

HIV TASK SHIFTING FROM PHYSICIANS TO NURSES IN NIGERIA

HIV Task Shifting from Physicians to Nurses in Nigeria: Examining the Correlates of Nurse

Self-Efficacy and Job Satisfaction

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Key words: *NIMART, Nurse-managed ART, Task Sharing, Task Shifting*

ABSTRACT

With 3% global health workforce, the African region accounts for 25% of global disease burden and the largest proportion of people living with HIV. Although task sharing between physicians and nurses improved access to ART, the process also led to nurses being assigned roles beyond their scope of practice. In a sample of 399 nurses in “task-shifted” roles, this study examined the correlates of self-efficacy and job satisfaction in Nigeria. We surveyed of 508 nurses from 8 of 36 states in Nigeria. There were 399 usable responses (a response rate of 79%). The mean age and years in nursing practice were 42 (SD = 9.1) and 17 (SD = 9.2); 86% worked in Government hospitals, 26% in Tertiary hospitals, 76% were female and 70% Registered Nurse/Midwives. Over 95% received training and mentoring and 82% had previous HIV experience. Demographic and setting variables were correlated with self-efficacy and job satisfaction. Years in nursing practice negatively correlated with Self-Efficacy for HIV task sharing. The correlates of Job Satisfaction were: years in nursing practice; dual licensure as Nurse/Midwife; working in tertiary hospital; older age; male gender; duration of training and mentoring. Working in secondary and primary health centers as well as faith based hospitals were correlated with increased job dissatisfaction. The nurses reported system related challenges which negatively affected their job satisfaction. These findings have critical implications for burnout, retention and quality service delivery. System-specific strategies such as: complementary staffing; continuing education; certification; updated policies, curricula and scope of practice are needed to support nurses working in task-shifted roles.

Key words: *NIMART, Nurse-managed ART, Task Sharing, Task Shifting*

HIV Task Shifting from Physicians to Nurses in Nigeria: Examining the Correlates of Nurse Self-Efficacy and Job Satisfaction

Although the African region has the worst health worker shortage with only “3% of the global health workforce” the region “bears 25% of the global disease burden” (WHO, 2006a, p.xix). The Sub-Saharan African countries have the largest proportion of persons living with HIV and 70% of new HIV infections in 2013 (Joint United Nations Program on HIV & AIDS [UNAIDS], 2014). The Ebola outbreak, the Human Immunodeficiency Virus (HIV) epidemic and unmet Millennium Development Goals (MDG) illuminate the fragility of health workforce challenges in Africa (UNAIDS, 2011a and 2011b)

Since the WHO recommended “task shifting” as a workforce strategy to alleviate health worker shortages, African nurses providing services to patients living with HIV have taken on duties traditionally performed by physicians (WHO, 2006b; WHO/PEPFAR/UNAIDS, 2008). These advanced HIV management roles include 1) initiation and re-prescriptions of ART, 2) clinical monitoring of treatment response, 3) identifying and treating opportunistic infections (OI), 4) interpreting diagnostic reports, 5) using clinical and laboratory findings to make decisions about patient prognosis, and 6) developing and implementing and evaluating plans of care. In many African countries these roles were not originally within the nurses’ scope of practice. Preparatory training and mentoring to support nurses’ transition into these advanced roles varied within and between countries (Georgue et al. 2012; WHO 2013).

Since its inception, task shifting pragmatically evolved into “task sharing” due to several reasons. Dambisya and Matinhure (2012) identified initial misconceptions and uncertainty among health workers who thought it meant “dumping of tasks” or “unauthorized delegation” of tasks. Ivers, et al., (2011) observed that tasks were shared with those who acquired the roles

instead of being shifted. For many health professionals including nurses, “task sharing” became a more acceptable term because it was less territorial, implied team work and was more reflective of the reality as tasks were not completely handed off.

Task sharing among other innovative strategies in sub-Saharan Africa, contributed to the improved access to ART, reduced AIDS mortality and number of children vertically infected (UNAIDS, 2012 & 2015a). As HIV infection transitions to a chronic disease, its management and follow up in Africa would require skilled health professionals to render ongoing treatment. The UNAIDS and WHO have recognized task sharing as a viable strategy for health system strengthening. At the International AIDS Society ([IAS], 2015) conference, officials of the UNAIDS elaborated on its next campaign for ending AIDS called “90-90-90”. With this agenda, the UNAIDS recommends institutionalizing innovative strategies such as “...task-shifting in clinical settings... to improve health service delivery” (UNAIDS, 2015a. p.44). The goal of “90-90-90” is to “test 90% of people living with HIV; treat 90% of persons diagnosed as HIV positive with ART; and have 90% of all persons on ART achieve viral suppression” (UNAIDS, 2015b. p.1). While this is a laudable agenda, for most sub-Saharan African countries, task sharing is no longer a short term workforce intervention. In order to achieve community ART delivery for the 90% on treatment, task sharing will need to extend beyond nurses and community health workers.

