International Journal of Africa Nursing Sciences 18 (2023) 100532

Contents lists available at ScienceDirect

International Journal of Africa Nursing Sciences

journal homepage: www.elsevier.com/locate/ijans

A qualitative analysis of factors influencing healthcare providers' behaviour toward persons living with HIV in Ghana

Martha Ali Abdulai [a,b,*], Fraukje E.F. Mevissen [b,c], Annika Kramer [b], Zoey Boitelet [b], Kwaku Poku Asante [a], Seth Owusu-Agyei [a,d], Robert A.C. Ruiter [b], Arjan E.R. Bos [e]

[a] Kintampo Health Research Centre, Research and Development Division, Ghana Health Service, P.O Box, 200, Kintampo North Municipality, Bono East Region, Ghana
[b] Department of Work and Social Psychology, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands
[c] Municipal Public Health Service Rotterdam-Rijnmond, Department of Public Health, Rotterdam, The Netherlands
[d] Institute of Health Research, University of Health and Allied Sciences, PMB 31, Ho, Ghana
[e] Open University, Faculty of Psychology, PO Box 2960, 6401DL Heerlen, The Netherlands

ARTICLE INFO

Keywords:
Factors
Healthcare providers
Behaviour
HIV
Qualitative analysis

ABSTRACT

Background: A positive relationship between a healthcare provider (HCP) and a patient is likely to build trust and improve care for People Living with HIV (PLWH). The study explored the individual and external factors influencing HCP behaviour towards PLWH and compares HCP in antiretroviral therapy clinics (AHCP) with general health care settings HCP (GHCP).

Methods: This qualitative study used a semi-structured interview protocol to guide individual in-depth interviews among 33 HCPs. The interview protocol was informed by empirical literature and included topics such as perceptions and experiences working with PLWH, HIV-related training received, knowledge about HIV, emotions towards PLWH and support related to patient care. The interview data were thematically analysed.

Results: Both AHCP and GHCP claimed that their thoughts and judgments never influenced the way they managed PLWH, but there appears to be reflections of either sympathy or positive discrimination, especially for AHCP, or stigmatizing behaviours such as using gloves for PLWH-only among GHCP. The findings from this study suggest that individual factors such as perceptions about HIV, attitude towards HIV patients, different emotions, HIV-related training received and external factors such as availability of guidelines, logistics, infrastructural and reimbursement challenges influenced HCP behaviour towards PLWH.

Conclusion: The study suggests that individual and external factors influence AHCP and GHCP behaviour towards PLWH. We recommend the use of Intervention Mapping to develop and evaluate interventions addressing the behaviour and emotions of AHCPs and GHCPs to reduce stigmatization of PLWH in the healthcare sector, hence improving hospital visits and medication adherence.

1. Introduction

Globally, 37.6 million people were living with HIV in 2020 with about 27.4 million accessing antiretroviral treatment (UNAIDS, 2020). Persons Living with HIV (PLWH) need to adhere to antiretroviral medications to achieve maximum viral suppression (Haas et al., 2016). A systematic review and *meta*-analysis of antiretroviral adherence in Sub-Saharan Africa reports an adherence score of 72.9 % (Heestermans et al., 2016). Adherence levels of 60 % to 80 % have been reported in Ghana (Obirikorang, Selleh, Abledu, & Fofie, 2013), which is below the optimal adherence of 95 % to 100 % (Heestermans et al., 2016, Mills et al., 2006).

Evidence suggests that the patient- health care provider relationship is key to treatment adherence (Campbell et al., 2015; Pharmacy et al., 2021). A health care provider (HCP) is expected to undertake activities that contribute to health promotion or prevent illness, among which assessment and diagnosis of illnesses, provision of treatments, managing health conditions and the healthcare system, and building therapeutic alliances (Patey et al., 2022). For example, in building therapeutic alliances HCP supports patients to manage their conditions both cognitively and emotionally through collaboration, communication, empathy, and respect (Dapaah, 2016; Leventhal et al., 1992, Patey et al.,

* Corresponding author at: Department of Work and Social Psychology, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands.
E-mail address: martha.abdulai@maastrichtuniversity.nl (M. Ali Abdulai).

https://doi.org/10.1016/j.ijans.2023.100532
Received 4 October 2021; Received in revised form 23 November 2022; Accepted 22 January 2023
Available online 24 January 2023

2022). A patient builds a more trusting relationship with a healthcare provider if the quality of their relationship is high. A positive relationship that is built on trust, a common understanding of health-related goals and continuous patient access to care is important for medication adherence (Pharmacy et al., 2021, Kamimura et al., 2020).

When a Health Care Provider (HCP) develops a trustworthy relationship with Persons Living with HIV (PLWH), the PLWH trusts for the medications received from the HCP increases (Birkhäuer et al., 2017) and they are more open to discussing the challenges of antiretroviral therapy (ART) that may otherwise cause them to stop the medication (Archiopoli et al., 2016). A trustworthy HCP-PLWH relationship improves participatory decision-making of PLWH (Archiopoli et al., 2016; Stutterheim, 2014). The literature shows, however, that many PLWH report negative experiences in their interaction with HCP (Atinga, Abekah-Nkrumah, & Domfeh, 2011; Stutterheim et al., 2014). These negative experiences include awkward social interaction, rudeness, differential treatment because of the HIV-positive status, excessive carefulness and double gloving (Abdulai et al., 2021; Stutterheim et al., 2014). These uneasy HCP-PLWH relationships may foster, among others, secrecy about non-adherence to avoid being judged or threatened by an HCP (Campbell et al., 2015; Pharmacy et al., 2021). Some empirical studies among healthcare providers in sub-Saharan Africa and Asia report that between 77 % and 84.3 % of healthcare providers expressed negative attitudes towards PLWH (Hassan & Wahsheh, 2011; Li et al., 2007; Adetoyeje, Oyeyemi, & Bello, 2008). Nonetheless, some studies also report positive experience between PLWH and HCP (Abdulai et al., 2021; Dapaah, 2016; Stutterheim, 2014). Knowing the factors that are associated with either a positive or a negative interaction may help in building interventions that stimulate and improve positive relationship between PLWH and HCP, which in turn motivates adherence, health and well-being of the PLWH.

