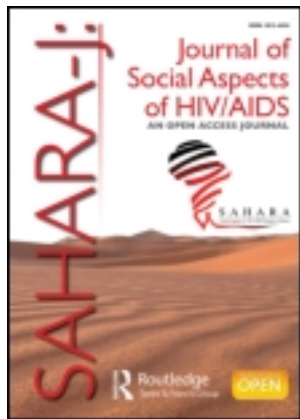


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Accessibility of antiretroviral therapy in Ghana: Convenience of access

Joyce Addo-Atuah, Dick Gourley, Greta Gourley, Shelley I. White-Means, Robin J. Womeodu, Richard J. Faris, Nii Akwei Addo

Abstract

The convenience of accessing antiretroviral therapy (ART) is important for initial access to care and subsequent adherence to ART. We conducted a qualitative study of people living with HIV/AIDS (PLWHA) and ART healthcare providers in Ghana in 2005. The objective of this study was to explore the participants' perceived convenience of accessing ART by PLWHA in Ghana. The convenience of accessing ART was evaluated from the reported travel and waiting times to receive care, the availability, or otherwise, of special considerations, with respect to the waiting time to receive care, for those PLWHA who were in active employment in the formal sector, the frequency of clinic visits before and after initiating ART, and whether the PLWHA saw the same or different providers at each clinic visit (continuity of care). This qualitative study used in-depth interviews based on Yin's case-study research design to collect data from 20 PLWHA and 24 ART healthcare providers as study participants.

- Reported travel time to receive ART services ranged from 2 to 12 h for 30% of the PLWHA.
- Waiting time to receive care was from 4 to 9 h.
- While known government workers, such as teachers, were attended to earlier in some of the centres, this was not a consistent practice in all the four ART centres studied.
- The PLWHA corroborated the providers' description of the procedure for initiating and monitoring ART in Ghana.
- PLWHA did not see the same provider every time, but they were assured that this did not compromise the continuity of their care.

Our study suggests that convenience of accessing ART is important to both PLWHA and ART healthcare providers, but the participants alluded to other factors, including open provider-patient communication, which might explain the PLWHA's understanding of the constraints under which they were receiving care. The current nation-wide coverage of the ART programme in Ghana, however, calls for the replication of this study to identify possible perception changes over time that may need attention. Our study findings can inform interventions to promote access to ART, especially in Africa.

Keywords: antiretroviral therapy, ART, access, convenience of accessing ART, HIV/AIDS treatment and care, Ghana

Résumé

La commodité d'accès à la thérapie antirétrovirale (ARV) est importante pour l'accès aux soins initiaux et l'adhérence à la thérapie ARV. Nous avons mené une étude qualitative des personnes vivant avec le VIH/ SIDA (PVVIH) et les fournisseurs de soins de santé ARV au Ghana en 2005. L'objectif de cette étude était d'explorer comment les participants percevaient l'accès à l'ARV pour les PVVIH au Ghana. L'aisance d'accès a été évaluée par le chemin parcouru pour avoir accès aux services de santé et le temps d'attente pour recevoir des soins, la disponibilité, ou par ailleurs des considérations particulières concernant le temps d'attente pour recevoir des soins, pour les PVVIH qui avaient un emploi en plein temps dans le secteur formel, la fréquence des visites à la clinique avant et après l'initiation du traitement antirétroviral, ou si le PVVIH a vu les mêmes ou différents fournisseurs à chaque visite à la clinique (la continuité des soins). Cette étude qualitative a utilisé des entretiens approfondis basés sur le protocole expérimental d'étude de cas de Yin pour recueillir des données de 20 PVVIH et 24 prestataires de soins ARV qui ont participé à cette étude

- Le chemin parcouru pour recevoir des ARV était de 2 à 12h pour 30% des PVVIH.
- Le temps d'attente pour recevoir les soins était de 4 à 9 h.

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- Les fonctionnaires tels que les enseignants recevaient plus rapidement des soins dans certains centres; mais ce n'était pas une pratique constante dans tous 4 les centres ARV examinés.
- Les PVVIH corroboraient la description des fournisseurs sur la procédure d'initiation et de contrôle du traitement ARV au Ghana.
- Les PVVIH ne voyaient pas les mêmes fournisseurs à chaque fois, mais ils ont été rassurés sur le fait que ça ne compromettrait pas la continuité de leurs soins.

Notre étude montre que la facilité d'accès au traitement ARV est important à la fois pour les PVVIH et les fournisseurs de soins ARV, mais les participants ont fait allusion à d'autres facteurs, y compris un dialogue ouvert patient- fournisseur de soins, qui pourrait aider les PVVIH à comprendre les contraintes dans lesquelles ils recevaient des soins. L'actuelle couverture nationale du programme ARV au Ghana, appelle au renouvellement de cette étude afin d'identifier les changements de perception possibles au fil du temps qui nécessiteraient qu'on y accorde une attention particulière. Nos résultats d'étude peuvent guider les interventions visant à promouvoir l'accès au traitement antirétroviral, particulièrement en Afrique.

Mots clés: La thérapie antirétrovirale, ARV, l'accès, la commodité d'accès à l'ARV, le traitement et les soins VIH/SIDA, Ghana

Introduction

Antiretroviral therapy (ART) has effectively decreased HIV/AIDS-related morbidity and mortality and improved the quality of life of people living with HIV/AIDS (PLWHA), enabling them to live productive lives (Keiser, Nassar, Kvanli, Turner, Smith & Skiest 2001; Messeri, Lee, Abramson, Aidala, Chiasson & Jessop 2003; van Sighem, van de Wiel, Ghani, Jambroes, Reiss, Gyssens, *et al.* 2003). Challenges, including inadequate skilled health manpower and resources for initiating and monitoring therapy, among others, were key concerns regarding ART availability in developing countries (Hongoro & McPake 2004; Kober & Van Damme 2004). These concerns were particularly true for sub-Saharan Africa, which carries the greatest burden of the HIV/AIDS pandemic (McCoy, Chopra, Loewenson, Aitken, Ngulube, Muula, *et al.* 2005; Muula 2004). Medication costs, regimen complexities, toxicity and adherence challenges, and the risk of the development of resistance to antiretrovirals (ARVs) were some of the initial major concerns (Nachega 2002; Ritzenthaler 2005).

Despite the initial concerns of the global community, ART adherence rates, virologic and immunologic response to treatment, and other outcomes comparable to those obtained in more developed settings have been reported in ART pilot programmes in resource-limited settings (Djomand, Roels, Ellerbrock, Hanson, Diomande, Monga, *et al.* 2003; Etard, Ndiaye, Thierry-Mieg, Gueye, Gueye, Laniece, *et al.* 2006; Koenig, Leandre & Farmer 2004; Laurent, Diakhate, Gueye, Toure, Sow, Faye, *et al.* 2002; Libamba, Makombe, Mhango, Ascurra, Limbambala, Schouten, *et al.* 2006; Weidle, Malamba, Mwebaze, Sozi, Rukundo, Downing, *et al.* 2002).

ARV medications costs have fallen substantially in the global market place, making them much more affordable to developing countries (Alcorn 2006, 2007; Bill & Belinda Gates Foundation 2010; Reuters 2007; The Global Fund 2010; The United States President Emergency Fund for AIDS Relief 2010; World Health Organization 2003). However, studies conducted in Botswana, Tanzania, and Uganda, among others, have demonstrated that the costs of the medications are not the only challenges that PLWHA face in accessing ART (Hardon, Akurut, Comoro, Ekezie, Irunde, Gerrits, *et al.* 2007; Mshana, Wamoyi, Busza, Zaba, Changanlucha, Kaluvya, *et al.* 2006). Even when medications are provided free of charge, transportation

costs to receive care, lack of personal resources for feeding, and long waiting times to receive care are some challenges that have been reported with respect to accessing ART in sub-Saharan Africa (Hardon *et al.* 2007; Mshana *et al.* 2006). These issues have implications for both the initial access to ART and the long-term adherence to ART in these settings, especially in the era of national scale-ups of ART programmes. Furthermore, factors related to access to care, including ART, may be contextual in nature, in that factors deemed very important to access to PLWHA in one care setting may not be judged in the same light by PLWHA in another setting and hence the need to explore these access-related factors in Ghana to build on the currently available literature.

The goal of this study was to explore the convenience of accessing ART from the perspectives of PLWHA receiving care, including ART in Ghana, and ART healthcare providers during the pilot stage of the ART programme in Ghana.

The context of the study: the START project in Ghana

The Support and Treatment for Antiretroviral Therapy (START) project in Ghana began at two 'ART Learning Sites' in Ghana in June 2003. The project was expanded to two teaching hospitals in Accra and Kumasi in December 2003 and February 2004, respectively (National AIDS/STI Control Programme 2003).

The project provided a comprehensive package of services to care-seekers including the following:

- voluntary counselling and testing (VCT);
- prevention of mother-to-child transmission (PMTCT);
- management of opportunistic infections (OIs) including tuberculosis (TB);
- ART;
- sexually transmitted infection (STI) management; and
- home-based care (National AIDS/STI Control Programme 2003).

For 1 month's supply of medications (ARVs), prophylaxis/treatment of OIs, and needed laboratory tests and treatment

monitoring, PLWHA were required to contribute only ₵50,000 (equivalent of about \$5 in 2005) (National AIDS/STI Control Programme 2003). Each client paid ₵5000 (equivalent of \$0.5) for VCT services; PMTCT services were provided for free. A national ART scale-up plan to the regional and district hospitals was in place as well as a policy prohibiting denial of the needed services because of inability to pay.

