regular basis, to increase accountability.

Conclusions

Successful task shifting requires well-defined roles, supportive supervision, and for tasks to be shifted purposively rather than by inertia (Health Systems and Services, 2007). Currently, the NMT role is lacking in all of these elements. Because task shifting has to happen for HIV tasks, now is an ideal time to develop the NMT role into one that better serves the Malawian health care system, patients, and the NMTs. The NMT/EN/LPN role is one for which it is difficult to develop a well-defined and supported role. However, Malawi cannot staff their health facilities without Nurse Midwife Technicians; therefore it is valuable to make the role work. To develop the role, there needs to be a process of evaluation to ensure that the scope of practice, actual practice, and training all support each other.

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