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Article

# Patient-provider communication styles in HIV treatment programs in Bamako, Mali: A mixed-methods study to define dimensions and measure patient preferences

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ABSTRACT

Effective patient-provider communication (PPC) promotes patient adherence and retention in long-term care. Sub-Saharan Africa faces unprecedented demand for chronic care for HIV patients on antiretroviral therapy (ART), yet adherence and retention remain challenging. In high-income countries, research describing patient preferences for different PPC styles has guided interventions to improve PPC and patient outcomes. However, research on PPC preferences in sub-Saharan Africa is limited. We sought to define PPC dimensions relevant to ART programs in Bamako, Mali through recordings of clinical interactions, in-depth interviews and focus-group discussions with 69 patients and 17 providers. To assess preferences toward contrasting PPC styles within dimensions, we conducted a vignette-based survey with 141 patients across five ART facilities. Qualitative analysis revealed two PPC dimensions similar to those described in the literature on patient-centered communication (level of psychosocial regard, balance of power), and one unique dimension that emerged from the data (guiding patient behavior: easy/tough/sharp). Significantly more survey participants chose the vignette demonstrating high psychosocial regard (52.2%) compared to a biomedical style (22.5%) ($p < 0.001$). Within balance of power, a statistically similar proportion of participants chose the vignette demonstrating shared power (40.2%) compared to a provider-dominated style (35.8%). In guiding patient behavior, a similar proportion of participants preferred the vignette depicting the "easy" (38.4%) and/or "tough" style (40.6%), but significantly fewer preferred the "sharp" style (14.5%) ($p < 0.001$). Highly educated participants chose biomedical and shared power styles more frequently, while less educated participants more frequently indicated "no preference". Working to understand, develop, and tailor PPC styles to patients in chronic care may help support patient retention and ultimately, clinical outcomes. Emphasis on developing skills in psychosocial regard and on adapting styles of power balance and behavioral guidance to individual patients is likely to yield positive results and should be considered a high priority for ART providers.

## 1. Introduction

Sub-Saharan Africa is currently experiencing a massive increase in demand for effective outpatient chronic care, primarily due to the unprecedented 12 million people living with HIV who are now accessing antiretroviral therapy (ART) (UNAIDS, 2016). Maximizing the individual and public health benefits of ART depends on keeping patients in care and on treatment for the remainder of their lives. However, inadequate adherence and poor patient retention in ART programs remain significant issues: 35% of patients in sub-Saharan Africa exhibit suboptimal ART adherence and 20% are lost to follow-up within twelve months after treatment initiation (Fox & Rosen, 2015; Mills et al., 2006).

The way providers communicate with patients (including transferring information, establishing roles, conveying or reacting to emotions, and balancing power) can affect patient adherence and retention in outpatient chronic care (Flickinger, Saha, Moore, & Beach, 2013; Haskard Zolnierek & DiMatteo, 2009). Patient-provider communication

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(PPC) that consists of scolding, belittling, or abusive language is one of the most commonly cited barriers to retention among ART patients in sub-Saharan Africa (Dahab et al., 2008; Layer, Brahmbhatt, et al., 2014; Layer, Kennedy, et al., 2014). Stigma, discrimination, or simple misunderstandings between patients and providers also contribute to interruptions or discontinuation of treatment (Carillon, 2011; Gourlay et al., 2014; Ware et al., 2009, 2013). Fear of future scolding may deter patients who have missed appointments from returning to care (Dahab et al., 2008; Layer, Brahmbhatt, et al., 2014; Ware et al., 2013). On the other hand, higher patient ratings of PPC have been associated with higher patient satisfaction, better ART adherence and fewer missed appointments in studies in South Africa and Kenya. (Wachira, Middlestadt, Reece, Peng, & Braitstein, 2014; Watt et al., 2010).