Three recent systematic reviews of evidence on task sharing in Africa found growing support for nurse managed HIV care (Emdin, Chong, & Millson, 2013; Iwu & Holzemer, 2013; WHO, 2013). Irrespective of this growing support, there was a dearth of evidence on nurse related outcomes (Iwu & Holzemer, 2013). This study examined the correlations among nurse

demographic factors, setting characteristics, self-efficacy for HIV task sharing and job dissatisfaction among Nigerian nurses.

Study Framework

The reliance on nurses and other non-physician providers in sub-Saharan Africa to meet the growing health needs; nurses' increasing workload; HIV stigma; and work environment stressors have been found to affect health worker satisfaction and dissatisfaction (Bodilenyane & Motshegwa, 2012; Chirwa, et al., 2009; McAuliffe, et al. 2009; Faye, Fournier, Diop, Philibert, Morestin, & Dumont, 2013). The complexity of HIV nursing, poor working conditions, rising workload, and non-commensurate pay rates negatively affect job satisfaction. Very low satisfaction scores for job prospects, pay, and training as well as negative relationships between stigma and job satisfaction were found among nurses in Lesotho, Malawi, South Africa, Swaziland, and Tanzania. (Bodilenyane and Motshegwa, 2012; Chirwa et al., 2009). High levels of emotional exhaustion were reported by non-physician providers in Malawi and nurses were more likely to express the desire to leave the job (McAuliffe, et al., 2009). In Nigeria, nurses' response to these stressors is yet to be examined. With multiple workforce and environment issues affecting nurses' job satisfaction in Africa, expanding nurses' roles amidst existing stressful work conditions raise concerns for job dissatisfaction and retention. These negatively affect quality of care and patient outcomes too (Hass et al. 2000; Kazanjian, Green, Wong, & Reid, 2005; Tzeng & Ketefian, 2002).

This study was guided by Bandura's (1982) Self-Efficacy Theory and Herzberg's (1959) Two-factor Job Satisfaction Theory. Self-Efficacy is an individual's perception of his/her ability to perform competently in a given task. In the literature, antecedents of self-efficacy include: a) mastery experiences in which success acts as a motivator for overcoming failures thereby

building resilience. b) social modeling or situations where one observes others in similar roles; c) social persuasion or expressions of belief in one's capabilities to perform a task; and d) perception of emotional and physical reactions where repeatedly overcoming stressful obstacles reinforce one's self-efficacy (Bandura, 1997). These concepts are commonly used in nursing education and practice through clinical demonstrations, preceptorship and mentoring.

Job satisfaction is the perception of fulfillment derived from one's job. It is defined as the "pleasurable or positive emotional state from the appraisal of one's job or job experiences" (Locke, 1976 p.1304). Identified antecedents of job satisfaction include: job situation, personal disposition and the interaction between them (Judge and Klinger, 2008). With regards to the two-factor theory, Herzberg (1959; 1966) explained that extrinsic and intrinsic factors influence job satisfaction and dissatisfaction. He argued that extrinsic factors, which are related to the context of work, are not strong contributors to job satisfaction. However, they remain critical because their absence to a high degree could result to job dissatisfaction. The intrinsic factors on the other hand, motivate workers and promote performance of the job because they are related to task performance. As a result, they are often associated with high levels of job satisfaction. Job satisfaction has been widely studied in nursing especially to evaluate effects of changes in practice. For instance a recent study from Senegal and Mali, revealed that factors which enhance professional achievement among health workers ranked high as job satisfier (Faye et al., 2013).

Methods

Study Design and Sampling

Using a qualitative design, a focus group was conducted (as a pilot study) to assess the content validity and utility of the study instruments in Nigeria. A purposive sample of ten (N=10) expert nurses with a minimum of one year experience in HIV task sharing participated in this

pilot. The nurses rated each item on the measurement scales using a four-point content validity index (CVI) quantification scale as recommended by Grant & Davis (1997). This process ensured the instruments were suitable for the cultural and practice setting in Nigeria.

The main study used a cross-sectional, correlation design. A convenience sample of 508 (N=508) nurses and midwives in HIV task sharing roles completed the self-administered, Likert format, survey and demographic checklist. An a priori sample calculation with an alpha of 0.05, anticipated effect size of 0.05, and a statistical power of 0.80 gave the minimum sample of 248 nurses was required for adequate power. To be included in the study, the participant must be male or female registered nurses and midwives; currently working or previously worked in HIV clinics; and performed HIV treatment tasks shifted from physicians. Nurses who did not meet this criteria and non-nurse providers were excluded. The participants were drawn from tertiary, secondary and primary health facilities in eight of 36 States in Nigeria (Borno, Delta, Enugu, the Federal Capital Territory, Kano, Nasarawa, Katsina, and Ogun).

