Assessment of the constraints to effective delivery of HIV prevention, treatment and care services in a resource-limited setting

Kenneth Anene Agu, Uche M. Ochei
Department of Clinical Pharmacy and Pharmacy Practice, University of Benin, Nigeria

Corresponding Author: Kenneth Anene Agu
Email: agkenneth@gmail.com; Phone: +2348033031467

ABSTRACT

Background: Scaling up HIV prevention, treatment and care services may face a number of constraints. Project constraint is a barrier to full potential.

Objectives: This study assessed the constraints to effective delivery of HIV prevention, treatment and care services and made recommendations for improvement in resource-limited settings.

Methods: In a cross sectional study, study-specific questionnaires were self-administered to 90 out of 104 health workers providing HIV services and 150 out of 200 HIV-positive patients in seven public health facilities in Edo State, Nigeria. Participants were selected using simple random sampling. Chi square was used for inferential statistics; and *P* values were two-tailed at 95% confidence interval.

Results: Of the health workers, 59.2% were males, 39.4% aged 31–40 years old, 22.5% doctors, 14.1% pharmacists, 15.5% laboratory scientists, 33.8% nurses, 7.0% record officers, and 7.0% administrators. Of the clients, 55.2% were females, 39.7% aged 31–40 years old; majority (40.5%) had accessed services in the facilities for 1–3 years and 29.3% accessed for 3–6 months prior to this study. Major constraints reported by health workers included inadequate health workforce (24.5%), lack of government ownership (14.9%), lack of incentives/staff motivation(13.8%), and poor working conditions(12.8%); whereas clients reported inadequate health workforce(41.4%), long waiting time (21.4%), stock-out or inadequate supply of drugs, reagents and materials (7.1%). Stigmatization by health workers was reported by 17.6% of clients. Major recommendations by health workers for improvement included recruitment of additional health workforce (36.4%), improved working conditions (15.2%), good staff motivation/incentives (15.2%); whereas clients recommended recruitment of additional health workforce (54.3%), reduced waiting time (13.0%) and improved working conditions (7.6%). However, there was no association between effective delivery of HIV interventions and staff motivation (*P*=0.0571).

Conclusions: The major constraints reported were inadequate health workforce, lack of government ownership and poor working conditions. Recruitment of additional health workforce and improved working conditions were the major recommendations for improved delivery of quality of HIV interventions.

Keywords: HIV/AIDS, Constraints, Services, Delivery, Health workers, Clients, Nigeria

Évaluation des obstacles à la prestation efficace de services de prévention, de traitement et de soins du VIH dans un contexte de ressources limitées

Auteur correspondant: Kenneth Anene Agu
Email: agkenneth@gmail.com; Phone: +2348033031467

RÉSUMÉ

Contexte: Améliorer l'accès aux services de prévention, de traitement et de soins du VIH peut faire face à un certain nombre de contraintes. Contrainte du projet est un obstacle à plein potentiel.

Objectifs: Cette étude a évalué les obstacles à la prestation efficace de services de prévention, de traitement et de soins du VIH et a formulé des recommandations pour l'amélioration en situation de ressources limitées.

Méthodes: Dans une étude transversale, des questionnaires spécifiques de l'étude étaient auto-administré à 90 sur 104 travailleurs de la santé qui fournissent des services liés au VIH et 150 sur 200 patients VIH-positifs dans sept établissements de santé publique dans l'État d'Edo, au Nigeria. Les participants ont été sélectionnés par échantillonnage aléatoire simple. Chi carré a été utilisé pour inférence statistique; et les valeurs P sont bilatéral à intervalle de confiance de 95%.

Résultats: Parmi les travailleurs de la santé, 59,2% étaient des hommes, 39,4% âgés de 31-40 ans, 22,5% des médecins, 14,1% des pharmaciens, 15,5% des scientifiques de laboratoire, 33,8% des infirmières, 7,0% d'enregistrement des agents, et 7,0% des administrateurs. Parmi les clients, 55,2% étaient des femmes, 39,7% âgé 31-40 ans; majorité (40,5%) avaient accès à des services dans les installations pour les 1-3 ans et 29,3% accessibles pendant 3-6 mois avant cette étude. Les principales contraintes signalées par les agents de santé inclus effectif insuffisant de la santé (24,5%), le manque de participation des pouvoirs publics (14,9%), le manque d'incitations / motivation du personnel (13,8%), et mauvaises conditions de travail (12,8%); alors que les clients ont signalé effectif insuffisant de la santé (41,4%), le temps d'attente est longue (21,4%), rupture de stock ou approvisionnement insuffisant en médicaments, réactifs et matériels (7,1%). La stigmatisation par les travailleurs de la santé a été rapporté par 17,6% des clients. Les principales recommandations des agents de santé pour l'amélioration inclus le recrutement de personnel de santé supplémentaire (36,4%), l'amélioration des conditions de travail (15,2%), une bonne motivation du personnel / incitations (15,2%); alors que les clients ont recommandé le recrutement de personnel de santé supplémentaire (54,3%), la réduction du temps (13,0%) en attente et l'amélioration des conditions de travail (7,6%). Cependant, il n'y avait pas d'association entre la prestation efficace des interventions contre le VIH et la motivation du personnel (P = 0,0571).