Research from high-income countries posits that provider trainings can improve the specific PPC skills that are linked to patient satisfaction and medical adherence, including encouraging patient participation in decision-making, expressing empathy, asking open-ended questions, and demonstrating regard to the psychosocial aspects of the illness experience (Rao, Anderson, Inui, & Frankel, 2007). Improvements in PPC do not necessarily lengthen consultation time, and can often make consultations more efficient (Roter, Stewart, Putnam, & Lipkin, 1997). Yet despite potential gains in patient retention and adherence, there have been few systematic efforts to improve PPC among chronic care providers in sub-Saharan Africa. The dominant emphasis of HIV treatment programming has been scaling up access to services, with relatively less attention to ensuring the quality of those services. Further, conceptualizations of quality PPC can vary according to situation, cultural context and individual patient characteristics (Say, Murtagh, & Thomson, 2006; Schouten & Meeuwesen, 2006) and little guidance exists for developing interventions specific to chronic care in sub-Saharan Africa.

Research in high-income countries has produced an array of theoretical models specifying PPC dimensions and constructs, yet the transferability of these models to other settings has been under-examined. Further, some research in high-income countries has identified patterns of patient preferences toward different PPC styles based on patient demographic or treatment characteristics (Say et al., 2006), yet research that examines if similar patterns exist in low-income countries is lacking.

In Mali, research indicates that both PPC and retention in ART programs are in need of improvement. Mali has one of the lowest ART patient retention rates in sub-Saharan Africa: Only 64% of patients remain active in treatment one year after starting ART (UNAIDS, 2013). In one study in Bamako, Mali's capital, 40% of people living with HIV surveyed felt that communicating with their HIV treatment provider was "difficult" or "somewhat difficult" (Morrison, 2010). In aiming to define locally-relevant dimensions of PPC and assess patient PPC preferences, our study represents a first step toward designing interventions to improve communication skills among ART providers in Mali.

### 1.1. Considerations in defining and classifying PPC styles

Researchers in high-income countries have spent considerable effort defining, operationalizing, and measuring the impact of *patient-centered communication,* the dominant theoretical framework for effective PPC. While its definitions and components vary, patient-centered communication generally refers to PPC that actively seeks to understand the patient as a "unique human being" (Lipkin, Quill, & Napodano, 1984). Patient-centered communication can be delineated in two fundamental dimensions: First, as an alternative to "disease-centered" communication, providers can demonstrate *psychosocial regard* by acknowledging individual patients' humanity, unique worldview, and psychosocial illness experience. Second, as an alternative to "provider-centered" communication, providers who *share power* consider patients as equal partners by allowing them greater control in consultation dialogue and treatment-related decisions (Krupat et al., 2000). While other theoretical frameworks of patient-centeredness offer more constructs, most can be classified under these two broad dimensions.[1]

Some studies have suggested that without much adaptation, the idea of patient-centered communication is cross-culturally transferable. For example, a single measure of perceived patient-centeredness ("my provider knows me 'as a person'") was significantly associated with ART adherence in both the United States (Beach, Keruly, & Moore, 2006) and South Africa (Barry et al., 2012). Additionally, ART providers from South Africa saw their most important task as supporting and empowering patients, reflecting perceived value in both psychosocial regard and shared power (Stein, Lewin, & Fairall, 2007). Outside of HIV, studies in Africa have also suggested that patient-centered communication is both preferred by patients in outpatient clinics and effective in promoting continuation of women's chosen methods of family planning (Abdel-Tawab & Roter, 2002; Lau, Christensen, & Andreasen, 2013).

Other researchers have challenged the notion that patient-centeredness as defined in Western literature accurately describes ideal PPC according to patients in other settings. According to patients in a Tanzanian program to prevent mother-to-child transmission of HIV, ideal PPC is caring, yet authoritative and instructive (Våga, Moland, Evjen-Olsen, Leshabari, & Blystad, 2013). Research from rural Cameroon suggests that patients seek traditional healers in part because of the quality of PPC, which consisted of less patient control, yet more psychosocial talk and active patient questioning compared to PPC in biomedical settings (Labhardt, Aboa, Manga, Bensing, & Langewitz, 2010). To define PPC dimensions for this present research, we considered the potential transferability of patient-centered communication dimensions in the existing literature, while also recognizing that communication may be conceptualized differently in our particular research setting.