Methods

This study was conducted using an adaptation of Aday and Andersen's 'Framework for the Study of Access to Medical Care' (Aday & Andersen 1974, 1981; Andersen, McCutcheon, Aday, Chiu & Bell 1983). These researchers described four dimensions of access: (1) potential access: structural indicators; (2) potential access: process indicators; (3) realized access: objective indicators; and (4) realized access: subjective indicators (Aday & Andersen 1974, 1981; Andersen *et al.* 1983). The last dimension of access was defined as a measure of the consumer's satisfaction with access to medical care with respect to its convenience, availability, financing, provider characteristics, and quality (Aday & Andersen 1974, 1981; Andersen *et al.* 1983). This study explored the convenience of accessing ART in Ghana by PLWHA from the perspective of PLWHA and their ART healthcare providers. Convenience of accessing ART was evaluated from the following measures:

- (1) Travel times to receive care as a proxy measure of travel distances.
- (2) Waiting times to receive all the needed services once the PLWHA arrived at the ART centre.
- (3) Availability, or otherwise, of any provision, with respect to the waiting times, for those PLWHA in active employment in the formal sector.
- (4) The frequency of required clinic visits before and after initiating ART.
- (5) Seeing the same or different providers at different clinic visits (continuity of care).

The study participants consisted of 44 key informants: 20 PLWHA, 5 each from the four ART centres operating in Ghana as of 1 July 2005, and 24 ART healthcare providers, also from the ART centres studied. The initial plan was to interview 28 ART healthcare providers from the four centres as key informants, 7 from each of the four ART centres. The intended criteria for the selection of the seven ART healthcare providers were as follows: (a) two medical officers at the adult HIV/AIDS clinic including the ART lead physician; (b) the most senior medical officer at the paediatric AIDS clinic; (c) two nurses/counsellors including the senior ART adherence counsellor; (d) the most senior pharmacist/technician involved in the ART programme at the centre; and (e) the most senior laboratory technologist/technician in the programme at the centre. During data collection in Ghana, however, it was learnt that the same two clinical officers of the Family Health International (FHI) provided the ART services at both Atua Government Hospital (Mondays and Thursdays) and St Martin de Porres Hospital (Wednesdays) for both adults and children living with HIV/AIDS. In the former centre (Atua), the second nurse/counsellor could not be interviewed because of a conflict with her work schedule. In the third ART

centre (Korle Bu Teaching Hospital), recently graduated psychologists had been employed as HIV/AIDS counsellors and ART adherence counsellors, so one of them was interviewed. In the fourth ART centre (Komfo Anokye Teaching Hospital (KATH), Kumasi), three pharmacists, instead of one, were closely involved in the ART programme, playing very different roles in the programme, and so they were all interviewed. One of these three pharmacists was providing pharmaceutical services, including ART adherence counselling and patient monitoring to follow up and promote adherence, and worked with the other ART providers closely to maximize therapy for the PLWHA. The second pharmacist in this centre was the facility's HIV/AIDS Logistics Manager, responsible for ensuring that the hospital, as a whole, did not run out of any HIV-related medication or diagnostics. This was in addition to his routine role as the pharmacist manager of a specialist ward. The third pharmacist was the coordinator for the social mobilization of PLWHA within their communities, assisting these PLWHA support groups with the needed information, education, and directives to access other resources available to them through other organizations and agencies. Consequently, 24 ART healthcare providers were available to participate in the study: nine and seven from KATH and Korle Bu Teaching Hospital, respectively, and a total of eight from Atua and St Martin Hospitals.

This qualitative study of the accessibility of ART in Ghana was undertaken with a phenomenological philosophical underpinning (within the constructivism study paradigm), as it expounds the 'need to consider human beings' subjective interpretations, their perceptions of the world (their life worlds) as our starting point in understanding social phenomena' (Ernest 1994; Zucker 2001). We believe that it is appropriate in this study because 'accessibility' is a social phenomenon which only the PLWHA accessing ART can meaningfully share their lived experiences and interpretations of what it means to them (Ernest 1994; Zucker 2001). The ART healthcare providers taking care of the PLWHA can also throw some light on the phenomenon of accessibility because of their close association with their patients at the study sites. This strategy of collecting data from convergent sources of evidence, referred to as triangulation, has been found to improve the validity and reliability of qualitative studies and the credibility of the study findings (Patton 2002; Yin 2003).

This study used Yin's (2003) case-study research design, since it has been described as the preferred strategy for investigating a contemporary phenomenon, such as access to ART, within its real-life context. Yin (2003) described the five components in the case-study research design as (1) research question(s), (2) propositions, (3) units of analysis, (4) the logic linking the data to the propositions, and (5) the criteria for interpreting results. The study methods are described here under the following headings.

Research questions and propositions

The research question addressed in the study was 'How convenient, from the perspectives of people living with HIV/AIDS (PLWHA) and their ART healthcare providers in Ghana, is it to access ART in Ghana?' According to Yin (2003), *a priori* propositions attached to the study question define the limits of data collection and direct the data collection procedure in order to address the research question.

From a review of the literature, five *a priori* propositions were developed to address the research question:

- (1) PLWHA travel long distances to receive ART services.
- (2) The multiple clinic visits required for initiating and monitoring ART are inconvenient for PLWHA.
- (3) PLWHA feel that they spend too much time waiting for the needed services at each clinic visit.
- (4) There is no special provision, with respect to the waiting time, for PLWHA who are workers in the formal employment sector.
- (5) PLWHA do not see the same provider for the different services they need at each clinic visit.

These *a priori* propositions formed the basis for the development of the study questionnaire (Yin 2003). The interview outline, a component of the comprehensive questionnaire developed for the larger study, of which what is reported in this paper is a constituent part, is presented in Table 1.

Units of analysis

The units of analysis were the convenience of accessing ART from the (1) perspectives of PLWHA and (2) perspectives of their ART healthcare providers in Ghana. Interview data collected from the PLWHA and their ART healthcare providers were used for these analyses.

Logic linking the data to the propositions and the criteria for interpreting the results

A modified version of the data analysis strategy known as pattern-matching was used (Yin 2003). In the pattern-matching procedure, two potential patterns are identified prior to the study

and the interview data are then compared with these *a priori* patterns to determine whether they match one pattern better than the other (Yin 2003). In this study, the data were analysed by assessing whether the respondents' responses supported the relevant *a priori* proposition or not.

Description of the study sites

The study sites or cases were the four ART centres operational in Ghana as of 1 July 2005. They consisted of two semi-rural hospitals (Atua Government Hospital and St Martin de Porres Hospital in Agomanya), located 69 and 72 km from the capital city of Accra, respectively. The other two ART centres were located in two teaching hospitals (Korle Bu Teaching Hospital and KATH), in Accra and Kumasi (270 km from Accra), respectively.

Atua Government Hospital is a 122-bed district hospital serving the Manya and Yilo Krobo Districts in the Eastern Region of Ghana. It belongs to the national network of facilities of the Ghana Health Service (GHS). GHS is responsible for healthcare delivery in the public sector in Ghana (Ghana Health Service 2012). As a district hospital, Atua Government Hospital serves as the referral health facility as well as having an oversight responsibility for the 11 public (8) and private (3) healthcare facilities within its jurisdiction, with an estimated 86,283 people in the catchment area in 2011 (Ghana Health Service 2012). Daily outpatient attendance at Atua averages 170 (Ghana Health Service 2012). Healthcare services provided in the hospital include outpatient/casualty, dental, eye, maternal and child health/family planning, mental health clinic, theatre, laboratory, mortuary, and pharmacy.

Atua Government Hospital was one of the two 'learning centres' (St Martin Hospital was the other one) established in June 2003 by the FHI, working with the GHS and other partners to provide comprehensive HIV/AIDS-related services (Ritzenthaler 2005). These services comprised VCT, PMTCT, and clinical care for PLWHA, including ART and home-based care (Ritzenthaler 2005). Atua and St Martin were chosen due to the high prevalence of HIV/AIDS in their catchment areas, which stood at 14% compared with the national average of 3% in 2001 (Ritzenthaler 2005). At the time of the study, the HIV/AIDS clinic at Atua operated on Mondays and Thursdays with an average daily patient load of 100–160 (Addo-Atuah, Gourley, Gourley, White-Means, Womeodu & Faris 2008). A unique feature of this clinic was that it was run as part of the general outpatient clinic in an effort to 'de-stigmatize' HIV/AIDS, although PLWHA had file folders of a colour different from that of the file folders of others (Addo-Atuah *et al.* 2008). The hospital had in place all the laboratory support, including a CD4 count machine, needed for initiating and monitoring ART according to the Ghana ART Guidelines (Ministry of Health/Ghana Health Service 2002). It did not have a DNA polymerase chain reaction (PCR) machine for viral load determination (Addo-Atuah *et al.* 2008). Viral load determination was not required for initiating ART in Ghana (Ministry of Health/Ghana Health Service 2002). When viral load determination was needed, for example, for determining virologic failure, specimens were sent to the Noguchi

Table 1. Interview guide for the PLWHA and the ART healthcare provider study participants.

For the PLWHA

Sociodemographic information (Figs 1–3)

Convenience of accessing ART services: Some people have expressed concerns about travel distances and the number of clinic visits they have to make among others. What things, other than cost, make it difficult for you to get treatment here?