Several individual and external factors may drive the behaviour of HCP towards PLWH and vice-versa (Abdulai et al., 2021; Ishimaru et al., 2017; Manganye, Maluleke, & Lebese, 2013; Sadob, Fawole, Sadoh, Oladimeji, & Sotiloye, 2006). Some individual factors that may influence HCP behaviour towards PLWH include limited knowledge of and misconceptions about HIV, fear of contagion (Adetoyeje et al., 2008; Boakye & Mavhandu-Mudzusi, 2019), self-efficacy towards PLWH, and stigma (Ishimaru et al., 2017; Manganye et al., 2013; Stutterheim, 2014). Limited knowledge and misconceptions influence HCP's confidence in providing quality services to PLWH. This may inform HCP's unwillingness to care for PLWH or stigmatise PLWH.

Stigma in the healthcare setting is detrimental and contributes to poor health outcomes of patients (Nyblade, Stangl, Weiss, & Ashburn, 2009). A systematic review and *meta*-synthesis of the impact of HIV-related stigma on treatment adherence shows that 71 % of cross-sectional studies and 86 % of longitudinal studies report a positive association between HIV-related stigma and treatment non-adherence (Kalichman, Mathews, Banas, & Kalichman, 2019; Rueda et al., 2016).

Moreover, certain cognitive representations associated with PLWH/HIV may influence HCP behaviour towards PLWH. The cognitive-emotional model (Bos, Schaalma, & Pryor, 2008; Bos et al., 2013) clarifies that HCP's cognitive representations, such as perceived contagiousness of HIV, perceived seriousness of HIV, personal responsibility for HIV and perceived norm-violating behaviour, may influence the emotions of fear, anger and/or pity towards PLWH, which could affect their behaviour towards and treatment of the patient. HCPs who perceive HIV as dangerous may out of fear manifest avoidance (Bos et al., 2013; Stutterheim et al., 2014). A healthcare provider who perceives PLWH to be responsible for their infection may be angered, which may result in treating the patient more aggressively. The perceived severity of HIV may elicit both pity and anger, a state of emotional ambivalence, which may lead to awkward interaction. HIV is associated with different norm-violating behaviours such as homosexuality, IV-drug use and promiscuity. People who have negative attitudes towards these behaviours may show anger towards PLWH and/or develop stigma against them (Bos et al., 2008; Bos et al., 2013).

Apart from the individual factors, external factors may also influence HCP behaviour towards PLWH. These include inadequate support from colleagues or supervisors, inadequate infrastructure and logistics, and unclear guidelines on patient care, treatment and support (Feyissa, Abebe, Girma, & Woldie, 2012; Nyblade et al., 2009). For example, when HCP works in settings that do not provide the right ambience for optimal care, it may lead to poor patient management. Again, if the institution or supervisor does not promptly work on medication stock-outs, it will influence PLWH adherence to medication. A good understanding of the guidelines for treatment and the availability of adequate infrastructure may help the HCP to provide satisfactory and confidential services that ensure privacy to the PLWH.

The contact hypothesis suggests that prejudice and conflict among a group can be reduced if members interact (Pettigrew & Tropp, 2008). Contact approaches that expose HCP to PLWH may help develop empathy, humanize PLWH and break down stereotyping (Nyblade et al., 2019). Furthermore, an HCP who has not attended an HIV-related training may either be unaware of HIV-related policies or may not have the self-efficacy and skills to counsel PLWH to adhere to medication (Cheema, Abbas, & Al-Hamid, 2019). In Ghana, HCP providing direct HIV-related health care services receive extra training on counselling, testing and treatment (Ghana AIDS Commission 2013; Boakye & Mavhandu-Mudzusi, 2019). This training equips HCP with the requisite skills to relate to and treat clients professionally, understand and handle the risks associated with caring for PLWH. As such, HCP in the ART clinics who are knowledgeable about HIV and are in frequent contact with PLWH may have fewer stigmatising behaviours and attitudes. However, HCPs who have inadequate knowledge about HIV, or who have less contact with PLWH, may stigmatise or discriminate against PLWH (Pettigrew & Tropp, 2008). This may partly explain the contradictory findings in literature regarding positive versus negative experiences of PLWH with HCP. Healthcare providers who work intensively with PLWH in the ART clinics will have less stigmatising behaviours towards PLWH because presumably they have satisfactory knowledge, training through seminars/workshops (Boakye & Mavhandu-Mudzusi, 2019) and contact compared to those in the other departments.

The present study explores the individual and external factors influencing HCP behaviour towards PLWH and compares HCPs in ART clinics (AHCP) with those in the other departments (GHCP). We did not only consider individual-level factors to explain differences and similarities in behaviour, but also looked at external factors in the organisational environment, to understand the full perspectives of factors influencing HCPs behaviours towards PLWH.

2. Material and methods

The study methods are guided by the consolidated criteria for reporting qualitative research framework (COREQ).

2.1. Study design

This study employed an exploratory qualitative approach using a semi-structured interview protocol to guide in-depth individual interviews. This qualitative design is deemed appropriate for generating detailed understanding of HCP's experiences, thoughts, and emotions and allows for an interpretation of their actions especially in a context where data is limited. Furthermore, it allows the researcher to react to social cues such as voice, intonation, and body language, which is especially important in this research since it addresses a socially sensible topic (Opdenakker, 2006; Showkat & Parveen, 2017).

2.2. Study setting

The study was conducted in the Bono East Region of Ghana. The region is composed of 11 districts and over 40 health facilities that

provide healthcare services to its residents. Three hospitals that attend to a PLWH-registered population of over 4000 were purposively selected. The strategic locations of the hospitals within the region, the set-up similarities with other hospitals in Ghana and the size and set-up of their ART clinics (stand-alone versus integrated) were considered in the selection of these facilities. To ensure confidentiality, the three hospitals have been anonymised as facilities A, B and C, (details are available with first author upon request).

2.3. Participant recruitment

A heterogeneous group of HCPs (18 years and above) were purposively selected from either ART clinics or the general health care setting that mimic the points of entry of patients from the outpatient departments (OPD), male and female wards, surgical theatres, and labour wards. The heterogeneity of the participants was based on their age, sex and cadre of HCP in either ART clinics (AHCP) or general health care settings (GHCP). Prior to interviewing, the lead author held meetings with the hospital administration to discuss the study protocol and presented a copy of the protocol and a written request for the conduct of the study to the administrator. The administrator subsequently approved the request and sent copies of the approval to the ART clinics and the various departments to inform them of our study. Following this, we met with the in-charges of the ART clinics and the various departments to explain the aim of the study to them. We explained that because of the important role of HCPs in providing care to PLWH, we were interested in seeking their opinions and experiences with service provision for PLWH in ART clinics and the other departments, as well as their ideas on how PLWH deal with HIV and antiretroviral intake. The clinic and departmental in-charges informed their staff whom we subsequently approached to take part in our study, which they readily accepted.