Conclusions: Les principales contraintes signalées étaient des personnels de santé inadéquats, le manque de participation des pouvoirs publics et des conditions de travail médiocres. Le recrutement de personnels de santé supplémentaires et les conditions de travail améliorées ont été les principales recommandations pour améliorer la prestation de qualité des interventions contre le VIH.

Mots-clés: VIH / SIDA, les contraintes, services, la livraison, les travailleurs de la santé, clients, Nigeria

INTRODUCTION

HIV/AIDS is a serious global threat particularly for people living in developing countries, and especially for women and adolescents. Although global commitment to control the HIV/AIDS pandemic has increased significantly in recent years, the virus continues to spread with increasing speed. Globally, an estimated 35.3 million people were living with HIV in 2012[1] compared to 33.2 million people estimated at the end of 2007, and 95% of whom were in developing countries.[2,3] Sub-Saharan Africa remains the region most affected by HIV/AIDS. The people living with HIV in resource limited settings should have access to essential interventions to prevent illness and HIV transmission. It is noteworthy that progress has been recorded over a short period of time in supporting antiretroviral therapy (ART) for more than two million persons in low- and middle-income countries.[4] However, estimates based on surveys conducted in sub Saharan Africa indicate that only 12% to 25% of people living with HIV know their status.[4] Consequently, many people with HIV are not receiving even basic HIV-related services; and approximately 72% of those who require ART were not receiving it at the end of 2006.[3,4] The coverage of all interventions for HIV prevention has remained low and although the impact of prevention is beginning to be seen in more countries as the number of new infections is declining but remains unacceptably high. There were 2.3 (1.9–2.7) million new HIV infections globally, showing a 33% decline in the number of new infections from 3.4 (3.1–3.7) million in 2001.[1] The number of AIDS deaths is also declining with 1.6 (1.4–1.9) million AIDS deaths in 2012, down from 2.3 (2.1–2.6) million in 2005.[1]

Nigeria has the second highest burden of HIV globally with 3.4million people living with HIV (PLHIV) as at 2012. The prevalence of HIV in Nigeria as at 2010 was 4.1% and there were 270,000 new HIV infections in that year.[5] This represents a decline in HIV prevalence from 6% in 2001. The prevalence varies across states ranging from 1% to 12.7%. Analysis of the 2010 national HIV prevalence report shows that 58% of the PLHIV population constitutes women. According to the 2012 UNAIDS World AIDS Day report, 25% of the global burden of mother-to-child transmission (MTCT) of HIV and 10% of paediatric AIDS is attributable to Nigeria.[5]

Scaling up HIV prevention, treatment and care services may face a number of constraints. A project constraint is a bottleneck, delay or a barrier to full potential; and the more the barriers to performance can be reduced, the closer to realizing full potential. Finding these constraints requires looking for the things that are holding services back to full potential. Most analyses have focused on the financial resources required and lack of coverage but these are not the only constraints to effective delivery of HIV services.[6] There may be constraints of other types where adequate coverage and financial resources for HIV interventions are available. Constraints should therefore be defined more broadly than inputs alone; they also include systems, processes, incentives and values or norms.[6] HIV/AIDS has added a specific burden on the health services and the service providers; and these includes ever-increasing workloads, prolonged working hours coupled with demotivating working environments; and a host of other factors undermining service capacity.[7] The identified challenges to implementation of HIV prevention from providers' perspective in Zambia were multi-level issues. These included issues related to training, consultants, decision making, administration, and evaluation as well as practical considerations surrounding travel, training, staff compensation and ongoing quality assurance, restricted resources for personnel and funding.[8] The barriers faced by Community-based organizations (CBOs) in the effective delivery of HIV prevention services to the populations they serve included legal and policy issues, economic issues such as poverty, stigma, lack of resources, high staff turnover and "burnout, HIV not perceived as a priority and HIV/AIDS fatigue.[9]

Hanson et al (2003) reported a range of constraints to expanding access to health services and included absolute lack of resources and that access to health interventions is hindered by problems of demand, weak service delivery systems, policies at the health and cross-sectoral levels, and constraints related to governance, corruption and geography.[6] The constraints to effective delivery of HIV interventions in Nigeria are not well documented to our knowledge. The study assessed the constraints to effective delivery of HIV prevention, treatment and care services and made recommendations for improvement in a resource-limited setting.