- Travel distance to the clinic
- Clinic operating hours in relation to work (if applicable)
- Frequency of clinic visits before and after initiating ART
- Time spent during each clinic visit
- Seeing the same or different providers during clinic visits

Any other thing you find inconvenient about the treatment you receive here?

For the ART healthcare providers

Demographic information (Figs 4 and 5)

Now I would like to discuss with you regarding your thoughts about the convenience of access for the PLWHA. From your experience with the PLWHA that you care for, how do you think they perceive the services they receive here with respect to the following?

- Waiting time to receive care
- Distances travelled to receive care
- Clinic operating hours in relation to working hours of PLWHA
- Seeing the same or different providers/visit

Memorial Institute for Medical Research, located in the University of Ghana, Legon campus, in Accra (Addo-Atuah *et al.* 2008).

St Martin de Porres Hospital is a 68-bed, 24-h full-service, non-profit hospital situated in Agomanya, in the Manyo Krobo District in the Eastern Region of Ghana. The hospital is a National Catholic Health Service facility under the Koforidua Diocese of the Church and also a member of the Christian Health Association of Ghana (Nyakutsey & Nubuasah 2010). Established in 1946 as a maternity home and clinic, it was the only health facility in the area providing access to health services in the formal sector for the poor and needy in the surrounding towns and villages who did not have such access at the time (Nyakutsey & Nubuasah 2010). It was elevated to a full-hospital status by the Ministry of Health in 1997. *St Martin* offers a range of services including outpatient and inpatient services, internal medicine, obstetrics and gynaecology, paediatrics, surgery, laboratory, diagnostics, and pharmacy. The hospital has been recognized among the top hospitals in the Eastern Region for the high quality of its services, outstanding customer service, and compassionate care giving (Nyakutsey & Nubuasah 2010). Although not a teaching hospital, *St Martin* is a popular choice for practice experience for a range of health professional students seeking clinical and public health experience in a semi-rural care setting (Nyakutsey & Nubuasah 2010).

The hospital was one of the two 'learning centres' established in June 2003 to kick-start the ART programme in Ghana (Ritzenthaler 2005). It also offers specialist care for TB and leprosy (Nyakutsey & Nubuasah 2010). At the time of the study, the hospital had the basic laboratory facilities for HIV testing and for the initiation and monitoring of ART, except a CD4 count machine. It sent its specimens to the district hospital, Atua Government Hospital, 3 km away, for CD4 count determinations and for the more elaborate laboratory tests (Addo-Atuah *et al.* 2008). National AIDS/STI Control Programme (NACP) records indicate that *St Martin* currently has its own CD4 count machine (National AIDS/STI Control Programme 2010). Its HIV/AIDS clinic, run on Wednesdays at the time of the study, was very heavy with PLWHA accessing its services there from all over the country (Addo-Atuah *et al.* 2008).

Korle Bu Teaching Hospital is a 2000-bed facility, the highest referral hospital in Ghana and the third largest hospital in Africa. Established in 1923, the hospital now has 17 clinical and diagnostic departments/units (Korle Bu Teaching Hospital 2012). It has a daily outpatient attendance of about 1500 and about 250 hospital admissions. *Korle Bu* is a teaching hospital, offering facilities for clinical practice and research for the faculty and students of the University of Ghana Medical School along with five other schools within the College of Health Sciences of the University of Ghana (Korle Bu Teaching Hospital 2012). *Korle Bu* is well known beyond the borders of Ghana for its three Centres of Excellence. These are (1) the National Cardiothoracic Centre, (2) the National Reconstructive Plastic Surgery and Burns Centre, and (3) the National Centre for Radiotherapy and Nuclear Medicine, all of which draw clients from neighbouring Nigeria, Burkina Faso, and Togo, among others

(Korle Bu Teaching Hospital 2012). Clinical departments include Medicine, Child Health, Obstetrics and Gynaecology, Pathology, Surgery, and Radiology. Fields of specialization in the hospital include neurosurgery, eye, ear, nose and throat, orthopaedics, oncology, and dermatology (Korle Bu Teaching Hospital 2012). The hospital recently carried out the first ever kidney transplant in Ghana and is one of the few hospitals in Africa with facilities for DNA investigative procedures (Korle Bu Teaching Hospital 2012). All the above-mentioned expertise is available for the management of PLWHA at the AIDS clinic when needed (Addo-Atuah *et al.* 2008).

The HIV/AIDS clinic at *Korle Bu* was established in December 2003 to offer comprehensive preventive services and clinical care for PLWHA, including ART (National AIDS/STI Control Programme 2003). At the time of the study, the hospital had all the required laboratory support, including CD4 count machine, needed for initiating and monitoring response to ART according to the National Guidelines for ART (Addo-Atuah *et al.* 2008). It did not have a DNA PCR machine, but currently has one in place (National AIDS/STI Control Programme 2010). At the time of the study, the HIV/AIDS clinic was run three times a week on Mondays, Wednesdays, and Fridays. Patient load was very heavy and could be more than 300 per day at peak times. Depending on the number of doctors available on any clinic day, patient load per doctor per day could range from 50 to over 100 (Addo-Atuah *et al.* 2008).

Komfo Anokye Teaching Hospital (KATH) is a 1200-bed hospital located in Kumasi, the administrative and commercial capital of the Ashanti Region of Ghana. The road networks of the country, coupled with the geographical location and commercial nature of the city, make the hospital accessible to people from the surrounding regions of the country and beyond. Apart from catering to the healthcare needs of the Ashanti Region, KATH also receives referrals from the three northern regions (Northern, Upper East, and Upper West Regions) as well as from the Brong Ahafo and parts of the Central and Western Regions, covering a catchment population of over 10 million (Komfo Anokye Teaching Hospital 2010). Patients are also received from neighbouring Côte d'Ivoire and Burkina Faso (Komfo Anokye Teaching Hospital 2010). KATH offers facilities for teaching and clinical practice for faculty and students of the School of Medical Sciences and other health professional schools of the Kwame Nkrumah University of Science and Technology. Nursing and midwifery students from training colleges in the country are also trained there. KATH is also a training centre for the College of Physicians and Surgeons in Ghana and the West African College of Physicians and Surgeons (Komfo Anokye Teaching Hospital 2010). The hospital has directorates in accidents and emergency, medicine, surgery, child health, oral health, eye, ear, nose, and throat, anaesthesia and intensive care, obstetrics and gynaecology, oncology, and diagnostics, among others. Reported outpatient attendance and hospital admissions for 2009 were 437,400 and 41,657, respectively (Komfo Anokye Teaching Hospital 2010). In partnership with the University of Michigan and the Ghana College of Physicians and Surgeons, KATH has begun a residency programme to train emergency medicine physicians, the first of its kind in sub-Saharan Africa (Komfo Anokye Teaching Hospital 2010).

At the time of the study, the HIV/AIDS clinic at KATH was housed inside the Chest clinic of the hospital in an effort to reduce HIV/AIDS-related stigma and promote a better integration of the management of HIV/TB co-infections (Addo-Atuah *et al.* 2008). Similar to Korle Bu, KATH had all the laboratory facilities, including a CD4 count machine, for initiating and monitoring ART, but no DNA PCR machine at the time of the study (Addo-Atuah *et al.* 2008). The hospital is scheduled to receive a DNA PCR machine in 2012 (personal communication, Programme Manager, National AIDS/STI Control Programme).

Case-study procedures

Data collection took place at the four study sites in Ghana between 1 July and 8 September 2005; between 3 and 5 working days were spent at each ART centre for data collection purposes. Acting on the information received from the authorities at each site, data were collected from the PLWHA on the heaviest clinic day for each ART centre. The inclusion criteria for the PLWHA in this study were adults (over 15 years) who were already on or were about to initiate ART. Hence, the ideal location in the clinic for recruitment purposes turned out to be the pharmacy. It was necessary to elicit the assistance of the pharmacist adherence counsellor at each site in the recruitment effort due to HIV/AIDS-associated stigma. PLWHA key informants for this study were identified through convenience sampling (Patton 2002). Copies of the PLWHA recruitment letter were deposited with the pharmacist at each site; these were used for the recruitment effort. After receiving their medications from the pharmacist, each third PLWHA was asked whether he/she would like to participate in the study described in the recruitment letter. Interpretation in the local language was done to those unable to read. Prospective study participants were directed to a private room in the clinic secured for study enrolment to meet with the interviewer, the first author of this paper, for the one-on-one interviews.

Potential study participants were informed that the aim of the study was to explore their perceptions about the convenience of accessing the ART services they were receiving at the centre; they were assured that their participation was voluntary and confidential and their refusal to participate would not jeopardize their care in any way. Upon giving informed consent, each study participant was interviewed face to face using an interviewer-developed, standardized, structured, open-ended questionnaire (Table 1).

With respect to the healthcare providers, sampling was purposefully done as described by Patton (2002). These ART healthcare providers, as described by Patton (2002), were the typical medical officers, nurse/ART adherence counsellors, pharmacists, and laboratory personnel, who, because of their ordinary day-to-day work, had in-depth information about the concept being studied and hence their relevance and importance as key informants in this study. Therefore, at each of the four ART centres, the names of the ART healthcare providers with designations and responsibilities as already described were obtained from the facilities' medical directors/superintendents after the latter had authorized the study in their respective facilities. Individually addressed letters inviting the healthcare providers to participate in the study were sent out to them and later followed up with

telephone calls to set up appointments for their individual interviews after giving informed consent.