We visited the ART clinics or the other departments once or twice in a week to recruit staff who was available as scheduled. As part of the recruitment, we informed participants about the purpose of the study as described above and their right to leave the study without giving a reason and with no professional or personal consequences. We further emphasized that we protect their confidentiality by anonymizing their responses and assigning unique identification numbers to them, and there is minimal risk for taking part in this study. The participants were invited to share their views, opinions and experiences working with PLWH. HCPs in other departments were told in addition that even though they do not work closely with the patients, they could provide important insights and experiences to the study. Individuals from the various departments who agreed to take part in the interview either did so immediately or scheduled a convenient time for the interview. In total, we approached 40 HCPs of which seven participants declined participation because of their work schedule at the time of the visits. See Table 1 for an overview of the category of the healthcare providers interviewed.

2.4. Research instrument

The interview protocol was semi-structured and guided by a review of the empirical literature and theories that could explain the factors influencing HCP behaviour towards PLWH and the HCP-patient relationship. The interview protocol was structured according to themes such as the participant's personal data, demographics and responsibilities as a healthcare provider. Further, in-depth questions were asked regarding the major themes (see interview protocol). Example we asked individual-level questions on knowledge about HIV, self-efficacy, behaviour and attitude towards PLWH, emotions towards PLWH, risk perception of HIV, personal thoughts, perceptions and experiences working with PLWH. Additionally, we explored external factors on topics such as availability of logistics, work protocols, policies, HIV-related training received and support from institution or supervisors. Where necessary, probes were used to elicit indepth information. All these factors except knowledge about HIV transmission were explored among healthcare providers in both ART clinics and the other departments. This is because; HCP in ART by virtue of working in ART clinic would necessarily be taken through some training on HIV to boost their knowledge (Ghana AIDS Commission 2013). The protocol was pretested among two HCPs (1 AHCP and 1 GHCP). The pretest resulted in minor changes such as rewording of certain questions for clarity.

Table 1
A table showing the number and different healthcare providers in various disciplines interviewed.

Profession	Facility A	Facility B	Facility C	Total
Physician Assistants/Medical Officer	3	4	1	8
Nurses	7	6	6	19
Laboratory technicians/Biochemist	0	1	1	2
Counsellor	0	0	1	1
Pharmacists	1	1	1	3
Total	11	12	10	33

2.5. Data collection procedures

Data were collected from March 2018 to May 2018 for ART healthcare providers. This was followed by further interviews with HCP in other departments in the hospital from April 2019 to May 2019. The first, third and fourth authors conducted the interviews for triangulation to increase the credibility and reliability of the results. The first author is a female PhD student and an experienced qualitative researcher. The interviews were largely conducted by the third and fourth authors who were graduate students from Maastricht University. The researchers gave general information about the study and consented each participant (see participant recruitment) before starting an interview. HCPs were invited to read and sign an informed consent form before starting the in-depth interviews. The duration of each interview was between 30 min and 60 min. Saturation was reached with the 31st interview. Two more interviews were conducted after which recruitment ended because no new and distinct themes emerged. All the interviews were audio-recorded and held in English except one because of the participant's preference for Twi (a local dialect). The recordings were transcribed verbatim and translated into English (the one in Twi). The interviews were conducted in consulting rooms within the hospitals.

2.6. Data management and analysis

Thematic data analysis was used to analyse qualitative data. The data analysis processes followed the thematic approach proposed by Castleberry and Nolen, 2018. The first author transcribed the audio recordings verbatim. The transcripts were re-read for familiarity, accuracy and completeness. The data was imported into Atlas Ti software version 8 and analysed by the first, second, and last authors. Six transcripts were systematically coded by the second and last authors (three each), after which, the codes were organised into possible themes. The authors in a series of meetings discussed these themes until agreement was reached on the final themes. The first author generated reports for each thematic category. The second author where necessary reviewed the reports for refining, combining or recoding where needed. We added other emerging themes that were peculiar to some transcripts. All categorised themes were summarised.

2.7. Rigor

We pretested the interview guide among two AHCPs and GHCPs each to determine if respondents understand the questions and elicit responses that answer the research question. A good description of the study setting and procedures was done to ensure the transferability of study findings. We also kept field notes and audio records to guarantee

confirmability. To ensure dependability, we provided a thorough description of the research methodology including the participant recruitment process, data collection procedure and data analysis methods.

2.8. Ethics statement

Ethical approvals for this study were obtained from the Institutional Ethics Committee (IEC) of the Kintampo Health Research Centre (FWA00011103) and the Ethical Review Committee Psychology and Neuroscience at Maastricht University (ECP_04_09_2012_S22) in 2017.

3. Results

First, we report on the participants' characteristics, the three main themes namely healthcare provider's behavior towards PLWH, individual and external factors influencing HCP behaviour towards PLWH. This will be followed by nine sub-themes including knowledge about HIV transmission, perceived responsibility, attitude of HCP towards PLWH, emotions, self-efficacy and skills towards PLWH care, training on HIV and PLWH care, availability of guidelines for patient care, logistics and resource availability, and supervision support.

We also report on the combined results of healthcare providers in antiretroviral clinic (AHCP) and those in the other departments HCP (GHCP). All-important differences emerging between these two groups are highlighted.

3.1. Participants characteristics

Thirty-three respondents (made up of 17 males and 16 females took part in the study. Thirteen, twelve and eight HCPs were recruited from hospitals A, B and C respectively. Of the thirty-three participants, twenty worked in ART clinics and thirteen in the other departments. The participants' ages ranged between 26 years and 57 years ($M = 37.1$, $SD = 8.1$, median = 35). Most of the participants were Christians (94 % Christian) and 6 % Muslim. Majority of participants were married (67 %). The number of years HCPs from the other departments had worked ranged from 2 months up to 35 years. Those in ART clinics had been working at the ART clinic for 2 months up to 10 years. The majority (75 %) of the participants had received some training on HIV transmission. At the time of the study, hospital A had finished training most staff on anti-stigmatization of patients.

3.2. Healthcare providers' behaviour towards PLWH

Both AHCP and GHCP said that their thoughts or judgments never influenced the way they manage PLWH. In-between the lines, however, there seemed to be reflections of either sympathy/positive discrimination especially for AHCP (e.g. treating them a bit too special) or negative discrimination (being extremely careful).