METHODS

Study design

This involved a cross-sectional study design to investigate the specific constraints to delivering HIV interventions in a resource-limited setting.

Setting

The setting for this study comprised of seven (7) public secondary health facilities in Edo State, Nigeria. The health facilities were supported to provide free HIV comprehensive services with funding from President Emergency Plan for AIDS Relief (PEPFAR) through United States Agency for International Development (USAID).

Study population

The study population included one hundred and four (104) health workers (including 23 doctors, 15 pharmacists, 16 laboratory scientists, 36 nurses, 7 record officers, and 7 administrators) providing care to patients; and two hundred (200) HIV-positive patients who have accessed HIV-related services for at least three (3) months in the study sites.

Sample and sampling methods

The samples comprised of 90 (including 19 doctors, 13 pharmacists, 14 laboratory scientists, 30 nurses, 7 record officers, and 7 administrators) out of the 104 health workers and 150 out of 200 patients who have accessed HIV services for at least three (3) months in the study sites. The samples were selected from the study population using simple random sampling technique. The study sites were selected using purposive sampling technique. The sample size was determined based on the 'rule of the thumb' proposed by Nunnally, who suggested that the number of subjects should be at least 10 times the number of items/subjects.[10] However, the sample size was greater than 50% of the health workers and the eligible patients in the study sites due to the small population to accommodate for possible losses due to incompleteness or not returning of completed questionnaires. .

Data collection

Two different study-specific questionnaires were self-administered to the health workers and patients. The researchers distributed the questionnaires to the participants and appealed to them to fill and return within three days of receiving them. In addition, observation checklist and face-to-face interview guide were also used in this study. The study instruments were pre-tested before use. The sites and participants for the pre-testing were excluded from the main study to avoid bias. The reliability of data collection instruments were tested using test-re-test reliability technique. The tools were seen, objectively discussed and modified by experts for content validity. The management approval was obtained from the study sites. Informed consent was obtained from the study participants before the start of the study and they were assured of the confidentiality of the information provided.

Data analysis

Data analysis was done using Predictive Analytical SoftWare (PASW) statistics-18 software. The responses were analyzed using descriptive statistics on the sample characteristics and question items including frequency distributions. Likert 5-point rating scale was used and negatively worded items were reverse coded so that higher scores represent better services/performance or higher satisfaction. Mean item scores were calculated for the individual items. The mean scale scores were also computed by summing the scores for the individual items constituting the scale and dividing by the number of items. A midpoint of the five-point scale was determined by adding all the scores and computing the average. The mean scale scores above the midpoint were regarded as positive perception and satisfaction, while below the mid-point were considered as negative perception and satisfaction. Standard deviation was also determined. Chi square was used for inferential statistics; and *P* values were two-tailed at 95% confidence interval.

RESULTS

Socio-demographic characteristics

Of the 150 questionnaire distributed to clients/patients, 119 (79.3%) were retrieved; however, 3 (2.5%) of them were incomplete and were discarded, leaving 116 (97.5%) completed questionnaires valid for the analysis. Of the 90 questionnaires distributed to heath workers in the study sites, 75 (83.3%) were retrieved; however, 4 (5.3%) of them were discarded for missing key variables of interest, leaving 71 (94.7%) completed questionnaires valid for the analysis. The high response rates may be attributed to the repeated follow up visits to the health facilities by the researchers.

Of the clients, 32 (27.6%) were employees, 60 (51.7%) were self-employed, 14 (12.1%) unemployed, 5 (4.3%) retired, and 5 (4.3%) students. Of the health workers, there were 16 (22.5%) medical doctors, 10 (14.1%) pharmacists, 11 (15.5%) laboratory scientists, 24

(33.8%) nurses, 5 (7.0%) medical record officers, and 5 (7.0%) health administrators. Of the health workers, 59.2% were males, 39.4% aged 31 – 40 years old, 63.4% were married and 97.2% had post secondary level of education. Of the clients who participated in the study, 55.2% were females, 39.7% aged 31 – 40 years old, 65.5% were married and 79.3% had secondary level education at the most. Table 1 shows other socio-demographic characteristics of the study participants.