### 1.2. Considerations in measuring individual PPC preferences

Beyond potential differences in cultural conceptualizations, variations in individual patient preferences add complexity to defining provider communication skills to target in PPC interventions. As it is unlikely that all patients will prefer the same PPC type, examining patterns in individual preferences may help guide providers in tailoring styles to different patients or matching patients to providers with different practice styles. A number of studies on individual PPC preferences suggest variability in preferred balance of power. In high-income countries, higher socioeconomic status, higher education, younger age, and sometimes female gender are associated with preference for a shared power style over a provider-dominated one (Say et al., 2006). In a rural health clinic in Sierra Leone, patients with higher education—particularly females with higher education—also preferred more shared power (Lau et al., 2013). However, little research has examined if any specific patient characteristics are associated with PPC preferences in HIV care in sub-Saharan Africa.

### 1.3. Objectives

In our study, we aimed to (1) define and classify locally-relevant PPC types in Bamako, Mali and (2) measure patient preferences for these different PPC types.

[1] For example, Epstein et al.'s review of patient-centeredness (2005) proposes four dimensions, of which the first two may be classified as *psychosocial regard* ("eliciting and understanding the patient's perspective" and "understanding the patient within his or her unique psychosocial context") and the second two as *shared power* ("reaching, with the patient, a shared understanding of the problem and its treatment that is concordant with the patient's values" and "'helping the patient to share power and responsibility by involving him or her in choices to the degree that he or she wishes").

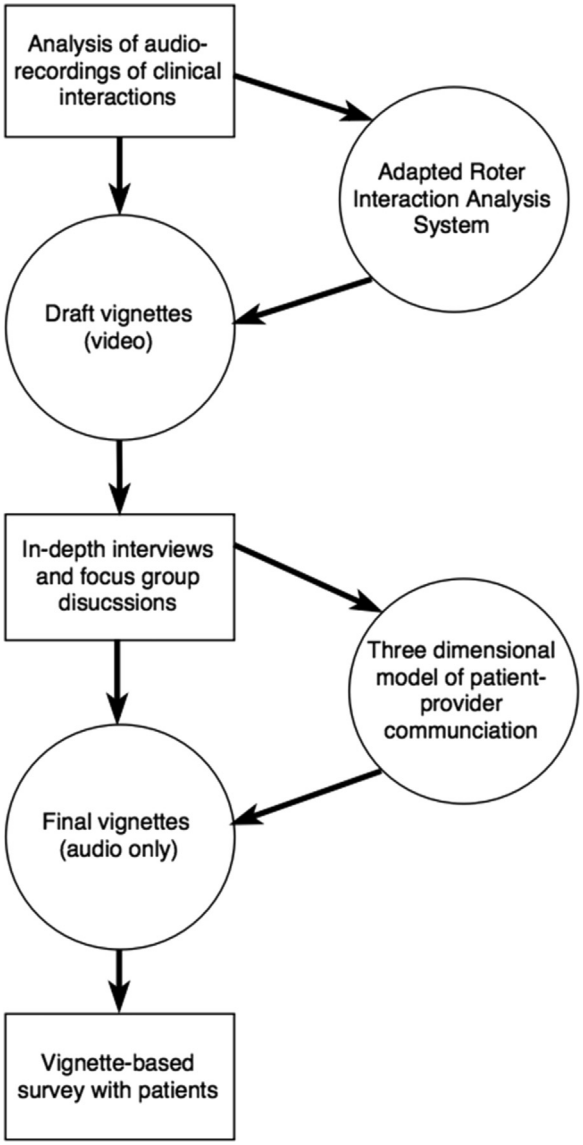


**Fig. 1.** : Sequential flow of study methods (boxes) and products (circles).

## 2. Methods

We recorded clinical interactions and conducted qualitative in-depth interviews (IDIs) and focus groups discussions (FGDs) with patients and providers in HIV treatment centers to address the first aim and a vignette-based survey with patients to address the second (Fig. 1). Data were collected at five HIV treatment centers in Bamako: two teaching hospitals, one decentralized community health center, and two specialized HIV treatment centers run by non-governmental organizations (NGOs).