Ethical Considerations and Data Collection

Ethical approvals were obtained from Rutgers University, Institutional Review Board (IRB) and the Nigerian National Health and Research Ethics Committee (NHREC). Participation was voluntary, no personal identifiers were collected as part of the data and responses were kept confidential.

Study Questions

Three study questions were examined.

Question 1: What are the relationships among nurse demographic characteristics and nurses' perceived self-efficacy for HIV task sharing and job satisfaction? Question 2: What are the relationships among setting characteristics and nurses' perceived self-efficacy for HIV task

sharing and job satisfaction? Question 3: What are the multivariate relationships of demographic, setting characteristics, and perceived self-efficacy on job satisfaction? In addition, group variations in relation to the dependent variables were also examined.

Measures

Four instruments were used:

- 1) Demographic Survey
- 2) Survey of Setting Characteristics
- 3) Perceived self-efficacy for HIV task-shift
- 4) Job Dissatisfaction

The nurse demographic variables and setting characteristics were captured using a 15-item demographic checklist adapted from Traynor & Wade (1993). These variables included age, gender, type of licensure, job title and duration of experience as a nurse; type and ownership as well as geographic coverage areas of health facilities (i. e. primary, secondary or tertiary).

The Self-Efficacy variables were measured with a 13-item, Likert format Self-Efficacy Scale for Task Shifting in HIV care (SEQTS-HIV) scale. This was adapted from the General Self-Efficacy (GSE) scale. The original scale was a 10-item, four point, one-dimension, internationally applied Likert scale which had a Cronbach's alpha range of .76 to .90 (Schwarzer & Jerusalem, 1995a & b). Self-efficacy for HIV task sharing was operationalized as scores on the SEQTS-HIV scale. To ensure all identified skill sets for HIV task sharing were assessed, three additional items were added. The items measured the nurse's perceived ability to perform specific task sharing skills sets based on the training components. Before its use, a content validity was measure in the pilot study and was found to be appropriate for Nigeria. The possible

minimum and maximum scores were 13 and 52. Higher scores represented higher levels of perceived self-efficacy.

Job Satisfaction variables were measured with a 42-item, five point, Likert scale adapted from Traynor & Wade (1993). The original Measure of Job Satisfaction (MJS) scale was a 43 item, seven-dimension, five point Likert scale developed to measure the job satisfaction levels of community health nurses in the United Kingdom. The seven sub-scales were: personal satisfaction; workload; professional support; training; pay; prospects; and standard of care. This scale performed reliably well in HIV settings in five African countries (Chirwa, et al., 2009) with a Cronbach's alpha coefficient of 0.95 (overall) and 0.84 to 0.89 for the sub-scales. The content validity assessment also revealed its appropriateness for use in Nigerian practice settings. One item related to satisfaction with hourly pay rate, was removed because hourly pay was not applicable in Nigeria. The possible minimum and maximum total scores were 43 and 215. Higher scores represented high levels of job satisfaction, while lower scores signified low job satisfaction.

The nurses were also given the opportunity to provide open-ended qualitative feedbacks at the end of the surveys describing the effects HIV task sharing had on their job satisfaction, the challenges they faced and strategies that helped them overcome their challenges.

Data Collection

Thirteen Nigerian expert nurses from tertiary, secondary and primary health facilities in north central Nigeria participated in the focus group to determine the appropriateness and content validity of the surveys. Using a four-point content validity index quantification scale recommended by Grant & Davis, (1997), the participants rated each item for representativeness,

clarity and relevance to the concepts. The data were entered into a Microsoft Excel spreadsheet and total ratings for each item were computed.

For the main study, 508 surveys were distributed to nurses in task sharing roles in eight (8) of the 36 states in Nigeria. To overcome security challenges due to Boko Haram militant attacks in northern Nigeria, election-related riots and hospital strikes, local nurses were trained to assist with data collection. This strategy led to successful data collection especially at facilities where nurses maintained skeletal services or short schedules to ensure ART refills. Collaboration with the Ministries of Health and Primary Care Development Agency made also enhanced access to HIV treatment facilities. Data entry and cleaning was completed as described by Polit and Beck (2014); identifying, reviewing and correcting any mis-keyed values and outliers.

Data Analysis

The ratings, comments and recommendations from the pilot study were reviewed and analyzed across individual participants to produce a summary item- and scale-content validity index (I-CVI and S-CVI). The inter-rater agreement for all three measurement scales were calculated. Based on recommendations by Grant & Davis (1997), items with I-CVI range of 70% or higher were considered acceptable. The summary CVI scores for representativeness, clarity and completeness for the Nurse and Facility Demographic checklist was 0.80 – 1.0; SEQTS-HIV 1.0; and MJS 0.80 – 1.0. The suggestions to qualify non-government owned facility as “faith-based hospital” since those were the only participating hospitals in that category was incorporated. The item related to hourly pay was also removed as recommended because that was not applicable to the practice setting in Nigeria. The summary scores indicated that the surveys were acceptable for use in Nigeria. The instruments were then finalized and deployed.