One AHCP stated; "*We always should be careful but you cannot avoid responding differently" (32-year old male physician assistant)*

"….when we detect that you have HIV, then your case becomes a bit special for us, because of the stigmatization and other things. We do not want the general rules to apply to you, so in your case you are isolated. We select you from the group, and then we treat you specially" (37-year old male pharmacist)

During the interviews, AHCPs were more inclined to reporting negative behaviours of their colleagues such as free charting (guessing health vitals without actively assessing patient):

"Some of the nurses' resort to free charting because they would not want to get close. They would not get close to the patient" (32-year old male nurse)

Some GHCP, in their responses confirmed this assertion to be true. Some of them revealed that they sometimes get angry with patients, provide inadequate care, completely avoid providing care or deliberately delay the care they need: Nevertheless, they stressed that they exhibited some negative behaviours in the past only (before receiving HIV training); this included refusing to set IV lines for PLWH, "unnecessary and double gloving", and avoiding PLWH.

"Sometimes when you are on duty with other colleagues, you intentionally avoid the PLWH and ask others colleagues to go and attend to him or her" (34-year old male nurse)

A few GHCPs said that they could be laxed about some safety protocols when dealing with non-PLWH but they will always remember to apply these protocols for a PLWH.

"When you are going to give the IV injection to a pregnant woman who has delivered through Caesarean section, sometimes you will go without wearing gloves. Nevertheless, "when it comes to them [PLWH] we have to wear it. Sometimes, there is a bit of discrimination when you wear it……" (35-year old female midwife)

"We wash hands after attending to all patients but once you know this person is positive, you are tempted to wash your hands immediately after attending to him or her than any other patient" (33-year old female midwife)

In order to be able to identify a PLWH, some GHCP said they label PLWH patient folders by writing a code that is "supposedly" decoded by HCP only.

When the mother is HIV positive we have a column where we write a certain number. So [when I see this number] I get two know this woman is reactive (HIV positive)" (34-year old male nurse)

3.3. Individual factors influencing health care provider's behaviour

3.3.1. Knowledge about HIV transmission

Generally, GHCP had basic knowledge about HIV transmission. They stated that unprotected sexual intercourse, commercial sex works, blood transfusion, use of unsterile sharps were the main routes of infection albeit not the only route.

These notwithstanding some misconceptions about the routes of transmission were noted, with one GHCP who said HIV could be transmitted through sharing toothbrush and kissing.

…. It can be contracted through sexual intercourse, deep kissing, sharing of toothbrush" (32-year old male nurse)

AHCP observed that PLWH, mainly the youth, are lured into sexual activities sometimes due to poverty. AHCP conveyed that over the years, awareness creation on HIV in Ghana has reduced across the media space, which has perpetuated stigma around HIV.

….in Ghana, at first, the [HIV] awareness creation was so high. Everywhere you go there was this awareness on television, radio stations, mobile vans announcing to people that there is this condition [HIV] 'please protect yourself, do that and that and that'. Nowadays, that awareness creation has come down. It is no more. They are not doing it the way they used to educate people on AIDS and preach against stigmatization. All of those things have come to a halt. Almost every week we are now getting a new case of HIV being diagnosed" (37-year old male laboratory technician)

3.3.2. Perceived responsibility

Some AHCP, similar to GHCP, said PLWH were responsible for their infections due to their risky behaviour and lifestyle. GHCP expressed that in a few cases it may be due to occupational hazard:

"*Yes, some [people are responsible for their infection], because of their lifestyle. However, for others it is not their fault if they get it [HIV]. Some*

contract it accidentally…. some of the health workers are infected not because of their behaviour, but through occupational hazard" (35-years female midwife)

One AHCP added that some PLWH purposely infect others

"Hmm with HIV, I think those infected need more education, because they already know, they have the condition, but yet moving with other people just to infect them" (33-year old female nurse).

3.3.3. Attitude of healthcare providers towards PLWH

Both AHCP and GHCP had different attitudes towards PLWH. Most AHCP described their HIV-patients as "normal patients" and "human beings just like all other patients". According to them, the patient always comes first regardless of the condition. AHCP and GHCP indicated that they derive satisfaction from caring for PLWH as they frequently visit their clinic leading to rapid recovery and PLWH are thankful for their services compared to other patients.

Several times, most of them get very healthy and live normal lives. They may not have anything to give as an appreciation but approaching you alone to tell you they are well and healthy makes me happy (" (41-year old female health assistant)

GHCP, however, described PLWH as illiterates, adding that patient's gossip, insult and consciously try to infect them, or misinterpret their behaviour (e.g. not understanding that gloves are used for all patients and not only for PLWH). This notwithstanding, both GHCP and AHCP seemed to differentiate between PLWH based on their level of cooperativeness. A more negative evaluation was made of PLWH they followed if for example AHCP or GHCP perceive PLWH as being in denial/not accepting their status and/or believing it is spiritual, non-cooperative or non-adhering:

"….. When somebody is living with HIV refuses to take his or her drug that is when I am so worried… My worry is that innocent people will be infected" (43-year old male nurse)

3.3.4. Emotions

Most AHCP and GHCP expressed fear of being infected with HIV whilst carrying through their routine work. AHCP and GHCP converged on expressing the need to be extra careful when working with PLWH, especially when it comes to needle use.

"*No, it is not different the same care yes, it is just that you have to be extra careful with them so that you are not pricked" (27-year old female nurse)*

Both AHCP and GHCP respond to this fear by being careful and pray they are not infected. GHCP, regardless of receiving training on HIV, seemed to be extremely careful for fear of infection and strictly follow safety precautions especially when HCP knows the patient is HIV positive.

A few GHCPs said they are never worried about infection but they will not ignore any safety precautions

"I do not [worry]……..If I am to render services, I take safety measures, when we want to take vitals and the fellow has infected skin, I do not put the cuff on the person's arm. If the person has lesions, I have to use gloves before I touch them to protect myself. (41-year old female nurse).