### *2.1. Developing video vignettes: coding clinical interactions*

Based on our previously described review of the literature, we began with a model of PPC that consisted of two basic dimensions of patient-centeredness: level of psychosocial regard and balance of power. To demonstrate variations of these dimensions (which we refer to as "styles"), we developed vignettes, or standardized, hypothetical scenarios (Finch, 1987). To inform vignette content, we audio-recorded 18 real clinical interactions, purposively sampled to include a diversity of sites and gender combinations of patient-provider dyads. Two members of the researcher team, an American fluent in French and Bambara (the local language) and a Malian physician, coded recordings using the French version of the Roter Interaction Analysis System (RIAS). The RIAS classifies utterances in clinical interactions into mutually exclusive categories (Roter & Larson, 2002). During coding, we made minor adjustments to the RIAS categories to improve their fit to our sample of recordings and transcribed prototypic examples of each utterance category. We wrote four vignette scripts to demonstrate different combinations of high and low "psychosocial regard" and "shared power," based on Ford et al.'s application of RIAS to measure patient-centeredness (Ford, Fallowfield, & Lewis, 1996) and the prototypical utterances extracted from the audio recordings. We created draft videos of the four vignette scripts, using the same set and actors in each version so as to direct focus to differences in PPC style, not in actors or scenery.

### *2.2. Defining PPC dimensions: qualitative interviews and focus groups*

Next, we conducted 33 IDIs, 16 with patients and 17 with providers, and 7 FGDs, each with 6–10 patients totaling 55 FGD participants. We sampled purposively among patients who had received ART at these sites, aiming for diversity in age, gender, length of time in treatment, distance from health facility, and experience with interruptions in care and treatment. Additionally, we recruited physicians representing different gender, age groups and facility types as well as psychosocial counselors (HIV-positive lay providers based at each facility to provide counselling and education).

For IDIs and FGDs, we developed semi-structured guides covering experiences with ART programs and patient-provider interactions, as well as opinions on ideal and effective PPC. FGDs also included role-play activities. In role-plays, participants acted out patient-provider interactions they had experienced, and with input from other participants, revised the role-plays to portray the ideal patient-provider interaction they would want to experience given similar circumstances. In comparing role-plays, participants discussed the different types of PPC and their potential consequences. At the end of IDIs and FGDs, we invited participants to watch the draft vignettes and offer opinions on the PPC style, the terminology they would use to describe the PPC, and overall, what stood out to them in the video.

IDIs and FGDs were conducted in Bambara or French depending on participant preference. Data were audio-recorded and transcribed into French or English, depending on the first language of the transcriber. Local terms describing PPC were preserved in their original language (Bambara or French). We kept an on-going list of these terms and asked participants in subsequent IDIs and FGDs to describe or demonstrate their meanings.

We analyzed data through memo-writing (Charmaz, 2006) as well as inductive and deductive coding with ATLAS.ti (version 7). While the initial two-dimensional model of patient-centeredness provided guidance in data analysis, we also wanted to allow for the possible emergence of other relevant PPC dimensions. We classified PPC terms and behaviors, searched for commonalities between terms, and opportunities to link terms into broader concepts which ultimately became the PPC dimensions presented in this manuscript. We used member-checking to present a preliminary model of dimensions and styles to patients and providers for feedback (Tobin & Begley, 2004). We incorporated this feedback into a three-dimensional model of PPC, which included the original two dimensions and a third that emerged from the data.

### *2.3. Measuring patient preferences: design, conduct and analysis of vignette-based survey*

Following qualitative analysis, we created new vignettes to represent different styles in the final three-dimensional model of PPC. For these final vignettes, we chose an audio-only format, as we noticed the draft videos contained visual distractions that diverted attention away