Descriptive statistics were used to examine the socio-demographic characteristics of study participants. Pearson's r and multiple regression analyses were computed using IBM SPSS version 21 (SPSS IBM, New York, U.S.A.) software to test the research questions, Confirmatory Factor Analyses (CFA) and reliability tests were conducted to examine the factor structures and reliability of the measurement scales. Pearson's product-moment correlations were used to examine the relationships between independent and dependent variables while multiple regressions were conducted to identify predictors of Self-Efficacy and Job Satisfaction. Independent T-tests and one-way analysis of variance (ANOVA) were used to explore differences between groups. The total Self-Efficacy score was found to be negatively skewed (Kolmogorov – Smirnov test = 0.687, $p < 0.05$). Therefore, to ensure assumptions of normality were met for parametric analyses, the negatively skewed total self-efficacy scores were transformed using the “Reflect and Log 10 transformation” techniques described by O'Toole (2012) & Rocky Mountain University of Health (2012).

Results

With a response rate of 78.5%, 399 (N=399) of 424 completed surveys met criteria for analyses. Fifty five (55) surveys completed by non-nurse providers were excluded from the analysis. The participants included 76% females and 24% males with mean age and years of nursing practice at 41.97 (SD 9.1) and 17 (SD 9.2) years respectively. Licensure categories consisted of 3% Registered Midwives, 27% Registered Nurses and 70% with dual licensure as Registered Nurse/Midwives. A larger proportions worked in Government-owned health centers (86%) and secondary hospitals (46%), while the lesser proportions worked in Primary Health centers (28%) and in Tertiary hospitals (26%). A majority of the nurses had previous HIV nursing experience (82%), received task sharing training (98%) and were mentored by

physicians, nurses or both (96%). The average training duration was 7 days (*SD* 5.1). Clinical practicum (67%) and onsite mentoring (94%) were the most frequently used methods for capacity development among participants. The highest mean job satisfaction scores by state of employment were among nurses in the Federal Capital Territory (172.3), while the lowest mean scores were found in Delta state (135.7).

Measurement Scale: Factor Analysis and Reliability

The principal component analysis indicated that the sample size was adequate. The SEQTS-HIV scale's Kaiser-Meyer-Olkin (KMO) measures were > 0.94 with statistically significant Bartlett's tests ($p < 0.001$). The minimum and maximum scores were 17 and 52 out of possible 13 and 52 with a median of 49 (IQR = 7). All item correlations for the SEQTS-HIV were above 0.3 while individual item communalities ranged from 0.44 to 0.61. The scree plot identified only one component (Eigenvalue > 6.745) which explained 52.2% of the total variance and interclass correlation coefficient (ICC) was 0.45 [.41-.49]. The Cronbach's alpha coefficient was of 0.91 (Table 1).

For the MJS scale, the minimum and maximum total scores were 77 and 215 out of possible 43 and 215 with a mean 156.3 (*SD* = 21.6). The KMO measures were 0.91 and Bartlett's tests were statistically significant ($p < 0.001$). Over 50% of the inter-item correlations were above 0.30 (average 0.322) with an ICC of 0.28 (.25-.31). The overall scale had an Eigenvalue of 20.99 and 61.75% explained variance. Three components (Pay, Workload and Quality of care) with Eigenvalues of 10.41; 2.65; 1.95; and a cumulative total explained variance of 44.2% were identified. The scree plot also identified three components before the slope dropped. Therefore, Pay, Workload and Quality of Care were chosen as the component structures (or subscales) for this sample. The reliability of the overall MJS scale and sub-scales respectively

were: overall - 0.94; Pay - 0.86; Workload – 0.82 and Quality of Care – 0.77 (Table 4). These results were comparable to the original scale and other studies in which the MJS was used (Traynor & Wade, 1993; Chirwa et al., 2009; and Chou, Bouldy & Lee, 2002).

Based on these results, both the SEQTS-HIV and MJS scales had acceptable construct validity. The internal reliability for both scales were within acceptable ranges since the recommended minimum Cronbach's alpha coefficient was 0.70 (Nunnally & Bernstein, 1998).