Table 1: Frequency distribution of the socio-demographic characteristics of the study participants

Characteristics	Frequency (%)	
Sex	**HCWs, N = 71**	**Clients, N = 116**
Male	42 (59.2)	52 (44.8)
Female	29 (40.8)	64 (55.2)
Age group (years)		
21- 30	19 (26.8)	33 (28.4)
31- 40	28 (39.4)	46 (39.7)
41- 50	19 (26.8)	23 (19.8)
51- 60	5 (7.0)	9 (7.8)
61 – 70	0 (0.0)	5 (4.3)
Marital status		
Single	25 (35.2)	23 (19.8)
Married	45 (63.4)	76 (65.5)
Separated	1 (1.4)	5 (4.3)
Widow(er)	0 (0.0)	2 (1.7)
Divorced	0 (0.0)	10 (8.6)
Educational status		
None	0 (0.0)	10 (8.6)
Primary	0 (0.0)	49 (42.2)
Secondary	2 (2.8)	33 (28.5)
Diploma or its equivalent	25 (35.2)	8 (6.9)
Degree or its equivalent	22 (31.0)	11 (9.5)
Post graduate	22 (31.0)	5 (4.3)

HCWs, health care workers

Constraints to delivery of quality HIV interventions

The respondents' duration of using the health facilities before the study were 3 - 6 months for 34 (29.3%) clients, 7 - 9 months for 23 (19.8%) clients, 10 - 11 months for 6 (5.2%) clients, 1 - 3 years for 47 (40.5%) clients, > 4 years for 4 (3.4%) clients, whereas 2 (1.7%) clients did not indicate the duration. The availability of free healthcare services were the clients' major reason (34.8%) for the choice of the health facility (Figure 1).

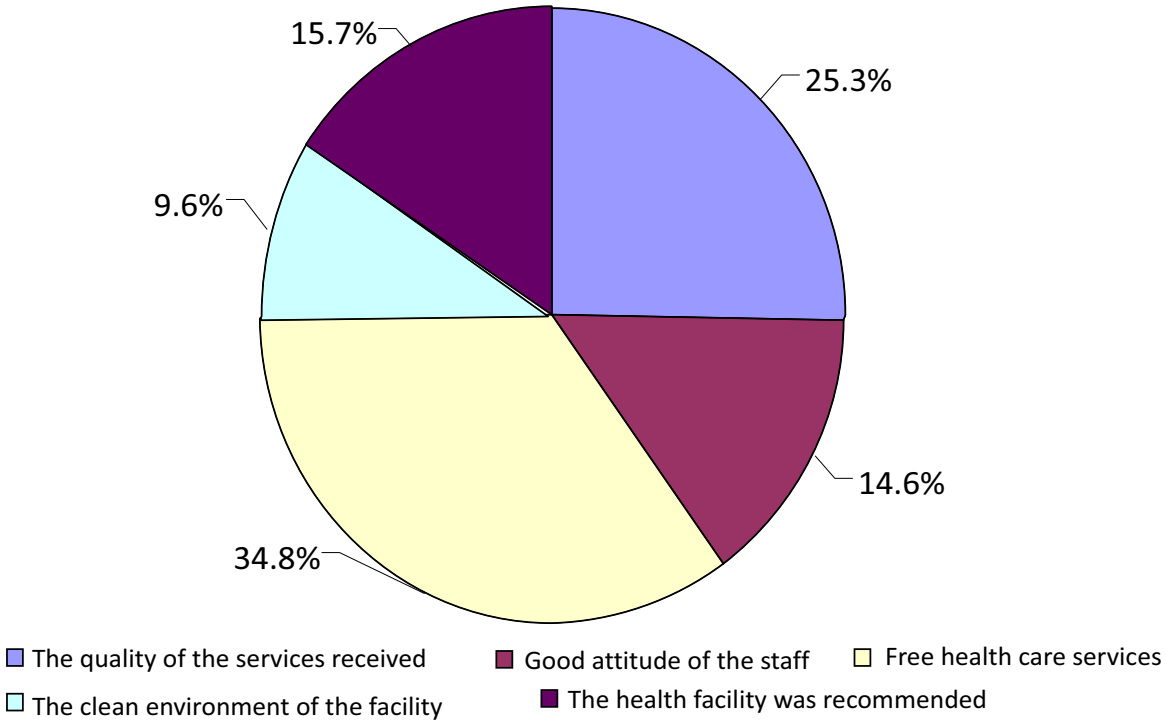

Figure 1: Factors that influenced the respondents' choice of the health facilities, N = 116

The major complaints about the delivery of HIV services in the health facilities reported by health workers were long waiting time by patients (41.1%), health manpower shortage (19.2%) and lack of financial support or incentives (16.4%); whereas the major complaints from clients' perspective included long waiting time (52.7%), stigmatization by health workers (17.6%) and health manpower shortage (10.8%) - Table 2.