**Table 1**
Patient-provider communication dimensions, styles and vignette scenarios.

| Communication dimension | Vignette scenario | Communication style | Vignette dialogue composition (RIAS utterances) | Vignette illustration |
|---|---|---|---|---|
| **Level of psychosocial regard** | *"Imagine you and your doctor are talking about putting you on a new treatment"* | High psychosocial regard | Provider utterances:<br>– 1 social statement<br>– 1 open-ended medical question<br>– 1 closed-ended medical question<br>– 1 bid for verification<br>– 1 open-ended psychosocial question<br>Patient/Provider utterances = 3/5 | |
| | | Academic/biomedical | Provider utterances:<br>– 3 closed-ended medical questions<br>– 1 open-ended medical question<br>Patient/Provider utterances = 4/4 | |
| **Balance of power** | *"Imagine you are at a routine visit talking about how you have been feeling lately."* | Provider dominant | Provider utterances:<br>– 4 therapeutic information-giving<br>– 1 bid for comprehension<br>– 1 interruption<br>Patient/provider utterances = 1/6 | |
| | | Shared power | Provider utterances:<br>– 1 bid for verification<br>– 1 supportive<br>– 1 therapeutic information giving<br>– 1 bid for comprehension<br>– 1 reassurance<br>Patient/provider utterances = 4/5 | |
| **Guiding patient behaviors:** | *"Imagine that you have to travel for a funeral and you missed your last appointment. You were not able to return to the health center before running out of medication. You did not take the medication for the last three days."* | "Easy talk"Gentle cajoling | Provider utterances:<br>– 1 bid for comprehension<br>– 1 open-ended therapeutic regimen question<br>– 1 reassurance<br>– 1 therapeutic information giving<br>– 1 medical/ therapeutic advice giving<br>Patient/provider utterances = 4/5 | |

*(continued on next page)*

**Table 1** *(continued)*

| Communication dimension | Vignette scenario | Communication style | Vignette dialogue composition (RIAS utterances) | Vignette illustration |
|---|---|---|---|---|
| | | "Tough talk"Well-intentioned but stern reprimand | Provider utterances:<br>– 2 critiques<br>– 1 disapproval<br>– 1 closed-ended psychosocial question<br>– 1 closed-ended therapeutic regime question<br>– 1 medical information giving<br>– 1 bid for comprehension<br>Patient/provider utterances = 3/7 | |
| | | "Sharp talk"Angry, threatening, belittling | Provider utterances:<br>– 3 critiques<br>– 2 disapprovals<br>– 1 bid for comprehension<br>Patient/provider utterances = 3/6 | |

from the dialogue. We also chose to isolate each PPC style in separate vignettes, as participants had difficulty talking about individual styles when combined in the original vignettes. For vignettes demonstrating contrasting styles of PPC from a common dimension, we created a standard scenario, and manipulated only the communication style being tested. For example, in the "balance of power" scenario, the hypothetical patient needed to change medication. Provider dialogue represented provider-dominance in one vignette and shared power in the other. We aimed for consistency in vignette length (19–30 s) in order to demonstrate that within the same segment of time and with the same clinical scenario, different communication styles can be applied. Each vignette was accompanied by an illustration in order to provide a visual tool for reference. Illustrations for vignettes of the same dimension depicted both an identical background color and patient character, yet had slight differences in provider clothing, skin coloring, and body expression to indicate a different version of the provider character (Table 1).

At each site, a non-clinical staff member recruited eligible patients at their appointments over the course of one week. We used a systematic sampling frame to recruit participants who came at various points throughout the day and week. Participants completed surveys in a private location with an interviewer using a computer tablet. For each vignette scenario, interviewers asked participants to watch the two or three vignette variations while imagining themselves in the place of the scenario's hypothetical patient. Participants were then asked to choose their preferred PPC style for each of the three scenarios and explain their choice in an optional free response item. The order of scenarios and vignettes were randomized for each participant. To indicate relative value of their preferred PPC styles, participants were asked to build their ideal doctor by distributing an imaginary 1000 CFA francs amongst different types of PPC they had chosen in each of the three scenarios, giving greater amounts to the more important qualities. The survey also included questions about the participant's demographics, history of medical adherence and attendance at ART appointments. Opinions about the quality of PPC at their treatment center were measured on a four-point Likert scale: "very good", "good", "fair", or "bad".

After transferring data to Stata 13, we calculated descriptive statistics on demographics and vignette preferences. We also analyzed content of free responses to help interpret factors underlying vignette preferences and conducted binomial tests to determine differences in proportions choosing different vignettes. Next, we conducted logistic regressions to measure odds of choosing particular vignettes based on demographic characteristics, history of interruption in care or treatment, type of treatment center, and rating of PPC at their specific treatment center.