Insert Table 1 about here

Correlates of Self-Efficacy for HIV Task Sharing

A negative correlation was found between years in nursing practice ($r = -0.143$, $n = 396$, $p = 0.004$) and the log of total Self-Efficacy scores. A multiple regression analysis revealed that Gender ($\beta = 0.120$, $t(361) = 2.046$, $p = 0.041$) and years in nursing practice ($\beta = -0.010$, $t(361) = -2.695$, $p = 0.007$) were statistically significant predictors of self-efficacy (Table 2). Although years in nursing practice was a negative predictor for self-efficacy for HIV task sharing, both variables explained 4.4% variance [$F(6, 355) = 2.720$, $p = 0.014$], $R = 0.210$, $R^2 = 0.044$] for the log of Self-Efficacy scores. No statistically significant correlation was found between the log of self-efficacy for HIV task sharing and other nurse demographic variables. Controlling for all other setting variables, two setting variables: type of facility ($\beta = -0.101$, $t(286) = -2.242$, $p = 0.026$) and working in Delta State ($\beta = 0.158$, $t(286) = -2.202$, $p = 0.028$) were statistically significant but negative predictors of self-efficacy which explained 8.2% of the variance for self-efficacy [$F(14, 286) = 1.823$, $p = 0.003$], $R = 0.2287$, $R^2 = 0.082$].

Insert Table 2 about here

Correlates of Job Satisfaction

Statistically significant correlations were found between nurses' age ($r= 0.124, n=398, p= 0.014$); licensure ($r= 0.112, n=399, p= 0.025$), years in nursing practice ($r= 0.183, n=396, p= 0.000$) and job satisfaction. Female gender ($r= -0.107, n=399, p= 0.032$) was also negatively associated with job satisfaction (Table 3). Years in nursing practice ($\beta = 0.565, t(361) = 2.321, p= 0.021$) was the only statically significant nurse demographic predictor, which explained a small proportion (5.4%) of the variance for job satisfaction [$F(6, 355) = 3.347, p= 0.003$, $R=0.231, R^2= 0.054$].

Insert Table 3 about here

For setting characteristics, health facility ownership ($r= 0.103, n= 399, p= 0.039$); type of facility ($r= 0.233, n= 399, p= 0.000$); duration of training ($r= 0.293, n= 313, p= 0.000$) and mentoring ($r= 0.155, n= 386, p= 0.002$) were statistically significant correlates of job satisfaction (Table 4). Three setting variables and state of employment (except Delta state) were statistically significant predictors, explaining 34.6% of the total variance for job satisfaction [$F(14, 286) = 10.828, p= 0.000$], $R=0.589, R^2= 0.346$].

Insert Table 4 about here

To answer the third study question, a multivariate regression model fitted to identify the overall predictor variables for job satisfaction. As illustrated in Table 5, Type of facility ($\beta = 7.344, t(280) = 2.598, p= 0.010$), duration of training ($\beta = 0.625, t(280) = 2.579, p= 0.010$) and mentoring ($\beta = 22.883, t(280) = 2.416, p= 0.016$). Working in Delta state was also found to negatively influence job satisfaction while working in Federal Capital Territory, Kano and Katsina states were statistically significant (positive) predictors for job satisfaction. All together, these variables explained 36.5% of the total variance for job satisfaction [$F(20, 280) = 7.464, p= 0.000$], $R=0.604, R^2= 0.365$].

Insert Table 5 about here

Group Variations

Although the process of log transformation made these appear transposed, there were statistically significant differences in the log of total self-efficacy scores of nurses who received training ($M = 5.0, SD = 2.1$) when compared with those not trained for the role ($M = 10.9, SD = 2.1$), $t(396) = 3.07, p = 0.002$. Similarly, nurses mentored by both doctors and nurses scored 0.173 points higher than nurses mentored by doctors alone ($p = 0.001$) and 0.129 than those mentored by nurses alone ($p = 0.01$).

For job satisfaction, male nurses ($M = 160, SD = 22$) were significantly more satisfied than female nurses ($M = 155, SD = 21$); $t(397) = 2.2, p = 0.03$ while single licensed nurses ($M = 160, SD = 20$) were more satisfied than dual licensed Nurse/Midwives ($M = 154, SD = 22$); $t(397) = 2.4, p = 0.01$). Also, nurses from government-owned hospitals had higher job satisfaction scores in terms of Pay ($M = 3.1, SD = 0.9$) and overall job satisfaction ($M = 157, SD = 21$) than nurses working at faith-based hospitals ($M = 2.8, SD = 0.9$) and ($M = 150, SD = 25$); $t(397) = -2.1, p < 0.05$ respectively. Nurses working in Tertiary hospitals had higher overall job satisfaction scores ($M = 165, SD = 28$) when compared to nurses from Secondary ($M = 153, SD = 19$) and Primary Health facilities ($M = 153, SD = 15$); $F(2, 396) = 11, p = 0.00$. Similarly, satisfaction with pay and workload were found to be higher among nurses in tertiary hospital while those whose mentors were available at all times were more satisfied when compared to the other groups (Table 6).