All interviews were tape-recorded with the permission of the study participants. Data from each tape-recorded interview were transcribed verbatim, word processed, and validated for accuracy. Data validation was done by playing back the recorded interview of each PLWHA study participant to him/her. Each of the ART healthcare providers received a transcribed copy of his/her interview session along with a letter of appreciation for his/her participation in the study. The participants were given 3 weeks to respond with changes they thought needed to be made to their transcripts. They were also made to understand that non-receipt of their feedback within the specified time frame would be taken as an indication of their agreement with the accuracy of their interview transcripts. Interview data were coded and analysed for congruence, or otherwise, with the relevant *a priori* propositions by the use of the qualitative data analysis software programme HyperRESEARCH (ResearchWare, Inc. 1988).

Interview data from the study participants had no identifying marks. The participants were identified by a three-digit number. All interview data collected remained confidential except to the interviewer. All data were securely protected in locked cabinets and electronic data were password protected. The study was approved by the Institutional Review Board of the University of Tennessee Health Science Center in Memphis, Tennessee, USA, and the relevant authorities in Ghana, including the Ministry of Health, the GHS, and the National AIDS/STI Control Programme (NACP).

Study findings

The PLWHA study participants were 55% female, 70% were between 30 and 49 years old, all but two had some sort of formal education, 65% had been diagnosed with HIV/AIDS for 1–3 years, and 55% had been on ART for 1–2 years at the time of the study (Fig 1–3). The ART healthcare providers consisted of the following: eight doctors, five pharmacists (including one dispensing technician), four laboratory technologists (including one technician), six nurses/counsellors, and one psychologist/counsellor (Fig. 4). Provider specialization included internal medicine, infectious diseases, paediatrics, chest diseases, dermatology, public health, clinical pharmacy and midwifery; some had more than one specialization. The providers were almost evenly distributed by gender (46% female); 92% were between 30 and 59 years old (Fig. 4); they consisted of providers with wide-ranging service experiences, although about 75% have been providing ART services for about 1–2 years at the time of the study (Fig. 5).

Convenience of accessing ART

PROPOSITION 1: PLWHA travel long distances to receive ART services.

Travelling time to the ART centre was used as a proxy measure of the travel distance because the majority of the PLWHA were not able to give the actual distances they had to travel from their homes to access ART services.

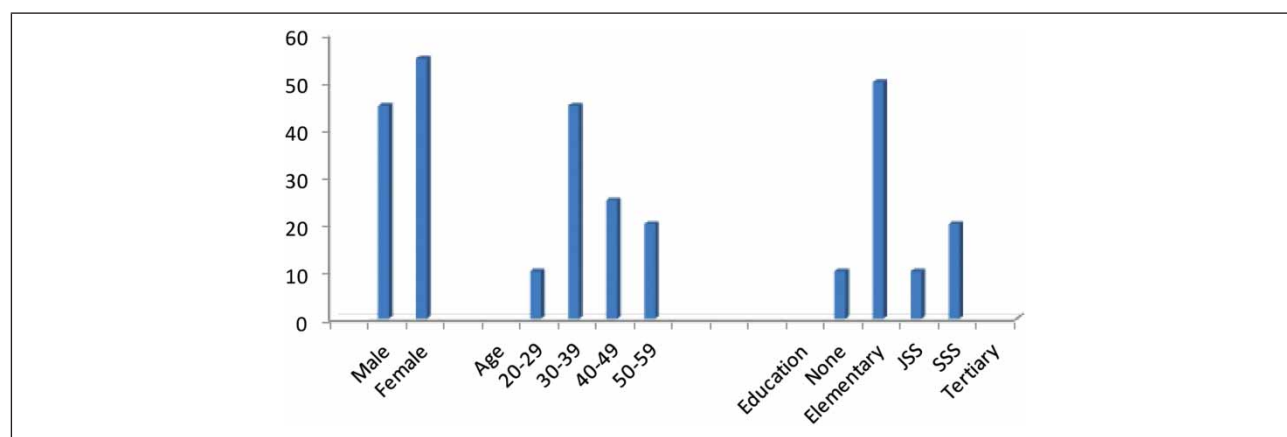


Fig. 1. Percentage distribution of gender, age, and educational levels of PLWHA study participants. N = 20. JSS, Junior Secondary School; SSS, Senior Secondary School.

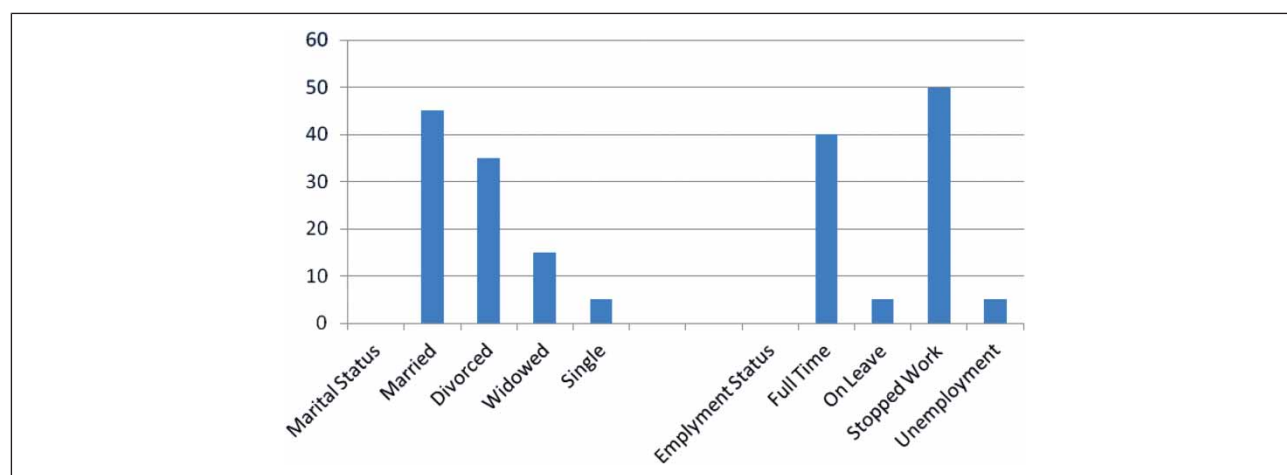


Fig. 2. Percentage distribution of marital and employment status of PLWHA study participants at the time of the study. Forty-three per cent of the divorces were consequent to HIV-positive diagnosis. N = 20.

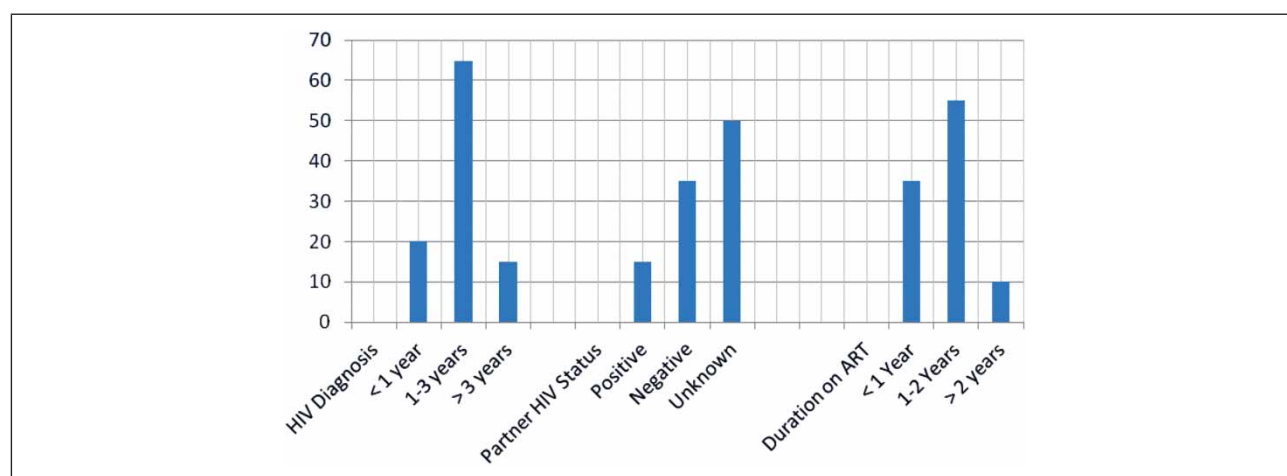


Fig. 3. Percentage distribution of period since HIV-positive diagnosis, partner HIV status of PLWHA, and duration the PLWHA had been on ART. N = 20. ART, Antiretroviral Therapy.