### 2.4. Ethical considerations

The Institutional Review Boards of the Johns Hopkins Bloomberg School of Public Health and the University of Sciences, Technologies and Techniques of Bamako approved the study. Verbal informed consent was obtained from all participants.

## 3. Results

### 3.1. Three dimensions of patient-provider communication

We developed a three-dimensional model of PPC (Table 1). Two local concepts – *adamadenya* (a Bambara term described below) and "sharing the talk" – bore resemblance to our original dimensions of "psychosocial regard" and "shared power," respectively. Despite some subtle differences, we treat the local concepts as essentially synonymous to the respective original dimensions for this study. The third dimension "showing the path" did not align with the original theoretical framework, but emerged from the qualitative results as a way to describe different PPC styles providers use to guide patient behaviors.

#### 3.1.1. Level of psychosocial regard ("adamadenya")

According to participants, one who exhibits high *adamadenya,* (lit.: "personhood"), demonstrates high empathy, interest in others and social conscientiousness. *Adamadenya* is the recognition that we all are on equal ground because of our human qualities:

> "To say that this person is not better than another person. A chicken is not better than a chicken. Male, female, that is not part of it. That is *adamadenya*" (M, 60s, Hospital 2).

*Adamadenya* also encompasses behaviors that acknowledge another's humanity during an interaction, such as being "happy to see you," asking about family or social life, laughing, or joking.

> "If I come, we great each other "How are you? It's been a long time. How is your health?" "Ah, my health is good." That is something, the doctor is not behaving like he is superior. He gives me his hand, we shake each other's hands" (M, 40s, Hospital 1).

A provider who exhibits high *adamadenya*, according to patients, behaves more like a patient's friend than an authority figure. Providers with high *adamadenya* are able to "get down to the level" of patients and comfort them in times of distress.

Low *adamadenya,* in contrast, could be thought of as a highly "academic" style, characterized by less social talk and more preoccupation with clinical tasks.

> "The doctors who are academic, for me, it means it is their work that they talk about. The way they say it in medical school. It is their paper that interests them. They read it, they say, 'You should take ART like this. You should come to your consultation' […] they do not practice the social part" (M, 20s, NGO clinic 2).

While no patients explicitly said they preferred an "academic" style over *adamadenya,* many did consider medical knowledge and skills among the top qualities they valued in a provider. Most participants appreciated *adamadenya*, but a few thought that there was a boundary—that being too social with patients might distract them from doing their job well.

#### 3.1.2. Balance of power ("sharing the talk")

When discussing different PPC styles, some participants also described providers who "own the talk" versus "share the talk." A provider who "owned the talk" dominated the conversation. Providers who "shared the talk," allowed more patient talk and "negotiation". Though shared power was not as prominent as psychosocial regard (*adamadenya*) in free discussion, many participants did point out the differences in power balance in the video vignettes. Some expressed a preference for "shared talk", while others thought that a good provider should "own the talk," in the form of asking useful questions and giving thorough explanations. These contrasting views signaled the importance of including this dimension in the vignette survey.

#### 3.1.3. Guiding patient behaviors ("showing the path")

Based on participant descriptions, we developed a third dimension of PPC consisting of three styles of guiding patient behaviors, or "showing the path": (1) "easy talk," (2) "tough talk" and (3) "sharp talk."[2] These concepts were often used when discussing how a provider reacts to a patient who has returned from an absence or had stopped taking medication.

In "easy talk," the provider speaks in a calm tone, sometimes "coaxes" or "cajoles" the patient, and does not raise his or her voice. "Easy talk" functions to calm or reassure, and aims to collaborate with the patient to find solutions without placing blame. While some patients felt that "easy talk" was good practice, others thought that going too easy on patients may permit them to repeat their mistakes. These latter participants felt "tough talk" could be more effective. "Tough talk" was described as a stern but well-intentioned reprimand; a truth that may hurt, but is told for one's own good.

> "If you know the truth and the truth is told to you, it can be a bit unpleasant for you. But you yourself know that it is true. That is how you change" (F, 30s, Community Health Center).