Table 2: Frequency distribution of the complaints about the delivery of HIV services in the health facilities

		Frequency (%)	
S/N	**Responses (complaints)**	**HCWs, N = 73**	**Clients, N = 74**
1	Health manpower shortage	14 (19.2)	8 (10.8)
2	Poor infrastructural facilities e.g. environment, space, electricity, water, toilet facilities etc.	4 (5.5)	1 (1.4)
3	Long waiting time before being attended to	30 (41.1)	39 (52.7)
4	Lack of financial support or incentives	12 (16.4)	1 (1.4)
5	Lack of audio-visual privacy	2 (2.7)	1 (1.4)
6	Stigmatization of HIV-infected clients by HCWs	5 (6.9)	13 (17.6)
7	Unfriendly staff's attitudes to clients	4 (5.5)	3 (4.1)
8	Inadequate or stock-out of drugs and other HIV/AIDS commodities	1 (1.4)	2 (2.7)
9	Lateness of staff to work	0 (0.0)	4 (5.4)
10	Lack of Government support and ownership of the HIV program	0 (0.0)	2 (2.7)
11	Don't know	1 (1.4)	0 (0.0)

*HCWs, health care workers. *Some respondents had ≥ 1 responses.*

The most common problems and challenges to the implementation and management of HIV interventions in the health facilities reported by health workers included inadequate health manpower (24.5%), lack of

government ownership and commitment (14.9%), lack of incentives or staff motivation (13.8%), and poor infrastructural facilities (12.8%); whereas the clients reported inadequate health manpower (41.4%), long waiting time (21.4%), stock-out or inadequate supply of drugs, reagents and materials (7.1%), and lack of HIV public awareness campaigns (7.1%) –Table 3.

Table 3: The most common problems and challenges to the implementation and management of HIV prevention, treatment and care services in the health facilities

S/N	Responses	Frequency HCWs, N = 94	Percentage Clients, N = 70
1	Poor infrastructural facilities or poor working conditions e.g. environment, electricity, water, toilet facilities, lack of privacy etc.	12 (12.8)	1 (1.4)
2	Lack of government ownership and commitment	14 (14.9)	2 (2.9)
3	Inadequate staff training and/or retraining	5 (5.3)	2 (2.9)
4	Little or no community participation	1 (1.1)	1 (1.4)
5	Clients' lack of patience and understanding of staff constraints	1 (1.1)	0 (0.0)
6	Lack of incentives / staff motivation	13 (13.8)	0 (0.0)
7	Clients non-adherence to appointments and medications	3 (3.2)	0 (0.0)
8	Inadequate health manpower	23 (24.5)	29 (41.4)
9	Lack of team work among health workers	3 (3.2)	0 (0.0)
10	Nepotism when sending staff for in-service trainings or posting of staffs	4 (4.3)	0 (0.0)
11	Lack of public awareness campaigns	4 (4.3)	5 (7.1)
12	Stock-out or inadequate supply of drugs, reagents and materials etc.	3 (3.2)	5 (7.1)
13	Frequent change of documentation forms and registers	1 (1.1)	0 (0.0)
14	Complex and repetitive documentation and reporting requirements of project activities	2 (2.1)	0 (0.0)
15	High workload	4 (4.3)	3 (4.3)
16	Inadequate project funding	1 (1.1)	3 (4.3)
17	Long waiting time before being attended to	0 (0.0)	15 (21.4)
18	Few available HIV treatment centers	0 (0.0)	2 (2.9)
19	Poor waiting area	0 (0.0)	1 (1.4)
20	Bad attitude of some health workers	0 (0.0)	1 (1.4)

HCWs, health care workers

The major recommendations by health workers for improved quality of HIV services provided at the health facilities were recruitment of additional health workforce (36.4%), better infrastructural facilities or improved working conditions (15.2%), good staff motivation/incentives (15.2%); whereas clients recommended recruitment of additional health workforce (54.3%), reduced waiting time (13.0%) and better infrastructural facilities or improved working conditions (7.6%) – Table 4.