Six of the 20 PLWHA travelled several hours to the ART centres and hence supported this *a priori* proposition. Three of these PLWHA reported travel times between 2 and 4 h. The other

three travelled for more than 4 h to their ART centre; the longest time reported to access ART was 12 h as explained by one of the PLWHA:

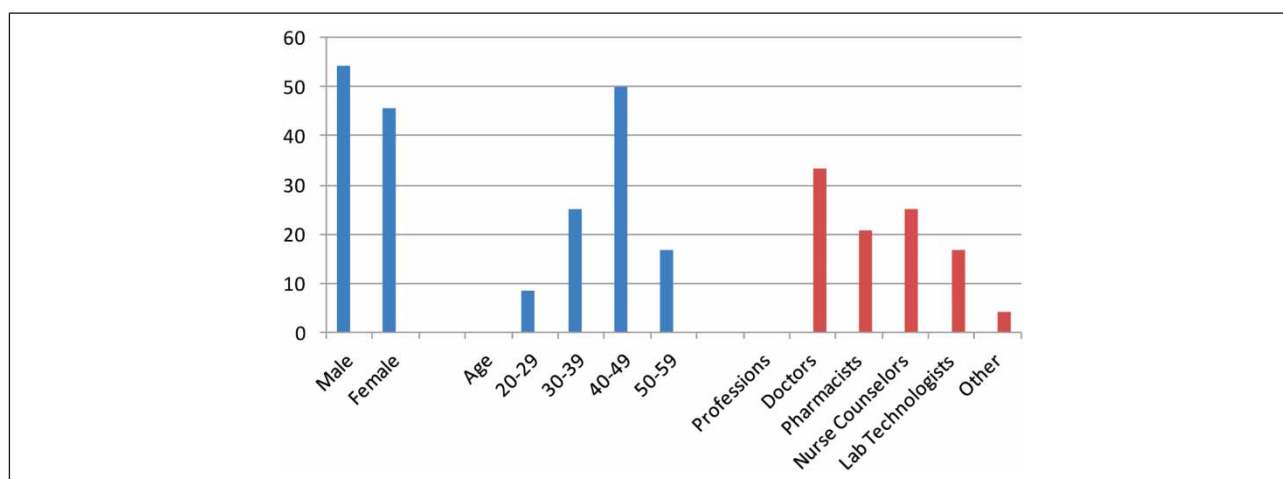


Fig. 4. Percentage distribution of gender, age, and professions of the ART healthcare providers in the study. N = 24.

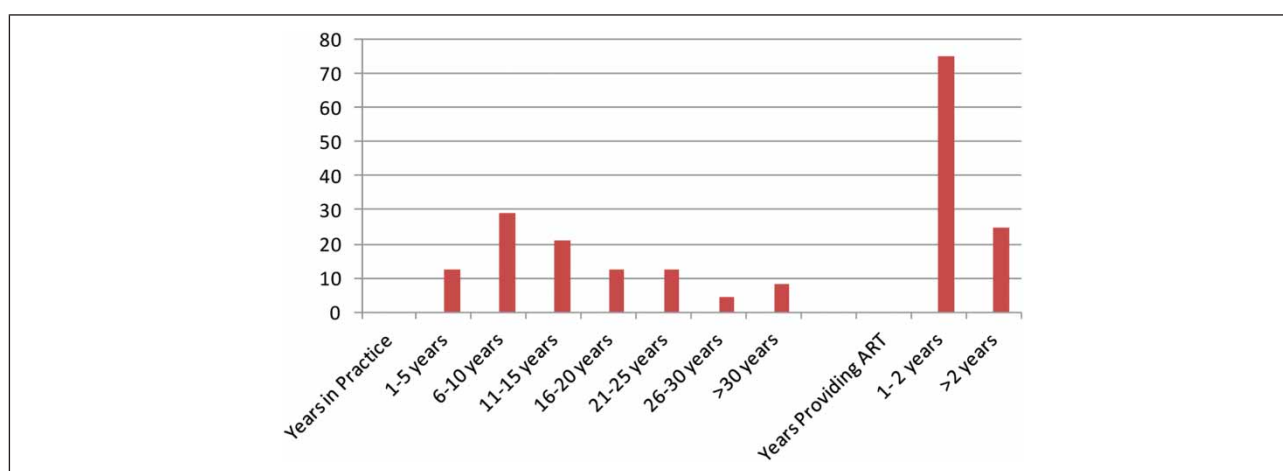


Fig. 5. Percentage distribution of the total number of years in practice and years providing ART services by the ART healthcare providers. N = 24.

Yes we are very close to the French border. I usually get up around 4:00 a.m. to start the journey to Agomanya. By 11-12 noon we will be in Kumasi and by 4-5 p.m. we would have reached Agomanya.

The remaining 14 PLWHA interviewed lived in the same city/town in which the ART centre was located. These reported travel distances of 1 h or less either on foot or by car.

When asked about the travel distances or travel times of PLWHA to access care, all the 24 ART healthcare providers were in agreement that the PLWHA came from distances far and near. However, the responses of 18 ART providers pointed to the fact that some of the patients actually chose to access services far away from their home because of HIV-related stigma. When ART services became available in centres near their homes and the providers suggested transferring them to these centres, some of the PLWHA refused to go. The response of one of the providers captured the situation:

We've been getting some from the Volta Region, some from the North, some are coming from even the Western Region,

but those from the Western Region, we ask them to go to Accra. We also have some from the district itself and beyond Koforidua. Now that they've (Koforidua) also started, we've asked them to go there, but some would say they would still come here. They've also been coming from Akosombo and other places to this clinic. We get a lot of cases. Even we decided to transfer those already here to Koforidua but they said they won't go.

A second ART provider from another centre confirmed this by saying that

Most of the time, it's like they don't want to go to Accra because they may be known there. There's one of the patients I think when he was sick, he was brought to his parents here and then he went to Accra. When he started working, he comes from Accra to the clinic here. One day he wasn't able to come on his scheduled visit although he didn't default and we advised him to go to Korle Bu but he said no, he would prefer coming here because he doesn't want anybody to know about his status back in Accra.

The providers, however, indicated that those PLWHA who could not afford the high travel costs had no choice but to agree to be transferred to centres close to their homes.

PROPOSITION 2: The multiple clinic visits required for initiating and monitoring ART are inconvenient for PLWHA.

Responses from 18 of the PLWHA did not support this proposition as the PLWHA showed an understanding of the process of initiating ART and why their therapy may have been delayed. The following response given by one PLWHA explained this position:

I came to counseling three times at two weekly intervals. I also came for a check up about two to three months before starting the medicines. After I've completed counseling in preparation for receiving the medicines, the doctor told me that my lab tests showed that I had anaemia so he needed to treat that before I started taking the HIV medicines. Today my lab showed that I am no longer anaemic that is why he prescribed the HIV medicines for me.

Similarly, another PLWHA said that when it was time for him to receive the medications, he developed jaundice and the doctor told him that it had to be treated before he started the therapy.

Only two PLWHA supported the proposition by expressing some frustration with the process. Their frustration, however, was with the requirement to send an Adherence Monitor before they would be initiated on ART and not with the frequency of clinic visits. One of the latter PLWHA who reported a 300-mile and 9-h travel time to access ART explained his frustration by saying that

When I came here originally, it was on Tuesday. I came to the clinic on Thursday and my blood was taken. They asked me to go back and report on the following Monday so I went home and came back on Monday. I was eager to be on the drugs so that Monday, the doctor looked at my lab results and said I was due to be put on the drugs but I had to go through counseling with a family member; I should look for somebody and tell the person. In fact, I've never felt so bad; I nearly shed tears because I'm a grown man, a responsible person who would take my medicines if you gave them to me. I told the doctor that I wouldn't deceive him if he gave me the medicines. I reminded him that I didn't wait to be sick before being sent to the clinic. I came myself because I wanted to know my status after what happened to my wife but they insisted I brought somebody. So I obeyed and went back looking for a brother but how to get him to come all the way was no joke.

When asked about the frequency of clinic visits made by PLWHA before and after initiating ART, all the providers described the protocol they followed with respect to patient preparation prior to the initiation of ART and monitoring thereafter, in accordance with the Guidelines for ART in Ghana at the time of the study (Ministry of Health/Ghana Health Service 2002). The national guidelines at the time defined the criteria

for initiating ART as a CD4 count below 200 cells/mm³, among others, and hence, PLWHA accessing care with CD4 count in this range immediately became eligible for ART. However, before ART was actually prescribed, the ART health-care providers described the patient preparatory protocol, which included baseline laboratory investigations and a three-stage counselling process taking place concurrently. The laboratory investigations routinely consisted of the following: (1) a CD4 count, (2) a full blood count, (3) a liver function test, (4) an assessment of kidney function, and (5) a sputum test for TB. These were expanded in patients whose condition and/or circumstances demanded it.

Patient counselling and education took place with their Adherence Monitors usually at 2-week intervals. However, depending on factors such as the patient's clinical condition and travel distance to the ART centre, the preparatory phase could be expedited so that ART could be started as soon as possible. The following response of one ART healthcare provider confirmed this:

Yes, I explained that until more sites are provided, people would still have to come from Western Region, from the Brong Ahafo Region, from the north to access care. People would have to come from Bolga, Bawku and those places. For these people, we sometimes have to do extra; we have to let them complete a whole panel of tests the same day so they can come for their CD4 count.

PROPOSITION 3: PLWHA feel that they spend too much time waiting for the needed services at each clinic visit.

The following waiting times (frequency) were reported by the PLWHA: ≤ 4 h (5), 5–8 h (12), and > 8 h (2). Some reported that waiting times to receive care could even go beyond 9–10 h depending on the patient load and other factors. However, only 3 of the 20 PLWHA supported the proposition as they reported being concerned about the long waiting times. One verbalized her concern by saying that

I have young children (13 and 15 years) so if I have to spend so much time here it bothers me. Yes because if I'm out for that long it worries the children. They go to school but on many occasions they would have come home long before I get back home from the hospital and that bothers me. Today for instance I reached here around 5:30 a.m.

Sixteen of the PLWHA did not support this proposition; they expressed an understanding of their waiting times to receive the needed services as verbalized by one of them as follows:

Ei, what type of patient would I be if I should be bothered by the time I spend in the hospital? Then I believe they should stay at home (laughter). When I come to the hospital, I join the queue like anybody else and wait patiently for my turn to see the doctor. After all, if I were not ill, I wouldn't be here so I should have the patience always to wait for my turn. I believe the doctors themselves are worried when they see us waiting here for that long because we are many.