"Tough talk" may not be pleasant, but it was not typically considered disrespectful or belittling, like "sharp talk." Characterized by an angry tone that "shocks", "sharp talk" consisted of yelling, displaying a temper, scaring, threatening, or refusing to provide services. "Sharp talk", according to many participants, could be the reason patients refuse to return to their treatment center. Patient preferences in this dimensions seemed to vary, as some felt that an "easy" style should always be used, while others thought that there was a place in the consultation for "tough" or even "sharp" talk. Providers also had varied opinions on which to use, though most thought it depended on the person and the situation.

### 3.2. Patient preferences for communication styles

#### 3.2.1. Survey participant characteristics

The 141 survey participants had a mean age of 37.3 years (SD: 9.9) (Table 2). Females made up 72.3% of participants. Most participants had either a primary (25.5%) or secondary school education (26.6%), while 36.2% had less than a primary education and 12.1% had post-secondary education. Patients from the two hospital sites made up 37.6% of participants, patients from the two NGO facilities made up 38.3% and patients from the community health facility made up 24.1%.

Average number of years since HIV diagnosis among participants was 5.8 (SD: 4.0). Thirty-four percent of patients reported to have missed an appointment in the past year, and 26.6% reported ever having an interruption in ART.

#### 3.2.2. Vignette choice distributions

(1) *Level of psychosocial regard*: A slight majority of participants indicated that they preferred the vignette demonstrating high psychosocial regard (52.2%), a significantly higher proportion than those who chose the academic/biomedical style (22.5%; $p < 0.001$) or had no preference (25.4%; $p < 0.001$) (Table 3). The mean proportion of value (out of 1000 CFA francs) that participants placed on their chosen PPC style was statistically similar among those who chose high psychosocial regard (311.2, SD: 14.9) and those who chose academic/biomedical (296.4, SD: 21.0). In free response explanations, many participants who chose the vignette demonstrating high psychosocial regard emphasized the importance of a warm welcome. On the other hand, some participants who chose the academic/biomedical style said they valued that the provider asked to take the patient's temperature, a line of dialogue that replaced a question about the patient's family situation in the contrasting vignette.

(2) *Balance of power:* A similar percentage of patients reported that they preferred a shared power style (40.2%) and provider-dominant style (35.8%), significantly more than indicated no preference (24.1%; $p < 0.01$). In placing a value on these vignettes in relation to other choices, participants who chose the shared power style placed a higher relative value (in CFA francs) on their choice versus those who chose the provider-dominant style (357.6, SD: 24.1, versus 287.5, SD: 13.3, *t*-test $p < 0.001$).
Participants who offered explanations on their preference for shared power appreciated the way the doctor "let the patient talk." Some also explained that they disliked the way the provider in the provider-dominated vignette interrupted the patient.

> "To leave the patient to talk remains very important for us the

[2] Original Bambara terms: (1) *Kuma nôgônman* (2) *Kuma gèlènman* (3) *Kuma farinman*

**Table 2**
Vignette survey participant characteristics (n = 141).

| | n (%) |
|---|---|
| **Sex** | |
| Female | 102 (72.34) |
| Male | 39 (27.66) |
| **Mean age** | 37.27 (SD = 9.87) |
| **Mean years since diagnosis** | 5.81 (SD = 4.01) |
| **Education level** | |
| Less than primary | 51 (36.17) |
| Primary | 36 (25.53) |
| Secondary | 37 (26.24) |
| University | 17 (12.06) |
| **Treatment center type** | |
| Community or NGO | 88 (62.41) |
| Hospital | 53 (37.59) |
| **Missed an ART appointment in past year** | 48 (34.04) |
| **Experienced ART interruption** | 37 (26.62) |

patients, to talk and be heard, it is something we do not get at home" (F, 26, Community Health Center).

Participants who chose the provider-dominated style also offered explanations, including feeling like the doctor has more knowledge and should thus be the one deciding the course of treatment.

"I chose this one because it's the doctor who asked the patient. It's the doctor that knows the situation better than us ourselves" (F, 24, NGO clinic 2).