Table 4: Frequency distribution of the recommendations by respondents for improved quality of HIV services provided at the health facilities

S/N	Responses (recommendations)	Frequency (%) HCWS, N = 99	Clients, N = 92
1	Recruitment of additional health workforce	36 (36.4)	50 (54.3)
2	Better infrastructural facilities e.g. environment, waiting area, electricity, water, and toilet facilities. i.e. improved working conditions	15 (15.2)	7 (7.6)
3	Government to be more involved and proactive to issues	5 (5.1)	4 (4.3)
4	Good staff motivation/incentives	15 (15.2)	5 (5.4)
5	Provide good storage facilities	1 (1.0)	0 (0.0)
6	Provide audio-visual privacy for health workers-clients interactions	0 (0.0)	5 (5.4)
7	Staff training / retraining	13 (13.1)	4 (4.3)
8	Financial and rehabilitative assistance for People Living With HIV/AIDS (PLWHAs) e.g. transportation fares.	2 (2.0)	3 (3.3)
9	Adequate and uninterrupted supply of materials/equipment/reagents/drugs	3 (3.0)	2 (2.2)
10	Health workers' reorientation and project ownership	3 (3.0)	0 (0.0)
11	Reduced waiting time	0 (0.0)	12 (13.0)
12	Prompt repair /maintenance of laboratory equipment	6 (6.1)	0 (0.0)

*HCWs, health care workers. *Some respondents had ≥ 1 responses.*

Perception and satisfaction with HIV services

The perception and satisfaction of health workers about the satisfaction of clients with services they provide, and the interpersonal relationship among health workers or between the health workers and the clients were positive; compared to their reported negative perception and satisfaction about equipment and materials available for their work and the conditions of service in the health facilities (Table 5).

Table 5: Frequency distribution of the health workers' perception and satisfaction about the conditions of service in the health facilities; N = 71

Question items	*Mean (±SD)	Frequency (%)				
		Greatly exceeded	Exceeded	Adequately met	Met some-what	Did not meet at all
To what extent do the equipment and materials available for work meet your expectation?	2.9 (±1.1)	6 (8.5)	7 (9.9)	40 (56.3)	7 (9.9)	11 (15.5)
Question items		**Very happy**	**Just happy**	**Not sure**	**Unhappy**	**Very unhappy**
Are you happy with the interpersonal relationship between health workers in the facility?	4.2 (±0.9)	30 (42.3)	30 (42.3)	7 (9.9)	3 (4.2)	1 (1.4)
Are you happy with the interpersonal relationship between the health workers and the clients?	4.2 (±0.9)	33 (46.5)	29 (40.8)	4 (5.6)	3 (4.2)	2 (2.8)
Are you happy with the conditions of service in the health facility?	3.5 (±1.2)	17 (23.9)	26 (36.6)	7 (9.9)	19 (26.8)	2 (2.8)
Question items		**Very often**	**Often**	**Not sure**	**Not often**	**Never**
Do clients express satisfaction with the services of your facility?	4.0 (±0.9)	23 (32.4)	33 (46.5)	8 (11.3)	7 (9.9)	0 (0.0)

*Mean value <3.8 denotes negative perception and satisfaction while ≥3.8 denotes positive perception and satisfaction

The perception and satisfaction of clients about the attitude of the health workers towards them and towards the performance of their jobs was negative; and the clients were not satisfied with the waiting time and the services they received from the health facilities (Table 6). The clients were convinced that the people who provided services to them were trained professionals and had never had cause to return to the health facility because they were given wrong medications, lost or misplaced case notes/folder or test results. The satisfaction of clients with the interpersonal relationship among health workers and the responses they received when they seek information or advice about your health condition was positive (Table 6).

Table 6: Frequency distribution of the clients' perception and satisfaction about the health facilities; N = 116

Question items	*Mean (±SD)	Frequency (%)				
		Very Satisfactory	Satisfactory	Not Sure	Not Satisfactory	Very Unsatisfactory
How will you rate the attitude of the health workers towards you?	4.3 (±0.7)	45 (38.8)	68 (58.6)	0 (0.0)	1 (0.9)	2 (1.7)
How will you rate the attitude of health workers towards the performance of their jobs?	4.3 (±0.9)	47 (40.5)	61 (52.6)	2 (1.7)	2 (1.7)	4 (3.4)
When you seek information or advice about your health condition, are you satisfied with the responses you received?	4.5 (±0.6)	62 (53.4)	51 (44.0)	2 (1.7)	1 (0.9)	0 (0.0)
Will you say, you are satisfied with the services you received from the hospital?	4.3 (±0.7)	41 (35.3)	71 (61.2)	1 (0.9)	1 (0.9)	2 (1.7)
Are you satisfied with your interpersonal relationship with the health workers in the hospital?	4.5 (±0.5)	61 (52.6)	53 (45.7)	2 (1.7)	0 (0.0)	0 (0.0)
Question items		**Very convinced**	**Convinced**	**Not sure**	**Not convinced**	**Very unconvinced**
Do you feel convinced that the people who attend to you are trained professionals?	4.4 (±0.8)	62 (53.4)	47 (40.5)	3 (2.6)	2 (1.7)	2 (1.7)
Question items		**Very often**	**Often**	**Not sure**	**Not often**	**Never**
Do the health workers attend to you in a timely manner?	4.0 (±1.1)	47 (40.5)	47 (40.5)	2 (1.7)	16 (13.8)	4 (3.4)
Have you ever had cause to go back to the hospital because you were given wrong medications, lost or misplaced case notes/folder or test results?	4.7 (±0.8)	2 (1.7)	2 (1.7)	3 (2.6)	13 (11.2)	96 (82.8)