Insert Table 6 about here

Qualitative Findings

Majority of the nurses who volunteered responses reported that task sharing had positive effects on their job satisfaction due to enhanced clinical roles and participation in patient care. Training and the advanced competency required for HIV task sharing helped to improve nurses' self-confidence, knowledge and clinical skills. Task sharing role appeared to improved nurses' professional image and recognition among their peers and team members. The nurses stated that their leadership and mentoring roles, gave them the opportunity to demonstrate that nurses could strengthen the health system as well as positively influence patient outcomes. They reported that team work was enhanced by task sharing and this made care provision less cumbersome. These positive attributes notwithstanding, participants cited excessive workload, feeling of overwhelming stress, fatigue and burn-out related to the demanding nature of the role, as major challenges. Some attributed these to inadequate staffing and lack of complementary psychosocial support for clients which leave nurses to manage more than nursing roles. Other identified challenges were: non-commensurate pay, longer work hours and double shifts for those still performing their original duties, excessive documentation, inadequate supplies and lack of support from employers.

Discussion

Longer duration of nursing experience had the greatest negative impact on self-efficacy. This was contrary to the theoretical prediction. It was not clear why past nursing experience did not provide nurses an added advantage in terms of perceived confidence for HIV task sharing. Further exploration is needed to better understand this relationship. Working in lower level facilities (secondary and primary health centers) and in Delta state were associated with low self-efficacy for HIV task sharing. To enhance support for these nurses, the relationship of these setting characteristics with self-efficacy for the role needs further examination.

In terms of job satisfaction, four intrinsic or motivating factors (dual licensure as registered nurse/midwife; years in nursing practice; duration of training and mentoring for task sharing role) were positively associated with job satisfaction. The qualitative responses also identified training, mentoring, knowledge and skills acquisition related to the role as major contributors to job satisfaction. As expected, these variables which are expected to strengthen nurses' personal and professional growth were strong motivators for the nurses in this study.

Using low job satisfaction as a proxy for job dissatisfaction, the extrinsic factors that significantly correlated with reduced likelihood for job dissatisfaction were related to company structure, policies and quality of supervision; physical working condition; and select nurse demographic characteristics. It was evident that, working in secondary and primary health centers, faith based (non-government owned) facilities and being a female nurse were associated with high disposition for job dissatisfaction. In Nigeria, there is substantial differences in salary, benefit packages, work expectations and responsibilities between Tertiary and other government owned health facilities. These differences also exist between government owned facilities and faith based hospitals. There is no doubt these disparities across facilities in Nigeria affect nurses' morale, retention and attrition. They may affect the sustainability of task sharing roles in HIV care and successful expansion to other chronic diseases in the future. The interactions between gender and professional roles or expectations may have contributed to the gender specific findings in this study.

Based on the qualitative responses, the most frequently reported challenges were excessive workload, documentation, feelings of overwhelming stress, fatigue, burnout, non-commensurate remuneration and inadequate supplies for work. Some of the nurses worked double shifts on clinic days without additional pay to accommodate their task sharing roles.

These could have detrimental impact if not addressed by facility administrators. In spite of these challenges, enhanced clinical role and participation in patient care positively influenced nurses' job satisfaction. Training, mentoring and advanced competencies required for HIV task sharing role were the strongest motivating factors. They improved the nurses' morale and boosted their self-confidence.

A. Implications for Nursing and Recommendations

Health Systems

To nurture nurses' motivation for task sharing roles, system level interventions are desperately needed especially as training and mentoring alone did not shield them from the negative implications of HIV care. While task sharing successfully reduced physicians' workload, nurses identified excessive workload and documentation, no remuneration for additional responsibilities, longer working hours, overwhelming stress and burnout as current challenges. It is obvious that task sharing in spite of existing nursing shortages in Nigeria is amplifying existing stressful work conditions for nurses. As a key strategy for achieving UNAIDS "90-90-90 agenda" and universal health access (UNAIDS, 2015 p.44; United Nations, 2015, & WHO, 2015), ignoring these red flags may have worse outcomes for nurses. Supportive strategies such as incentives to enable nurses and doctors from tertiary facilities to visit and nurture task sharing at lower level facilities and faith based hospitals is needed. Continuing education that cuts across all disciplines and facility levels could help to cross-fertilize knowledge and expertise and encourage collaborations among providers and facilities. The WHO (2015) already identified additional investments for the welfare of health workers remains as the weakest links in human resource for health planning in Africa. In Nigeria, this needs to be actively addressed. Mechanisms for complementary staffing mix, skills development, certification, recognition and equalized

remuneration across board should be considered. Continuous evaluation and monitoring to understand the long-term effects of task sharing on health workers are also needed.

Nursing Practice

These findings raise concerns for practice especially due to existing nursing shortage, high patient-to-nurse ratios and workload from HIV and other disease burden in Sub Sahara Africa. The disparity in job satisfaction across facility levels and types are clear signs that strategies to reduce the negative impact of task sharing on nurses at facilities with limited staffing and resources are needed. Policy makers, nursing and hospital administrators have important roles to play in identifying and implementing supportive mechanisms to enhance the job fulfillment among nurses in task sharing roles. The strategies at lower level facilities should include: mechanisms for continuing education, skills update, supportive administrative environment, re-evaluation of remuneration policies and the recognition of advanced HIV nursing skills and expertise for promotion. Inter-professional training and practice will also reduce inter-disciplinary strife and improve team work.