Some GHCP mentioned that they were extremely careful and hesitant in caring for PLWH until they participated in a specific HIV-related workshop. Nevertheless, one can read one's fears in between the lines. There seemed to be a slight tendency for GHCP, who did not recently follow an HIV/stigma workshop to be even more anxious about contagion, resulting in subtle expressions of different handling of patients:

"That is once you know the person is HIV positive, you tend to be much cautious. You tend to be much careful when working with them than working on other patients who are not positive so I think that is the only thing. You tend to be more cautious so that you do not also infect yourself or expose yourself" (33-year old female nurse)

Some GHCP also expressed emotions such as sympathy, pity or sadness towards PLWH

"Oh, I feel sad especially when I see them in their sick state" (39-year old male nurse)

"It feels they have a borrowed time to live: "*Seeing the infected people, I sometimes pity them. It is as if you know that they are dying, that they have a few years or they are on borrowed time." (28-year old female nurse)*

"Personally it is sad when I meet somebody or find out someone has the disease so I sympathize with the person, It may not be the person's fault and even if it is the fault of the person" (51-year old female midwife)

More AHCP than GHCP expressed empathetic feelings towards PLWH and were not worried about taking care of PLWH:

"*It could have been me, so if 'I do not feel like taking care of HIV, that would be very bad. Being HIV infected might not be intentional but due to chance so I do not have any problem taking care of HIV" (37-year old male physician assistant)*

Irrespective of the training received, some GHCP struggled to care for PLWH prior to their training on PLWH care

"*Ooh now I have positive relationship working with them (PLWH), previously, I was having problems with them (PLWH), but now I feel okay when I am working on them" (30-year old female nurse)*

"I used to struggle with getting closer to PLWH. As such when I am doing something for the person and the person does something small I become annoyed and talk harshly to them. This makes them uncomfortable" (34-year old male nurse)

3.3.5. Self-efficacy and skills towards PLWH care

Most AHCP and some GHCP expressed confidence in working with PLWH.

"Very, very, very confident because I know the training that I passed through, when you are attending to the patient, you feel you know what you are doing. So, you would not think of "can I do what I am going to do?' When you are doing it, you have that kind of zeal to do it and you are not afraid" (26-year old female nurse)

However, one GHCP said he used to be less confident working with PLWH because he did not have enough knowledge on PLWH and HIV*:*

"*Yes, before the workshop I was worried even when I come on duty alone. This is because you do not want to work on PLWH. I did not have enough knowledge on PLWH and HIV" (34-year old male Nurse)*

3.4. External factors influencing healthcare providers' behaviour

3.4.1. Training on HIV and PLWH care

All AHCP and majority of GHCP had received work-related training on HIV stigmatisation. AHCP additionally received training on PLWH therapy, HIV, HIV counselling, HIV comorbidities, policy reforms and work protocols. However, most AHCP and GHCP expressed the need for more frequent updates that helps them to upgrade their knowledge with the current HIV-related issues and for continuous professional licensure. They conveyed that training and workshops are organized quarterly when it is necessary for new staff to be acquainted with the new knowledge:

"*If possible every quarter of the year. So that newly posted staff will benefit from it. In the event that the current crop of HCP who received the training on stigmatization are unavailable to educate the new staff then it becomes a challenge but if these workshops are organized quarterly then*

would capture all the new staff for effective patient care" (36-year old female midwife).

3.4.2. Availability of guidelines for patient care

All AHCPs stated that there were guidelines for HIV treatment even though they did not have them available in hardcopies whilst working at the ART clinic. Most of those who had it had soft copies, which were accessible online. Some participants indicated that they either adapted the policy to their facility, used their discretion or used the producers' manual (mainly in the laboratory) when implementing the guidelines in their daily practise. Most HCP seem to be well up-to-date with the latest guidelines or policy:

"Formerly, we gave prophylaxis before antiretroviral treatment. However, currently, once a person tests positive we start treatment" (57-year old male pharmacist)

Unlike the AHCPs, the majority of the GHCP did not know about protocols or policies specifically guiding the care of PLWH. They were more inclined to mention general nursing protocols. Some assumed that even if protocols were available, they would be in the ART clinics where they refer PLWH for therapy. Some GHCP said they used their expertise of general patient care for treating PLWH.

"We use our professional experience, you look at the needs of that particular patient then you provide. If the person is so weak that they cannot take care of their personal hygiene, we do it for the person: bath, feed, take care of their nails. You know as soon as we inform them that they are HIV positive, they tend to be psychologically down so it is the nurse's duty to reassure the patient. We use our general knowledge when we do not have the protocol" (33-year old female nurse).

A few AHCPs, referred to the old policy of using CD4 count to start patient antiretroviral treatment.

"*…at times it depends on the CD4 counts some of the drugs are given according to the CD4 counts of PLWH…. (34-year old female nurse*)

3.4.3. Logistics and resource availability

Both AHCPs and GHCPs stated that inadequate staff and infrastructural needs influence their work. Most AHCPs and GHCPs indicated that, though they have the basic resources, there are periodic shortages of essential logistics such as hand gloves. They however cope with the meagre resources available to them:

"*We are managing with the little resources that we have. So many things that we do here, we improvise for it. Many times, we have shortage of even medication for our clients. All of that demotivates us" (37-year old female Nurse)*

One HCP stated that sometimes they receive all the training but the logistics to do the work according to how they are trained is unavailable:

"Ahh, training is helpful but not that helpful when the resources are not there. Sometimes you have the training, but you need the logistics. So you have the training, you have the knowledge, and the things needed to do the work are not here (37-year old male Nurse)

They added that delayed reimbursement of treatment cost for PLWH from the National Health insurance Authority to the health facilities directly affect supply and maintenance of logistics and ultimately quality of patient care.

"*Most of our clients are health insurance subscribers. Therefore, if the scheme is able to reimburse the funds frequently or timely and I think the managers will be able to procure the necessary logistics for us to use…" (34-year old male Nurse)*

3.4.4. Supervisors support

Generally, AHCPs and GHCPs described leadership of the health system as highly hierarchical. They asserted that the support they receive to provide care to patients is mostly limited. For the few who receive some support, they complained it was mostly encouraging words from their supervisors without any financial benefits. For some it is provision of training and workshops to enhance staff knowledge, supply logistics and provision of accommodation closer to the hospital.

"I can say because I stay in the hospital quarters, sometimes when they call at night…… so it makes the work easier than somebody staying far away from the hospital. This can maybe even cause the death of a patient, since they may take a while to get to the hospital" (33-year old male nurse)