The question was not applicable to the last PLWHA; as a clinic employee, there was no waiting time as the response explains, 'As for me, I come very early in the morning, see the doctor and get all other services I need so that I can come back to do my work normally'.

On the other hand, the ART providers described the following factors as being important determinants of the waiting time for PLWHA to receive care: (1) the type and number of services needed by the PLWHA; (2) the number of provider(s) available for the service(s) on that day; (3) the number of PLWHA requiring the service(s); (4) the time the PLWHA reported to the clinic; and (5) whether the PLWHA were new or follow-up patients. The providers indicated, for example, that if the PLWHA came to the centre for two or more different types of services, including seeing the doctor and going to the laboratory, then all things being equal, they would spend a much longer time than those reporting to the centre for specific services available only on that day; adherence counselling in preparation for initiating ART and refilling the monthly prescription for ARVs at the pharmacy were examples provided for the latter type of services. For those requiring more services during their clinic visit, the providers described waiting times ranging from 2 to 8 h depending on the combination of the factors listed above, and hence corroborated the waiting times reported by the PLWHA.

It was reported by the ART providers that in an effort to minimize their waiting time, some of the PLWHA had developed the practice of arriving very early to the clinic, sometimes as early as 4.00 am. This had compelled the HIV/AIDS clinic to start operating as early as 6–6:30 a.m. in some centres, as one of the providers explained by saying that

...this is even one of the reasons why we start the clinic as early as 6:00 a.m. because we realized that patients were coming at 4:00 a.m. and therefore instead of starting at 8:00 a.m., we had to start earlier and some as they got better, would like to come for their drugs and go back to work. So we are also trying to accommodate some of these things, it's outside the norm, but we are doing our best to live with some of these challenges.

Some providers thought that the PLWHA were not worried about the waiting time if there was no 'jumping' of the queue as explained by one provider:

For receiving care, they have to wait because they are coming from far, some come very early in the morning even before the clinic has started. Then when the clinic starts we have to take their vital signs and all that, we do it first come, first served. Sometimes they might have come in at short intervals but then when they go to see the doctor it takes longer so they can wait for quite some time. Fine, at times it can take quite some time but presently they don't really see it as a problem, but if somebody has to pass them, then they get really angry, but when it goes according to the line, systematically, then they know that this one goes next and so on, so they don't worry too much. There's nothing much we can do about it, I think they understand if we do it systematically.

Others responded that some of the PLWHA, especially those new to the programme and therefore not used to the long waiting times, were the ones more likely to get frustrated about the waiting time than those accustomed to the system. One provider explained this by saying that

Yes like I told you, clinic starts at 6:30–7:00 a.m. sharp and those who want to be seen early come early but at times, one clinician, at times two clinicians, so some patients are sometimes frustrated especially the new ones, those who are like new entrants, they are frustrated about waiting time and those things. But they also tend to appreciate the fact that there's only one doctor sitting down there and from morning he hasn't eaten and all that and you can't ask too much, you know. With time, they tend to understand and so they don't complain so much. Patients are satisfied with the quality of services, majority are satisfied. Those who really have problems are the new ones and some of them are kind of stressed out before coming, so the least thing, they are angry and complaining and all that, but they are in the minority and we still hope that with time, they will really understand what the issues are. So it's quite challenging.

PROPOSITION 4: There is no special provision, with respect to the waiting time, for PLWHA who are workers in the formal sector.

With respect to the availability of any special provision for workers in the formal sector regarding waiting time to receive care, one PLWHA, who was a teacher, explained that

That one is available; there is that provision. Workers are here, so you come and you are a teacher, they attend to you first so that you can go to school.

However, another PLWHA in a second ART centre had said that

No, there's no such thing like that here. You have to join the queue. Sometimes even when a nurse calls you, the others would be talking, so you just have to wait for your turn.

Similarly, when asked about any special provision, with respect to the waiting time for PLWHA working in the formal sector, the responses of the healthcare providers did not point to any consistent pattern or practice; there was variability between different services within the same ART facility and across facilities. One ART healthcare provider summed up the availability of special provision, with respect to the waiting time, by saying that

Like children when they come, they want to be seen before others, i.e. those who are school-going so we just see them and they go. We also give some priority to teachers and the like but it has to be a dialogue, it has to be a dialogue because nobody is above anybody; so even when we want to do that, we try to explain to the other clients the reason why we want to call some people. We give priority to the sick, those who are very sick and so that is it. I think, for now, we give priority to healthcare workers too; we give priority to children who are going to school and also to teachers.

For now, we haven't expanded it as yet but with time, we would look at it. The fact is, come early and you are seen early and you go home.

Another provider explained a strategy that was being used to make the services more convenient to formally employed PLWHA by saying that

Yes, we've had problems; we've had people who want to go to work, they come and our clinics are heavy. So sometimes our nurses are able to identify people who are especially salaried workers who want to go back to work, so we quickly see them; but it is not easy, because we are having more and more of salaried workers so who are you going to see first? So at the end of the day, you have to see a lot of them and it takes similar hours to finish, so it is a problem. What is happening is that some of them when we see that they are able and stable on the drugs, instead of giving them two months, we've started giving some of them three months of medication to take away, especially if they are on a regimen that does not need refrigeration-specific weather or temperature requirements, then we allow the patients to take three months of drugs home. So that is helping but we are having difficulty and it's not only salaried workers or people with white-collar jobs but the market women also.

Other innovations to make the services more convenient to the PLWHA were described by other providers. In one ART centre, for example, one provider reported that because the market day for the area was on Saturdays, the ART clinic had decided to open for services on Saturdays instead of Fridays. This provision ensured that PLWHA who were traders received their counselling services at the clinic without sacrificing their daily income. In this same ART centre, counselling services for workers in the formal sector were scheduled for Saturday mornings so that the traders could have theirs in the afternoons.

PROPOSITION 5: PLWHA do not see the same provider for the different services they need at each clinic visit.

Only 2 of the 20 PLWHA interviewed said that they saw the same provider at each clinic visit, both were accessing ART services from St Martin Hospital, Agomanya.

The responses of the remaining 18 PLWHA supported the proposition by indicating that they saw different providers, although only 2 of these 18 expressed some concern with this. One of the two concerned PLWHA said that

It's because you have developed a certain kind of relationship with the doctor who initially took care of you since he will get to know everything about you. It is not always easy to face another doctor who doesn't know anything about you. This may mean that you have to go over everything all over again. Again, you may not know how this new doctor would react to your jokes or your specific problems, so you may tend to keep them to yourself instead of telling him all your problems. Again, every doctor has his way of working

therefore the new doctor might not follow the plan of the other doctor.

The following quote typifies the responses of the majority (16) of the PLWHA who were not concerned with the potential for the lack of continuity of their care even though they did not see the same providers at all times:

No, I'm not bothered because they know their job and they have been trained to take care of us. Any doctor you see will look at what the previous doctor has written in your folder so that he continues your treatment from there.

Concerning the continuity of care, the providers responded that PLWHA were not routinely seen by the same doctor, counsellor, or healthcare provider, unless a provider and/or PLWHA specifically requested this on special grounds. However, the providers explained that continuity of care was ensured through detailed case notes. The case notes provided all the information needed by any healthcare provider to continue the patient-specific care from where the preceding provider had left off. Besides this, at every ART centre, ART services were provided by a multi-disciplinary team of healthcare providers and, over time, all PLWHA accessing ART at that centre would get to know the team members. Most importantly, the providers reported that the PLWHA were fully informed and educated about these arrangements during their initial access to care, including ART.

One healthcare provider explained this by saying that

We make the patients aware that 'all of us have been trained; there are just personal differences, maybe human approach, but every doctor is competent enough to handle you. So if I see you on this particular clinic day, unless I request that I really want to continue with what I'm doing with you, another provider can see you and do just what has to be done for you.' So they are seen by a team. Some patients would say 'No, I want you to see me', so if you don't have a lot of cases to see that day, you just accept, because the patients think they are familiar with a particular doctor. Some will give you genuine reasons for wanting that particular doctor, so once they want a particular doctor to see them, they allow that particular doctor to see them.

Another provider, a pharmacist, confirmed this by saying that

No, they see different pharmacists because there's no permanent pharmacist on this programme except one. So you have the pharmacists doing their previous schedules already. So we came up with this schedule where today you are on duty in the counseling room so you leave whatever you are doing and come here to do it. So we make the patients aware from the beginning that, 'I'm attending to you today, maybe the next time you come, I might not be the same person you see.' So we write notes so that the next pharmacist can just pick up from where the previous pharmacist left off.

Study findings on the convenience of accessing antiretroviral therapy (ART) in Ghana have been summarized in Table 2.

Table 2. Summary of the responses given by PLWHA to the study question: a priori propositions 1–5.