Nursing Education

The Nursing and Midwifery Council of Nigerian (NMCN) has taken steps to revise and standardize HIV disease and management contents of the national pre licensure curriculum. Current and future nursing education should prepare students with skills necessary for the job market. Task sharing in HIV care by nurses is a national practice in Nigeria, therefore graduating students should have the requisite knowledge and skills to properly assess and respond to the needs of patients infected with HIV especially pregnant women to minimize transmission to the unborn child. A newly graduated midwife could be the lone clinician in a rural primary health center, expected to initiate and maintain antiretroviral treatment for prevention of maternal HIV

transmission. The NMCN and nursing education stakeholders could consider instituting advanced practice nursing program or certificate HIV nurse specialty. Under such programs, task sharing role can be properly couched so that graduates will serve a wider array of advanced clinical roles. The process for instituting a new cadre of health professionals is usually an arduous process in rigid bureaucratic systems like Nigeria. To implement such programs, nursing educators require clinical updates in pathophysiology, advanced physical assessment, pharmacology, laboratory and other diagnostic testing for HIV and co-morbid conditions. To reduce strain on nursing faculty and minimize inter-professional dissention in practice, nursing programs could collaborate with faculty and clinicians from other disciplines where such courses are already taught. Co-facilitation and interprofessional clinical rotations at facilities providing task sharing services can enhance pre-licensure acculturation. School and national licensure examinations should test knowledge and clinical proficiency in these advanced skills prior to students' graduation. Regular clinical updates should be built in for nurse educators.

Study Limitations

Without a formal lecture-style training, some health workers in Nigeria do not regard onsite, hands-on practical experience and case reviews as "being trained". Despite acceptable content validity ratings of the survey items, 21.5% of the respondents who benefitted from onsite hands-on practicum and case studies only, checked off "no training". They also left "training duration" blank. While entries were corrected for the training status, the duration could not be corrected as this required actual number imputation by respondents. Though this was a systemic error, the variable was a crucial indicator that could not be dropped. This missing data was addressed during analyses by using listwise deletion which included only subjects who had no missing information for the analyses, bearing in mind the effect this on sample size.

It was anticipated that the study would have limited access to nurses who left HIV task sharing roles and those working regions with security challenges. The use of locally trained nurses for subject recruitment and data collection helped to overcome this.

Conclusions

Findings from this study highlight disparities in job satisfaction across facility levels and facility ownership in Nigeria. A number of the proposed theoretical relationships for job satisfaction were supported by the findings. However, the disparities across levels and ownership of health facilities had the greatest negative impact on job satisfaction. While this could be related to types of administration, supervision staffing mix and strength, the nurses reported excessive workload, documentation, overwhelming stress, fatigue and burnout, non-commensurate pay as the major challenges associated with HIV task sharing roles. Even though training and mentoring were not statistically significant correlates of self-efficacy in this study, they were strong predictors of job satisfaction.

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Tables

Table 1
Descriptive Statistics and Reliability Estimates for SEQTS-HIV & MJS (n=399)

Scales	Items	Mean (SD)	Cronbach's Alpha
Self-Efficacy	13	49.0 (7)*	0.91
Job Satisfaction	42	156.3 (21.6)	0.94
Sub-Scale 1: Pay	6	18.3 (5.3)	0.86
Sub-Scale 2: Workload	5	16.5 (3.9)	0.82
Sub-Scale 3: Quality of Care	4	16.3 (2.1)	0.77

*Median due to skewed range

Table 2

Nurse Demographic Predictors of Self-Efficacy for Task Sharing

Independent Variables	Dependent Variable: Task Sharing Self-Efficacy							
	t	p	β	F	df	p	R ²	Adjusted R ²
Nurse Demographic Characteristics				2.720	6	0.014*	0.044	0.028
Gender	2.046	.041*	0.120					
Age	1.892	.059	0.007					
Licensure (RN/RM only)	1.691	.092	0.096					
Years in Nursing Practice	-2.695	.007**	-0.010					
Previous HIV Experience	-	.162	-0.073					
Duration HIV Experience	1.401 .369	.712	0.002					
Total Variance Explained							0.044 (4.4%)	

Note: * $p < 0.05$; ** $p < 0.01$.