4. Discussion

The patient- health care provider (HCP) relationship and the HCP's behaviour towards patients is key to treatment adherence, also for people living with HIV (PLWH). This paper explored individual and external factors that may influence the behaviour of health care providers towards PLWH. It further explored whether the behaviour and factors differ between HCP working in ART clinics versus HCP working in the other departments. Although both AHCP and GHCP said that their thoughts or judgments never influenced the way they treat PLWH, there seem to be subtle expressions of stigma and differences in how they treat PLWH as compared to other patients. However, their stigma seems to go in different directions: The responses of GHCP suggested that they tend to express more negative, stigmatising behaviours (e.g. consistent gloving with PLWH but not with other patients), while the AHCP tend to exhibit positive stigmatizing behaviours (e.g. treating PLWH sometimes a bit too special) towards PLWH. One would expect that AHCP, who had had more contact with PLWH, would have less negative perceptions of PLWH, reduce their anxiety and fears when interacting with them yet they still harboured subtle stigmatizing behaviours towards PLWH. Some explanations for this behaviour include the fact that, contrary to the nursing qualities of care, nurturing, comfort, and concern and motivation to help people, both AHCP and GHCP may hold some stereotypic ideas about HIV that may be enshrined in socio-cultural values that may influence their behaviour towards PLWH (Adetoyeje et al., 2008, Latif, 2020, Fadyl, 2021). Another possible explanation is the subtle actions of well-meaning healthcare providers who may be unaware of the potential damaging effect of their actions on PLWH (Fominaya, Corrigan, & Rüsch, 2016, Geter, Herron, & Sutton, 2018), such actions have been associated with self-pity, shame, hopelessness, decreased empowerment, self-esteem and psychological distress of PLWH (Stutterheim, 2011; Fominaya, Corrigan, & Rüsch, 2016). Indeed, self-pity may cause PLWH to overestimate the magnitude of HIV positive status and underestimate their ability to cope with its attendant feelings of hopelessness and helplessness (Fominaya et al., 2016) and may influence clinic visits, hence adherence to medication.

The perception of both AHCP and GHCP onset controllability of HIV is relevant for HCP behaviour towards PLWH. This perception could be fuelled by the long-held belief that HIV is due to norm-violating behaviour such as commercial sex work, homosexuality, and promiscuity. The association of HIV with norm-violation portrays it as the disease of immorality as has been reported by other studies (Campbell et al., 2015; Dapaah, 2016). HCP's appraisal of onset controllability could potentially evoke irritation or even anger (Bos et al., 2008). These negative perceptions may lead to negative interactions between HCP and PLWH; hence affect clinic visits, medication adherence and well-being of PLWH.

The accounts of both AHCP and GHCP revealed that they were careful when working with known PLWH. GHCP, however, emphasized the need to be extremely careful. A plausible explanation for this behaviour may be due to their limited knowledge on HIV, the need to

protect themselves and their patients from other infections or the fear of the infection due to perceived severity and chronic nature of HIV with its attendant stigma. Some studies corroborates that out of fear healthcare providers exhibit stigmatizing behaviour such as anger towards patients, provide inadequate care, completely avoid providing care or deliberately delay the provision of care to PLWH (Dapaah, 2016; Dong et al., 2018).

Narratives from both AHCP and GHCP show that HCP express the need for more periodic training. Not only does this offer HCP the opportunity to be abreast with current knowledge in the field, frequent training may help with respectful patient management. As such, periodic training will help new staff posted to various department to benefit from HIV-related knowledge for patient care. The fact that some participants refer to the old HIV policy further emphasizes the need for frequent refresher training for both AHCP and GHCP. Though the special training AHCP received was expected to lead to more willingness to care for HIV positive persons with less negative attitudes and behaviours towards them, this was not so obvious in their self-reported behaviour towards PLWH in this study. In contrast, previous studies reported that HIV training and the refresher courses equipped health workers to behave well towards clients during service provision and contribute to positive interactions between HCP and PLWH (Dapaah, 2016; USAID, 2007).

The present study suggests that the shortage of some logistics and resources, such as gloves for protection, may affect the behaviour of both AHCP and GHCP towards PLWH. This finding is similar to Sadob and colleagues (2006) who reported that healthcare providers were willing to provide services such as setting up an infusion if they wore gloves. Feyissa et al. noted that the perception of supply-related institutional support significantly reduced stigma scores and the shortage of materials and supplies was a cause of conflict between PLWH and HCP. This is because the lack of logistics tend to support discriminatory practices (Feyissa et al., 2012). In order for HCP to provide the needed care to PLWH, it is important for hospital management to provide the needed logistics for HCP to feel adequately protected in providing care to PLWH. Indeed as Cohen and colleagues noted, this may involve the provision of vital equipment, provision of more basic furniture and supplies, improving infection control and occupational health practices (Cohen et al., 2009).

Delays in reimbursement of medical cost as noted by AHCP and GHCP challenges the delivery of services to PLWH. AHCP and GHCP responses elaborates the non-payment of insurance claims by the National Health insurance Authority challenged the acquisition of equipment's and medical supplies for patient care. Similar to our findings, Akweongo and colleagues reported that non-reimbursement of insurance claims affects the financial capacity of health-facilities to provide medical supplies (Akweongo et al., 2021). In response to some of these shortages, some HCP may resort to the re-use of medical supplies with its attendant increased risk of infection. We contend that, non-reimbursement of insurance claims that may lead to the re-use of medical supplies may influence HCP behaviour towards PLWH and do not augur well for patient care.

Furthermore, the accounts of AHCP and GHCP indicate the absence of clear and readily available HIV policies and guidelines for HIV care especially in other departments' in the hospital, in which case GHCP depended on their experience and discretion. The challenge with HCP using their discretion in managing patients is that it may foster stigma, disclosure, other negative attitudes and behaviour towards PLWH without recourse to any guidelines. Literature suggest that the lower perception of protocol-related institutional support was a significant predictor of unethical treatment of PLWH, stigma, unofficial disclosure and the lack of feelings of safety(Feyissa et al., 2012). We argue that the provision of clear policies and guidelines for HIV care, training on these guidelines and optimal adherence to the guidelines may help in reduce stigmatizing and discriminatory behaviour of AHCP and GHCP.

The findings of the study have some potential limitations. First, the findings of this study are not generalizable given the use of qualitative method and the number of HCPs interviewed, nonetheless, the use of this method allowed for detail and indepth examination of factors influencing HCP behaviour towards PLWH. Secondly, we envisage that, HCPs could give socially desirable responses about their behaviours towards PLWH, especially with Dutch graduate students who conducted some of the interviews. To reduce this, interviewers built rapport with participants before interviews. Again, participants received a brief information on the interview in order not to sway their responses in a particular way. The fact that one facility had recently participated in an anti-stigmatization workshop could also influence HCP responses about their behaviour. In addition, we did not explore the HIV knowledge of AHCP assuming they received training on HIV as part of Ghana AIDS Commission processes. Nonetheless, the study presents important insights on the factors that influence the behaviour of HCP in ART clinics and those in the other departments towards PLWH. It is one of the first studies in Ghana to the best of our knowledge to explore both individual and external factors influencing the behaviour of HCP in ART clinics and other departments of the hospital towards PLWH. Future studies should further explore the role of healthcare managers in shaping HCP behaviour towards PLWH.