Propositions and summary of the responses	Unexpected emergent themes
<p><i>Proposition 1:</i> PLWHA travel long distances to receive ART services</p> <p>Supported = 6; not supported = 14</p>	<p>For personal reasons, including stigma, some PLWHA prefer to access ART far from home</p>
<p><i>Proposition 2:</i> The multiple clinic visits required for initiating and monitoring ART are inconvenient for PLWHA</p> <p>Supported = 2; not supported = 18</p>	<p>The requirement for an Adherence Monitor before initiating ART is perceived as more of an inconvenience than the number of clinic visits</p>
<p><i>Proposition 3:</i> PLWHA spend too much time waiting for the needed services at each clinic visit</p> <p>Supported = 3; not supported = 16; other (not applicable) = 1</p>	
<p><i>Proposition 4:</i> There is no special provision, with respect to the waiting time, for PLWHA who are in active employment</p> <p>Supported = 2; not supported = 1; other (not applicable) = 17</p>	<p>There is some provision for selected workers such as teachers and health workers, but this is not consistently applied in all the centres</p>
<p><i>Proposition 5:</i> PLWHA do not see the same provider for the different services they need at each clinic visit</p> <p>Supported = 18; not supported = 2</p>	<p>PLWHA are not worried that they do not see the same provider because (1) they believe that all the providers have been trained to take care of them; (2) they believe that all the providers take good care of them; (3) they know the members of the team of providers; and (4) they have been assured that continuity will not be lost</p>

Discussion

Convenience and cost of accessing care by PLWHA in sub-Saharan Africa have been identified as important challenges to long-term adherence to ART (Hardon *et al.* 2007). The participants in a study conducted in Botswana, Tanzania, and Uganda identified transportation costs, registration and user fees, and wage losses because of long waiting times to receive care, among others, as major obstacles to accessing care and optimal adherence to ART after initial access (Hardon *et al.* 2007). Lack of money for transport and food, housing, and inability to get out of work have also been reported as important barriers to accessing ART in the USA (Cunningham, Andersen, Katz, Stein, Turner, Crystal, *et al.* 1999).

This study set out to examine the convenience of accessing ART from the perspective of PLWHA receiving ART in Ghana; the

perspectives and experiences of ART healthcare providers, with respect to the convenience of accessing ART by PLWHA, were also elicited. Convenience of accessing care was evaluated by the PLWHA's perception of travelling distance (travelling time used as a proxy measure), frequency of required clinic visits, waiting time to receive care, preferential treatment for formal workers with respect to the waiting time, and seeing the same providers (continuity of care).

Thirty percent of the PLWHA respondents travelled for 2–12 h to access ART. The primary reason was the limited number (four) of ART centres, mainly located in the southern and middle belts of the country, operating at the time of the study. People requiring ART services had no choice then but to travel such long distances and at great cost to access care and remain in care. However, the responses of some of the providers indicated that some of the PLWHA actually chose to access care far away from their town or city of residence because of HIV/AIDS-related stigma. HIV/AIDS-associated stigma is still high and is an important barrier to accessing and adherence to ART in both developed and developing countries (Mills, Nachega, Bangsberg, Singh, Rachlis, Wu, *et al.* 2006). Contextual targeted interventions to address this stigma are, therefore, urgently required in the global fight against HIV/AIDS.

Multiple clinic visits were reported, at least three for ART adherence counselling and other preparation before initiation of therapy, and subsequently for monitoring purposes. However, only two of the PLWHA study participants perceived this to be an inconvenience. Of greater inconvenience, however, for these two were the requirement for PLWHA to disclose their HIV-positive status to a close relative or friend and to send him/her to the clinic as their 'Adherence Monitor'. Fear of disclosure is an offshoot of HIV-related stigma.

However, the reportedly high rate of 'forgetfulness', depression, stress, and ART regimen complexity related to non-optimal adherence, even in developed countries, make a case for the necessity for a supporter at home, especially during the early stages of initiating ART in developing country settings (Mills *et al.* 2006; Simoni, Frick, Lockhart & Liebovitz 2002; Tuldra & Wu 2002). Community health workers, known as 'accompagnateurs', have been used with great success to promote access to care and support ART adherence in rural Haiti (Koenig *et al.* 2004; Koenig, Ivers, Pace, Destine, Leandre, Grandpierre, *et al.* 2010). Similarly, many national ART programmes in Africa require client disclosure of their HIV-positive status and an Adherence Monitor or 'treatment buddy' before the initiation of ART; this requirement is, therefore, not limited to the ART programme in Ghana (Hardon *et al.* 2007; Mshana *et al.* 2006). There is the need, however, to revisit this policy to allow providers the flexibility to make any necessary adjustments as needed on a case-by-case basis.

Long waiting times to receive care and the associated risk of wage losses have been reported as barriers to accessing ART and ART adherence in Africa (Hardon *et al.* 2007; Mshana *et al.* 2006). In the USA, inability to get time out of work, among others, has led to some PLWHA postponing accessing care or going without it

(Cunningham *et al.* 1999). There is no literature documentation of workers being given preferential treatment, with respect to the waiting time to receive ART services, and we did not find any consistency with this practice among the ART centres studied in Ghana.

The long waiting times were in part due to the limited ART centres and providers at the time of the study. Since then, ART centres have been established in all regional and district hospitals, and there is even a push towards further expansion to the sub-district level within the GHS. Therefore, it is expected that there would be very drastic reductions in waiting times in the country. However, the latter expectation may not be realized if these centres are working under health manpower constraints due to the frequent manpower turn over and migration reported in Africa (Hagopian, Thompson, Fordyce, Johnson & Hart 2004).

It is notable that 60% of the PLWHA interviewed were not working because of HIV/AIDS-related morbidity. This calls for efforts to promote early HIV diagnosis and access to care, including ART, so as to prevent or minimize the productivity losses associated with late presentation.

Seeing the same provider did not appear to be that important to the PLWHA interviewed, which was also confirmed by the ART providers, because the patients were assured of the continuity of their care, irrespective of the personalities involved in their care. This is a pointer to an underlying relationship with the providers, which will be reported in another article. This confirms earlier studies that what is important in access and adherence to the needed care and patient satisfaction is the provider–patient relationship which makes shared decision-making possible (Beach, Duggan & Moore 2007; Demmer 2003; Fuertes, Mislowack, Bennett, Paul, Gilbert, Fontan, *et al.* 2007).

Conclusion

PLWHA respondents of this study appeared to have an understanding of the circumstances under which they were accessing ART, although they were far from convenient for them, according to the measures of convenience used in the study. Acceptability of care, assessed from the provider–patient relationships, the quality of information provided to the PLWHA, the confidentiality of the care environment, and the overall assessment of the quality of care received, may explain the PLWHA's apparent lack of concern for the degree of convenience of accessing ART. Acceptability of care, which was also studied as a component of the comprehensive study of factors related to accessing ART in Ghana, and which will be reported in another article, may throw further light on these findings.

It is important to note the similarities between the responses of the PLWHA and their ART healthcare providers, as reported in this study. This finding is striking and noteworthy because differences between the perceptions of patients and their providers on a wide range of care-related issues have been reported by others (Boyer, François, Doutre, Weil & Laberere 2006; Laine, Davidoff, Lewis, Nelson, Nelson, Kessler, *et al.* 1996). These patient and provider differences in care-related perceptions have frequently been associated with low patient satisfaction with care. Thus,

this corroboration or agreement between the providers' and PLWHA's perceptions of the convenience of accessing ART by PLWHA adds to the value and robustness of the study findings.

This study has a number of limitations, including the relatively small sample size. However, as a qualitative study, in-depth interviews of information-rich key informants, PLWHA accessing ART, and their care providers, provide the depth of perceptive and experiences with the concepts being studied, thus compensating for the breadth that we get from the relatively larger sample size involved in quantitative studies.

Besides this, with the nation-wide expansion of the ART programme in Ghana with private sector involvement and the resultant increases in the numbers of PLWHA accessing ART, the study findings may not reflect the realities on the ground as of today. There is the need, therefore, to replicate this study in Ghana to identify important perception changes related to the convenience of accessing ART over time which may need attention.

Important follow-up studies of the ART programme in Ghana will include the examination of the determinants of ART adherence and to test whether there are significant differences between centres or between the public and private health sectors.

This study can be replicated in other settings to examine any contextual differences which can be applied to the ART programmes to promote access and long-term adherence to ART in those settings.

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References

- Aday, L. & Andersen, R.M. (1974). A framework for the study of access to medical care. *Health Services Research*, 9(3), 208–220.
- Aday, L. & Andersen, R. (1981). Equity of access to medical care: a conceptual and empirical overview. *Medical Care*, 19(12), 4–27.
- Addo-Atuah, J., Gourley, D., Gourley, G., White-Means, S., Womeodu, R. & Faris, R. (2008). Access to Antiretroviral Therapy (ART) in Ghana: Factors Relating to Access. Doctoral Dissertation, University of Tennessee Health Science Center, Memphis, TN.
- Alcorn, K. (2006). Clinton Foundation Secures Price Cuts for Efavirenz, Abacavir and Rapid HIV Tests. <http://www.aidsmap.com/print/Clinton-Foundation-Secures-price-cuts-for-efavirenz-abacavir-and-rapid-HIV-tests/page/1422734> (Accessed 29 April 2011).
- Alcorn, K. (2007). Abbott Offers Price Cut to Thwart Thai Compulsory License on Kaletra. <http://www.aidsmap.com/en/page/1426260> (Accessed 29 April 2011).
- Andersen, R., McCutcheon, A., Aday, L., Chiu, Y., & Bell, R. (1983). Exploring dimensions of access to medical care. *Health Services Research*, 18(1), 49–74.
- Beach, M.C., Duggan, P.S., & Moore, R.D. (2007). Is patients' preferred involvement in health decisions related to outcomes for patients with HIV? *Journal of General Internal Medicine*, 22(8), 1119–1124.
- Bill & Melinda Gates Foundation (2010). About the Foundation. <http://www.gatesfoundation.org/about/Pages/overview.aspx> (Accessed 10 December 2010).