Table 3
Correlations among Nurse Demographics and Job Satisfaction

Variables		1	2	3	4	5	6	7
1. Age (Years)	Pearson Correlation	1	-0.043	-0.108	0.865**	0.105*	0.330**	0.124*
	Sig. (2-tailed)		0.395	0.031	0.000	0.036	0.000	0.014
	N		398	398	395	397	363	398
2. Gender	Pearson Correlation	1	-0.712**	-0.08	-0.055	-.119*	-0.107*	
	Sig. (2-tailed)		0.000	0.113	0.275	0.023	0.032	
	N		399	396	398	364	399	
3. Licensure (RN/RM)	Pearson Correlation			1	-0.084	0.059	0.049	0.112*
	Sig. (2-tailed)				0.093	0.238	0.355	0.025
	N				396	398	364	399
4. Years in Nursing Practice	Pearson Correlation				1	0.063	.341**	0.188**
	Sig. (2-tailed)					0.214	0.000	0.000
	N					395	363	396
5. Previous HIV Experience	Pearson Correlation					1	.544**	-0.049
	Sig. (2-tailed)						0.000	0.325
	N						364	398
6. Duration HIV Experience (Years)	Pearson Correlation						1	0.074
	Sig. (2-tailed)							0.161
	N							364
7. Total Job Satisfaction Score	Pearson Correlation							1

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 4
Correlations among Setting Characteristics and Job Satisfaction

Variables		1	2	3	4	5	6	7	8
1. Facility Ownership	Pearson Correlation	1	.106*	0.02	0.005	0.083	0.064	0.055	0.103*
	Sig. (2-tailed)		0.034	0.693	0.933	0.104	0.202	0.274	0.039
	N		399	399	313	386	399	399	399
2. Type of Facility	Pearson Correlation		1	.088	.170**	.017	-.138**	0.048	.233**
	Sig. (2-tailed)			0.08	0.003	0.735	0.006	0.343	0.000
	N			399	313	386	399	399	399
3. Received Training	Pearson Correlation			1	0.084	0.01	0.042	0.031	0.044
	Sig. (2-tailed)				0.136	0.839	0.402	0.537	0.377
	N				313	386	399	399	399
4. Duration of Training	Pearson Correlation				1	0.023	.192**	.194**	.293**
	Sig. (2-tailed)					0.696	0.001	0.001	0.000
	N					301	313	313	313
5. Received Mentoring	Pearson Correlation					1	.168**	.376**	.155**
	Sig. (2-tailed)						0.001	0.000	0.002
	N						386	386	386
6. Type of Training	Pearson Correlation						1	.257**	-0.027
	Sig. (2-tailed)							0	0.588
	N							399	399
7. Onsite Mentoring	Pearson Correlation							1	0.074
	Sig. (2-tailed)								0.14
	N								399
8. Total Job Satisfaction Score	Pearson Correlation								1

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 5
Overall Predictors of Job Satisfaction

Independent Variables	Dependent Variable: Job Satisfaction							
	t	P	β	F	df	p	R ²	Adjusted R ²
Nurse Demographic Characteristics			7.464	20♦		0.000**	0.365	0.316
Gender	.873	.384	3.528					
Age	.822	.412	.203					
Licensure (RN/RM only)	.410	.682	1.617					
Years in Nursing Practice	.520	.603	.128					
Duration HIV Experience	-1.109	.269	-0.443					
Facility/Setting Characteristics								
Facility Ownership	-0.422	.673	-1.461					
Type of Facility	2.598	.010**	7.344					
Received Training	-0.127	.899	-0.026					
Duration of Training (days)	2.579	.010**	.625					
Type of Training (Practicum)	-0.332	.740	-0.855					
Received Mentoring	2.416	.016**	22.883					
Onsite Mentoring	0.948	.344	6.465					
Self-Efficacy for Task Sharing	-1.414	.158	-5.425					
Total Variance Explained							0.365 (36.5%)	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ♦ Value includes State of Employment

Table 6
Differences in Demographic Means

<i>Self-Efficacy</i>	Groups	N	M	SD	t/F	df	p
Training	No	9	10.9†	2.1†	3.07	396	.002**
	Yes	389	5.0	2.1			
Cadre of Mentor	Doctor	167	5.5	2.1	7.03	2	.001**
	Nurse	150	5.0	2.2			
	Doctor & Nurse	69	3.7	2.0			
<i>Job Satisfaction</i>	Groups	N	M	SD	t/F	df	p
Gender	Male	94	160	22	2.2	397	.03*
	Female	305	155	21			
Licensure	RN/RM	279	154	22	2.4	397	.01*
	RN or RM only	120	160	20			
Facility Ownership	Non-Govt.	56	150	25	-2.1	397	.04*
	Govt. Owned	343	157	21			
Type of Facility	Primary	112	153	15	11	2	.00**
	Secondary	184	153	19			
	Tertiary	103	165	28			
Mentor Available	No	18	151	30	9.2	2	.08
	Sometimes	254	153.	19			
	All the Time	126	163	24			

*The mean difference is significant at 0.05. **The mean difference is significant at 0.01;

† Back transformed values