5. Conclusion and practical implications

The present study shows that although AHCPs and GHCPs said their thoughts or judgments did not influence the way they treat PLWH, there seem to be a subtle expression of stigma and differences in how they treat PLWH as compared to other patients. The study identified some individual and external factors that influenced both AHCPs and GHCPs behaviour towards PLWH. Some individual factors such emotions (fear, anger, pity, empathy), attitudes towards PLWH, perceptions about HIV, perceived HIV onset controllability, training received and external factors including, availability of guidelines, logistics and resources, and funding challenges seem to affect HCP's behaviour towards PLWH. The adequate supply of logistics, clear policies and guidelines on PLWH treatment, regular reimbursement by the national insurance authority may improve both HCPs behaviour towards PLWH. Further research is needed to establish the magnitude and extent of stigmatizing behaviour of AHCPs and GHCPs. We suggest the use of Intervention Mapping(IM) (Bartholomew, Parcel, & Kok, 2016) to develop, implement and evaluate interventions targeted at healthcare providers in ART clinics and other departments and their supervisors in order to reduce stigmatisation of PLWH in the health care sector, hence improve hospital visits and medication adherence. The use of IM helps in adapting existing interventions to new populations and settings. Theory- and evidence-based interventions enhance the likelihood of effectiveness and may contribute to the well-being, health, treatment adherence of PLWH.

Author contributions

All authors have contributed to the conception and design of the study, drafted and have been involved in revising this manuscript, reviewed the final version of this manuscript before submission

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We are grateful to all healthcare providers who consented to participate in this study and to the Management of all the participating health facilities. We are indebted to NUFFIC for funding the study under the Ph.D. fellowship grant nr. NFP-Ph. D 170007, Maastricht University

and Kintampo Health Research Centre for providing additional support, such as human and logistics.

References

Abdulai, M. A., Mevissen, F. E. F., Ruiter, R. A. C., Owusu-Agyei, S., Asante, K. P., & Bos, A. E. R. (2021). A qualitative analysis of factors influencing antiretroviral adherence among persons living with HIV in Ghana. *Journal of Community and Applied Social Psychology*, (August 2020), 1–16. https://doi.org/10.1002/casp.2551.

Adetoyeje, Y., Oyeyemi, B., & Bello, I. (2008). Physicians and AIDS care: Does knowledge influence their attitude and comfort in rendering care? *African Journal of Health Sciences, 14*(1), 37–43. https://doi.org/10.4314/ajhs.v14i1.30844

Akweongo, P., Chatio, S. T., Owusu, R., Salari, P., Tedisio, F., & Aikins, M. (2021). How does it affect service delivery under the National Health Insurance Scheme in Ghana? Health providers and insurance managers perspective on submission and reimbursement of claims. *PLoS ONE, 16*(3 March), 1–15. https://doi.org/10.1371/journal.pone.0247397.

Archiopoli, A., Ginossar, T., Wilcox, B., Avila, M., Hill, R., & Oetzel, J. (2016). Factors of interpersonal communication and behavioral health on medication self-efficacy and medication adherence. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*. https://doi.org/10.1080/09540121.2016.1192577

Atinga, R. A., Abekah-Nkrumah, G., & Domfeh, K. A. (2011). Managing healthcare quality in Ghana: A necessity of patient satisfaction. *International Journal of Health Care Quality Assurance*. https://doi.org/10.1108/09526861111160580

Bartholomew, L. K., Parcel, G. S., & Kok, G. (2016). Intervention Mapping: A Process for Developing Theory- and Evidence-Based Health Education Programs. *Health Education and Behavior*. https://doi.org/10.1177/1090198119802500502

Birkhäuer, J., Gaab, J., Kossowsky, J., Hasler, S., Krummenacher, P., Werner, C., & Gerger, H. (2017). Trust in the health care professional and health outcome: A meta-analysis. *PLoS One1, 12*(2), 1–13. https://doi.org/10.1371/journal.pone.0170988

Boakye, D. S., & Mavhandu-Mudzusi, A. H. (2019). Nurses knowledge, attitudes and practices towards patients with HIV and AIDS in Kumasi, Ghana. *International Journal of Africa Nursing Sciences, 11*(May), Article 100147. https://doi.org/10.1016/j.ijans.2019.05.001

Bos, A. E. R., Pryor, J. B., Reeder, G. D., & Stutterheim, S. E. (2013). Stigma: Advances in Theory and Research. *Basic and Applied Social Psychology*. https://doi.org/10.1080/01973533.2012.746147

Bos, A. E. R., Schaalma, H. P., & Pryor, J. B. (2008). Reducing AIDS-related stigma in developing countries: The importance of theory- and evidence-based interventions. *Psychology, Health and Medicine.*. https://doi.org/10.1080/13548500701687171

Campbell, C., Scott, K., Skovdal, M., Madanhire, C., Nyamukapa, C., & Gregson, S. (2015). A good patient? How notions of "a good patient" affect patient-nurse relationships and ART adherence in Zimbabwe. *BMC Infectious Diseases, 15*(1), 1–11. https://doi.org/10.1186/s12879-015-1139-x

Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning, 10*(6), 807–815. https://doi.org/10.1016/j.cptl.2018.03.019

Cheema, E., Abbas, A., & Al-Hamid, A. (2019). Healthcare-related factors affecting the management of HIV infected patients: A systematic review of qualitative evidence. *International Journal of STD and AIDS*. https://doi.org/10.1177/0956462419875357

Cohen, R., Lynch, S., Bygrave, H., Eggers, E., Vlahakis, N., Hilderbrand, K., … Ford, N. (2009). Antiretroviral treatment outcomes from a nurse-driven, community-supported HIV/AIDS treatment programme in rural lesotho: Observational cohort assessment at two years. *Journal of the International AIDS Society, 12*(1), 1–8. https://doi.org/10.1186/1758-2652-12-23

Dapaah, J. M. (2016). Attitudes and Behaviours of Health Workers and the Use of HIV/AIDS Health Care Services. *Nursing Research and Practice, 2016*, 1–9.

Dong, X., Yang, J., Peng, L., Pang, M., Zhang, J., Zhang, Z., … Chen, X. (2018). HIV-related stigma and discrimination amongst healthcare providers in Guangzhou. *China. BMC Public Health, 18*(1), 1–10. https://doi.org/10.1186/s12889-018-5654-8

Fadyl, J. K. (2021). How can societal culture and values influence health and rehabilitation outcomes? *Expert Review of Pharmacoeconomics & Outcomes Research, 21*(1), 5–8.

Feyissa, G. T., Abebe, L., Girma, E., & Woldie, M. (2012). Stigma and discrimination against people living with HIV by healthcare providers, Southwest Ethiopia. *BMC Public Health*. https://doi.org/10.1186/1471-2458-12-522.