- Boyer, L., Francois, P., Doutre, E., Weil, G., & Labarere, J. (2006). Perception and use of the results of patient satisfaction surveys by care providers in a French teaching hospital. *International Journal for Quality in Health Care*, 18(5), 359–364.
- Cunningham, W.E., Andersen, R.M., Katz, M.H., Stein, M.D., Turner, B.J., Crystal, S., et al. (1999). The impact of competing subsistence needs and barriers on access to medical care for persons with human immunodeficiency virus receiving care in the United States. *Medical Care*, 37(12), 1270–1281.
- Demmer, C. (2003). Relationship with health care provider and adherence to HIV medications. *Psychological Reports*, 93(2), 494–496.
- Djomand, G., Roels, T., Ellerbrock, T., Hanson, D., Diomande, F., Monga, B., et al. (2003). Virologic and immunologic outcomes and programmatic challenges of an antiretroviral treatment pilot project in Abidjan, Cote d'Ivoire. *AIDS*, 17(Suppl. 3), S5–S15.
- Ernest, P. (1994). *An Introduction to Research Methodology and Paradigms*. Exeter, Devon, RSU, University of Exeter.
- Etard, J.F., Ndiaye, I., Thierry-Mieg, M., Gueye, N.F., Gueye, P.M., Laniece, I., et al. (2006). Mortality and causes of death in adults receiving highly active antiretroviral therapy in Senegal: a 7-year cohort study. *AIDS*, 20(8), 1181–1189.
- Fuertes, J.N., Mislowack, A., Bennett, J., Paul, L., Gilbert, T.C., Fontan, G., et al. (2007). The physician–patient working alliance. *Patient Education and Counseling*, 66(1), 29–36.
- Ghana Health Service (2012). Organizational Structure. <http://www.ghanahealthservice.org/aboutus.php?info=Organisational%20structure> (Accessed 8 March 2012).
- Hagopian, A., Thompson, M.J., Fordyce, M., Johnson, J.E., & Hart, L.G. (2004). The migration of physicians from sub-Saharan Africa to the United States of America: measures of the African brain drain. *Human Resources for Health*, 2, 17.
- Hardon, A.P., Akurut, D., Comoro, C., Ekezie, C., Irunde, H.F., Gerrits, T., et al. (2007). Hunger, waiting time and transport costs: time to confront challenges to ART adherence in Africa. *AIDS Care*, 19(5), 658–665.
- Hongoro, C. & McPake, B. (2004). How to bridge the gap in human resources for health. *Lancet*, 364(9443), 1451–1456.
- Keiser, P., Nassar, N., Kvanli, M.B., Turner, D., Smith, J.W., & Skiest, D. (2001). Long-term impact of highly active antiretroviral therapy on HIV-related health care costs. *Journal of Acquired Immune Deficiency Syndromes*, 27(1), 14–19.
- Kober, K. & Van Damme, W. (2004). Scaling up access to antiretroviral treatment in southern Africa: Who will do the job? *Lancet*, 364(9428), 103–107.
- Koenig, S.P., Ivers, L.C., Pace, S., Destine, R., Leandre, F., Grandpierre, R., et al. (2010). Successes and challenges of HIV treatment programs in Haiti in the aftermath of the earthquake. *HIV Therapy*, 4(2), 145–160.
- Koenig, S.P., Leandre, F., & Farmer, P.E. (2004). Scaling-up HIV treatment programmes in resource-limited settings: the rural Haiti experience. *AIDS*, 18(Suppl. 3), S21–S25.
- Komfo Anokye Teaching Hospital (2010). KATH Annual Report 2009. <http://www.kathsp.org/Downloads/KATHANNUALREPORT2009.pdf> (Accessed 7 March 2012).
- Korle Bu Teaching Hospital (2012). About Us. Available at: <http://kbth.gov.gh/pages/about/php> (Accessed 3 April 2012).
- Laine, C., Davidoff, F., Lewis, C.E., Nelson, E.C., Nelson, E., Kessler, R.C., et al. (1996). Important elements of outpatient care: comparison of patients' and physicians' opinions. *Annals of Internal Medicine*, 125(8), 640–645.
- Laurent, C., Diakhate, N., Gueye, N.F., Toure, M.A., Sow, P.S., Faye, M.A., et al. (2002). The Senegalese government's highly active antiretroviral therapy initiative: an 18-month follow-up study. *AIDS*, 16(10), 1363–1370.
- Libamba, E., Makombe, S., Mhango, E., de Ascurra, T.O., Limbambala, E., Schouten, E.J., et al. (2006). Supervision, monitoring and evaluation of nationwide scale-up of antiretroviral therapy in Malawi. *Bulletin of the World Health Organization*, 84(4), 320–326.
- McCoy, D., Chopra, M., Loewenson, R., Aitken, J.M., Ngulube, T., Muula, A., et al. (2005). Expanding access to antiretroviral therapy in sub-Saharan Africa: avoiding the pitfalls and dangers, capitalizing on the opportunities. *American Journal of Public Health*, 95(1), 18–22.
- Messeri, P., Lee, G., Abramson, D., Aidala, A., Chiasson, M., & Jessop, D. (2003). Antiretroviral therapy and declining AIDS mortality in New York City. *Medical Care*, 41(4), 512–521.
- Mills, E.J., Nachege, J.B., Bangsberg, D.R., Singh, S., Rachlis, B., Wu, P., et al. (2006). Adherence to HAART: a systematic review of developed and developing nation patient-reported barriers and facilitators. *PLoS Medicine*, 3(11), e438.
- Ministry of Health/Ghana Health Service (2002). *Guidelines for Antiretroviral Therapy in Ghana*. Accra, Acts Commercials Ltd.
- Mshana, G.H., Wamoyi, J., Busza, J., Zaba, B., Chagalucha, J., Kaluvya, S., et al. (2006). Barriers to accessing antiretroviral therapy in Kisesa, Tanzania: a qualitative study of early rural referrals to the national program. *AIDS Patient Care and STDS*, 20(9), 649–657.
- Muula, A.S. (2004). Ethical and programmatic challenges in antiretroviral scaling-up in Malawi: challenges in meeting the World Health Organization's 'Treating 3 million by 2005' initiative goals. *Croatian Medical Journal*, 45(4), 415–421.
- Nachege, J. (2002). Antiretroviral Treatment in Developing Countries. <http://www.impactaids.org.uk/HIVreport1.htm> (Accessed 10 December 2010).
- National AIDS/STI Control Programme (NACP) (2003). Ghana initiates antiretroviral therapy program. *NACP Bulletin*, 1(2), 1 & 6.
- National AIDS/STI Control Programme (2010). NACP 2009 Annual Report, National AIDS/STI Control Programme, Accra.
- Nyakutsey, B. W. K. & Nubuasah, A. (2010). St. Martin de Porres Hospital-Agomanya, E/R. Hospital Profile. http://stmartinhospital.org/reports/news_letter/Hospital%20Profile.pdf (Accessed 7 March 2012).
- Patton, M.Q. (2002). *Qualitative Research & Evaluation Methods* (3rd ed.). Thousand Oaks, CA, Sage Publications Inc.
- ResearchWare, Inc. (1988). *HyperRESEARCH*. Qualitative Analysis Tool, Randolph, MA. <http://www.researchware.com/products/hyperresearch.html> (Accessed 29 April 2011).
- Reuters (2007). Merck Cuts Price on AIDS Drug Efavirenz. www.aegis.com/news/re/2007/RE070230.html (Accessed 10 December 2010).
- Ritzenthaler, R. (2005). Delivering Antiretroviral Therapy in Resource-Constrained Settings: Lessons from Ghana, Kenya and Rwanda. http://www.fhi360.org/en/HIVAIDS/pub/res_Delivering+ART.htm (Accessed 8 March 2012).
- van Sighem, A.I., van de Wiel, M.A., Ghani, A.C., Jambroes, M., Reiss, P., Gysens, I.C., et al. (2003). Mortality and progression to AIDS after starting highly active antiretroviral therapy. *AIDS*, 17(15), 2227–2236.
- Simoni, J.M., Frick, P.A., Lockhart, D., & Liebovitz, D. (2002). Mediators of social support and antiretroviral adherence among an indigent population in New York City. *AIDS Patient Care and STDs*, 16(9), 431–439.
- The Global Fund (2010). The Framework Document of the Global Fund to Fight AIDS, Tuberculosis and Malaria. http://www.theglobalfund.org/TGF_Framework.pdf (Accessed 10 December 2010).
- The United States President Emergency Plan for AIDS Relief (PEPFAR) (2010). About PEPFAR. <http://www.pepfar.gov/about/index.htm> (Accessed 10 December 2010).
- Tuldra, A. & Wu, A.W. (2002). Interventions to improve adherence to antiretroviral therapy. *Journal of Acquired Immune Deficiency Syndrome*, 31(Suppl. 3), S154–S157.
- Weidle, P.J., Malamba, S., Mwebaze, R., Sozi, C., Rukundo, G., Downing, R., et al. (2002). Assessment of a pilot antiretroviral drug therapy programme in Uganda: patients' response, survival, and drug resistance. *Lancet*, 360(9326), 34–40.
- World Health Organization (2003). The 3 by 5 Initiative. <http://www.who.int/3by5/en> (Accessed 10 December 2010).
- Yin, R. (2003). *Case Study Research: Design and Methods* (3rd ed.). Thousand Oaks, CA, Sage Publications Inc.
- Zucker, D. M. (2001). Using case study methodology in nursing research. *The Qualitative Report* [online serial], 6(2). <http://www.nova.edu/SSSS/QR/QR6-2/zucker.html> (Accessed 8 March 2012).