*Mean value <4.4 denotes negative perception and satisfaction while ≥4.4 denotes positive perception and satisfaction

There was no association between effective implementation and management of HIV interventions and staff motivation (P = 0.0571). There was an association between the availability of HIV/AIDS commodities and the delivery of quality HIV/AIDS care and treatment services (P < 0.0001). There was an association between quality healthcare service delivery and the availability of professionally well trained healthcare workers (P = 0.0328). Clients satisfaction was significantly associated with the quality of services received at the study sites (P = 0.0423).

DISCUSSION

Long waiting time and inadequate health workforce were major factors reported to adversely affect the satisfaction of clients about HIV services provided at the health facilities. These factors were common to both health workers and clients. It was interesting to note that the clients also reported inadequate health workforce as a major constraint to delivery of HIV services as health workers. However, stigmatization by health workers and stock-out or inadequate supply of drugs, laboratory reagents and materials were major complaints more specific to clients; compared to lack of incentives or staff motivation, poor conditions of

services, lack of government ownership and commitment that were more specific to health workers. Although HIV/AIDS added specific burdens on the health services and the service providers [7], the study findings were somewhat consistent to previous reports of demotivating working environments, stigma amongst others.[6,8,9]

Recruitment of additional health workforce and better infrastructural facilities or improved working conditions were the major recommendations by both health workers and clients for improved quality of services provided at the health facilities. However, reduced waiting time was more specific to clients comparable to good staff motivation/incentives to health workers. Nonetheless, the effective delivery of HIV prevention, treatment and care services was found to be independent of highly motivated staff. This is consistent with Frederick Herzberg's two-factor theory (also called the theory of work motivation) which postulated that man has two sets of needs: the maintenance and motivational needs.[11,12] The maintenance needs are associated with negative feelings or concerned with the avoidance of pain and dissatisfaction; and include money, working conditions and interpersonal relations etc. These needs produced no growth in the workers' output capacity but will merely prevent a decline in his productivity. They are continuous, progressive and can never be permanently satisfied.[11,12] The motivational needs are factors associated with positive feelings or concerned with actively seeking and achieving satisfaction and fulfillment. These factors include challenging work situation, possibility of professional advancement and growth, recognition given to the workers, and responsibility assigned on the job and personal achievement on the job. The factors often lead to increasing individual total output capacity on the job; and will permit the worker to grow and develop to full potentials.[11,12]

The majority of the constraints identified in this study such as poor working conditions, lack of incentives amongst others constituted the Herzberg's maintenance needs. Elimination or amelioration of these constraints would do little to motivate an individual to superior performance or increased productivity but would prevent a decline in the workers' productivity or eliminate dissatisfaction and work restriction.[11, 13] The factors reported to motivate an individual to an increased productivity were staff training or retraining, recruitment of additional health workforce, staff award or recognition of excellence and patient satisfaction.

The implementation of quality HIV/AIDS prevention, treatment and care services was found to be dependent on the availability of HIV/AIDS commodities and the availability of well-trained health workers in the health facilities. However, the health workers had negative satisfaction about equipment and materials available for their work and the conditions of service in the health facilities. The professional competence of health workers was reported very satisfactory by the clients.

Client satisfaction was found to be dependent on factors such as the timeliness of service provision, attitude of staff towards them or the interpersonal relationships, quality of services received and the accuracy of information received amongst others. The perception of health workers about the satisfaction of clients with services they provide was positive. This is contrary to the clients' reports of a negative perception about the services they received from the health facilities.

The health workers reported positive satisfaction with the interpersonal relationship that exists among them or between the health workers and the clients. This is somewhat consistent with findings from clients who also reported positive satisfaction about the interpersonal relationship among the health workers in the health facilities. However, the satisfaction of clients about the attitude of the health workers towards them and towards the performance of their jobs was negative. The reports of health workers' attitudes or interpersonal relationships by clients may seem more objective compared to that by health workers

George Elton Mayo's theory of human relations generalized that work satisfaction depends to a large extent on the informal social pattern of the workers; and that where norms of cooperativeness between workers and supervisors are developed, physical working conditions and monetary incentives have little value or impact on the productivity of workers.[14]. The health workers' interpersonal relationship is very essential for work satisfaction in accordance with Mayo's theory.[14] Healthy interpersonal relationship is important to work satisfaction and should be promoted for optimal service delivery.[14] Therefore, the negative attitude of the health workers towards themselves and towards the performance of their jobs as reported by clients will require targeted interventions for improvement.