Fominaya, A. W., Corrigan, P. W., & Rüsch, N. (2016). The effects of pity on self- and other-perceptions of mental illness. *Psychiatry Research, 241*, 159–164. https://doi.org/10.1016/j.psychres.2016.04.058

Geter, A., Herron, A. R., & Sutton, M. Y. (2018). HIV-related stigma by healthcare providers in the United States: A systematic review. *AIDS patient care and STDs, 32*(10), 418–424.

Ghana AIDS Commission. (2013). Guidelines for Antiretroviral Therapy in Ghana. *Ghana Health Service., 6thedn*, 14. file:///C:/Users/Martha.Abdulai/Downloads/ART%20Guidelines%20Corrected%20131217%20(3).pdf.

Haas, A. D., Msukwa, M. T., Egger, M., Tenthani, L., Tweya, H., Jahn, A., … Keiser, O. (2016). Adherence to Antiretroviral Therapy during and after Pregnancy: Cohort Study on Women Receiving Care in Malawi's Option B+ Program. *Clinical Infectious Diseases*. https://doi.org/10.1093/cid/ciw500

Hassan, Z. M., & Wahsheh, M. A. (2011). Knowledge and attitudes of jordanian nurses towards patients with HIV/AIDS: Findings from a nationwide survey. *Issues in Mental Health Nursing, 32*(12), 774–784. https://doi.org/10.3109/01612840.2011.610562

Ishimaru, T., Wada, K., Hoang, H. T. X., Bui, A. T. M., Nguyen, H. D., Le, H., & Smith, D. R. (2017). Nurses' willingness to care for patients infected with HIV or hepatitis B / C in Vietnam. *Environmental Health and Preventive Medicine, 22*(1), 1–7. https://doi.org/10.1186/s12199-017-0614-y

Kalichman, S. C., Mathews, C., Banas, E., & Kalichman, M. O. (2019). Treatment adherence in HIV stigmatized environments in South Africa: Stigma avoidance and medication management. *International Journal of STD and AIDS, 30*(4), 362–370. https://doi.org/10.1177/0956462418813047

Kamimura, A., Higham, R., Rathi, N., Panahi, S., Lee, E., & Ashby, J. (2020). Patient–provider relationships among vulnerable patients: The association with health literacy, continuity of care, and self-rated health. *Journal of patient experience, 7*(6), 1450–1457.

Latif, A. S. (2020). The importance of understanding social and cultural norms in delivering quality health care—A personal experience commentary. *Tropical medicine and infectious disease, 5*(1), 22.

Li, L., Wu, Z., Wu, S., Zhaoc, Y., Jia, M., & Yan, Z. (2007). HIV-related stigma in health care settings: A survey of service providers in China. *AIDS Patient Care and STDs*. https://doi.org/10.1089/apc.2006.0219

Manganye, B. S., Maluleke, T. X., & Lebese, R. T. (2013). Professional nurses' views regarding stigma and discrimination in the care of HIV and AIDS patients in rural hospitals of the Limpopo province, South Africa. *African Journal of AIDS Research, 12*(1), 33–40. https://doi.org/10.2989/16085906.2013.815411

Mills, E. J., Nachega, J. B., Buchan, I., Orbinski, J., Attaran, A., Singh, S., … Bangsberg, D. R. (2006). Adherence to antiretroviral therapy in sub-Saharan Africa and North America: A meta-analysis. *Journal of the American Medical Association*. https://doi.org/10.1001/jama.296.6.679

Nyblade, L., Stangl, A., Weiss, E., & Ashburn, K. (2009). Combating HIV stigma in health care settings: What works? *Journal of the International AIDS Society*. https://doi.org/10.1186/1758-2652-12-15

Nyblade, L., Stockton, M. A., Giger, K., Bond, V., Ekstrand, M. L., Lean, R. M., … Wouters, E. (2019). Stigma in health facilities: Why it matters and how we can change it. *BMC Medicine, 17*(1), 1–15. https://doi.org/10.1186/s12916-019-1256-2

Obirikorang, C., Selleh, P. K., Abledu, J. K., & Fofie, C. O. (2013). Predictors of Adherence to Antiretroviral Therapy among HIV/AIDS Patients in the Upper West Region of Ghana. *Isrn Aids, 2013*, 1–7. https://doi.org/10.1155/2013/873939

Patey, A. M., Fontaine, G., Francis, J. J., McCleary, N., Presseau, J., & Grimshaw, J. M. (2022). Healthcare professional behaviour: Health impact, prevalence of evidence-based behaviours, correlates and interventions. *Psychology & Health*, 1–29.

Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice ? *Meta-analytic tests of three mediators y, 934*(January), 922–934. https://doi.org/10.1002/ejsp

Pharmacy, F., Indonesia, U., Java, W., Renaldi, F. S., Riyadina, W., Qamar, M., & Sauriasari, R. (2021). Interpersonal Relationship and Its Effect on Treatment Compliance in Patients with Type-2 Diabetes Mellitus. *Pharmaceutical Sciences and Research, 8*(1), 37–46. https://doi.org/10.7454/psr.v8i1.1105

Rueda, S., Mitra, S., Chen, S., Gogolishvili, D., Globerman, J., Chambers, L., … Rourke, S. B. (2016). Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: A series of meta-analyses. *BMJ Open, 6*(7), e011453.

Sadob, A. E., Fawole, A. O., Sadoh, W. E., Oladimeji, A. O., & Sotiloye, O. S. (2006). Attitude of health-care workers to HIV/AIDS. *African Journal of Reproductive Health*. https://doi.org/10.2307/30032442

Showkat, N., & Parveen, H. (2017). In-depth interview. *Quadrant-I (e-Text)*.

Stutterheim, S. E. (2011). Understanding HIV-related stigma: social and psychological processes, (2011), 163.

Stutterheim, S. E. (2014). *HIV-Related Stigma in the Netherlands HIV-Related Stigma in the Netherlands P o sit L i vin U n S t ig ma ive.*

Stutterheim, S. E., Sicking, L., Brands, R., Baas, I., Roberts, H., Van Brakel, W. H., … Bos, A. E. R. (2014). Patient and provider perspectives on HIV and HIV-related stigma in dutch health care settings. *AIDS Patient Care and STDs*. https://doi.org/10.1089/apc.2014.0226

UNAIDS. (2020). Global Hiv Statistics. *Ending the AIDS Epidemic*, (June), 1–3. Retrieved from https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf.

USAID. (2007). *evaluation of HIV knowledge n practice among nurses*.