There were limitations to this study. Some participants may falsely report constraints to delivery of quality HIV services or high/low level of satisfaction to the services provided to impress/despise the service providers or the implementing partners supporting the HIV interventions in the health facilities (response bias).

There may be recall bias when responding to the questionnaire items in the instrument. These may overestimate or underestimate the effects been measured in this study. Only clients who accessed health services in the study sites for at least three months duration were selected for the study. The exclusion of clients who accessed health services for less than 3 months duration may be a source of potential bias which may overestimate/ underestimate the effects been measured in this study.

CONCLUSION

The major constraints reported were inadequate health workforce, lack of incentives or staff motivation, poor conditions of service, lack of government ownership and commitment and long waiting time by clients. The professional competence of health workers providing services at the health facilities was very satisfactory. The interpersonal relationships among health workers were found to be positive but attitudes of health workers towards clients were negative. The study findings showed that effective delivery of HIV prevention, treatment and care services is dependent on factors other than staff motivation. The factors reported to motivate an individual to an increased productivity were staff training or retraining, recruitment of additional health workforce, staff award or recognition of excellence and patient satisfaction. This study identified constraints that can inform interventions targeted at improving the delivery of quality HIV prevention, treatment and care services in Nigeria.

Recruitment of additional health workforce and better infrastructural facilities or improved working conditions, good staff motivation/incentives and reduced waiting time were the major recommendations for maintenance or improved delivery of quality of HIV prevention, care and treatment services.

ACKNOWLEDGMENTS

The authors declare that they have no competing interests.

REFERENCES

1. UNAIDS/WHO (2013). Global AIDS Epidemic Update. Available at: http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf, Accessed 1st April 2014.
2. UNAIDS/WHO (2007). AIDS Epidemic Update. Available at: http://data.unaids.org/pub/epislides/2007/2007_epiupdate_en.pdf, Accessed 1st April 2014.
3. World Health Organization (2008). Essential Prevention and Care Interventions for Adults and Adolescents living with HIV in resource-limited settings. Available at: http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf, Accessed 1st April 2014.
4. World Health Organization (2007). Towards universal access: scaling up priority HIV/AIDS interventions in the health sector: progress report. Available at: http://www.who.int/hiv/mediacentre/universal_access_progress_report_en.pdf, Accessed 1st April 2014
5. Federal Ministry of Health (2014). Integrated National Guidelines for HIV Prevention, Treatment and Care. Federal Ministry of Health, Abuja 2014.
6. Hanson, K., Ranson, M. K., Oliveira-Cruz, V. and Mills, A (2003). Expanding access to priority health interventions: a framework for understanding the constraints to scaling-up. *J. Int. Dev* 15: 1–14.
7. World Health Organization (2004). Scaling up HIV/AIDS care: service delivery and human resources perspectives. World Health Organization, Geneva. Available at: *http://www.who.int/hrh/documents/en/HRH_ART_paper.pdf*. Accessed 1st April 2014.
8. Jones D, Weiss S, Chitalu N (2014). HIV Prevention in Resource Limited Settings: A Case Study of Challenges and Opportunities for Implementation. *Int J Behav Med*. DOI: 10.10007/s12529-014-9397-3.
9. Chillag K, Bartholow K, Cordeiro J, Swanson S, Patterson J, Stebbins S, Woodside C, Sy F (2002). Factors Affecting the Delivery of HIV/AIDS Prevention Programs by Community-Based Organizations. *AIDS Education and Prevention* 14, Supplement A, 27–37.
10. Nunnally JC (1978). Psychometric Theory. McGraw-Hill, Inc.: New York, 1978.
11. Offiong OJ. (2004). Frederick Herzberg. In: Nnamdi HS, Offiong OJ, Tonwe DA (Eds.), Eminent Administrative and Management Thinkers, 3rd Edition. Amfitop, Lagos, pp. 226 - 238.
12. Scott S (1975). Behavioural Theories. In: Scott S (Ed), Behavioural Theories. Coverdale Educational Publishers. London, pp. 3 - 65
13. Schwab DP, Devitt WH, Cummings LI (1971). A test

of the adequacy of the two factor theory as a predictor of self-report performance effects personnel psychology. *Summer* 293 - 303.

14. Tonwe DA (2004). George Elton Mayo. In: Nnamdi HS, Offiong OJ, Tonwe DA (Eds.), Eminent Administrative and Management Thinkers, 3rd Edition. Amfitop, Lagos, pp. 194 - 208.