(3) *Guiding patient behaviors:* Most participants preferred the "easy" (38.4%) or "tough" (26.1%) style vignettes or both (14.5%), whereas a minority chose the "sharp" style (14.5%). Few participants had no preference among the three choices (7.3%).

On the whole, participants placed the more value on thier preferred style in the "guiding patient behaviors" dimension (mean: 339.7, SD: 229.8), relative to their preferred styles in the balance of power (mean: 246.6, SD: 194.8, t-test $p < 0.001$) and level of psychosocial regard dimensions (232.1, SD: 177.3, *t*-test $p < 0.001$). Participants also were most vocal during their free response explanations for guiding patient behaviors compared to the other dimensions. Patients who preferred "easy talk" pointed out the patience or gentleness of the provider:

"The patients are babies. You must talk to them slowly and be patient with them" (F, 39, Hospital 1).

Many participants who chose "tough talk" thought that the style would be effective in changing patient behavior.

"I like this one because the doctor said 'what you did was bad' […] if you go too easy with the talk, it loses its importance" (F, 49, Hospital 2).

Participants were especially vocal in regards to their feelings about "sharp talk." Those who rejected "sharp talk" in favor of "easy" and/or "tough" talk felt that the doctor must be patient and should not "scare" or "scold." A few even commented that they would not return to the health center should a provider address them in that manner. The minority who did choose "sharp talk" tended to externalize the vignette, criticizing the behavior of the hypothetical patient.

"If you do not take [ART] correctly, the doctors cannot do anything for you. They have told you since the start to not leave the treatment, and there are patients who don't listen" (F, 41, Community Health Center).

"If you want to get better, you must accept everything the doctor tells you" (M, 43, NGO clinic 1).

### 3.2.3. *Factors associated with vignette preferences*

Few participant characteristics were related to vignette preferences in bivariate analyses (Table 4). Higher education was related to higher odds of choosing the academic/biomedical style over the high psychosocial regard style (OR: 1.59, $p = 0.02$) and of choosing shared power over provider-dominant (OR: 1.41, $p = 0.04$). Compared to patients of the NGO clinics or community health center, patients of hospitals were more likely to indicate a preference for "tough" talk (OR: 2.34, $p = 0.03$). Further, participants who indicated preference for shared power rated the quality of PPC at their center significantly lower ($p < 0.01$) than those who chose provider-dominant or said they did not have a preference. Those who rejected "sharp" talk in favor of "easy" and/or "tough" talk rated the PPC at their treatment center significantly lower ($p = 0.02$) than those who said they preferred "sharp" talk or had no preference.

History of interruption in care or treatment was not related to any particular vignette preference. However, some participants did offer free response explanations that indicated influence of PPC style on their personal adherence and retention.

"The doctor spoke angrily to me and I left the medicine" (F, 32, Hospital 1).

"I chose this one because I had the same case [as the hypothetical patient who was absent from care]. The doctor spoke tough to me but after, I reflected on it and found that all he told me was true. It was for my own health" (F, 35, NGO clinic 2).

**Table 3**
Vignette preferences: distribution and relative values.

| Communication dimension | Communication style | Proportion choosing style n (%) | Mean value placed on style (SD) |
|---|---|---|---|
| **Level of psychosocial regard** | High psychosocial regard | 72 (52.17)[a] | 156.7 (15.1) |
| | Academic/ biomedical | 31 (22.46) | 75.4 (12.1) |
| | No preference | 35 (25.36) | – |
| **Balance of power** | Provider dominant | 49 (35.77) | 102.0 (12.5) |
| | Shared power | 55 (40.15) | 144.6 (17.7) |
| | No preference | 33 (24.09)[b] | |
| **Guiding patient behaviors** | "Easy talk" | 53 (38.41) ["easy" only] | 153.7 (15.2) |
| | "Tough talk" | 20 (14.49) [both "easy" and "tough"] | – |
| | | 36 (26.09) ["tough" only] | 117.6 (16.8) |
| | "Sharp talk" | 20 (14.49)[c] | 68.4 (16.1) |
| | No preference | 10 (7.25) | |

In binomial tests:
[a] Proportion choosing high psychosocial regard was significantly higher than academic [$p(k <= 3 \text{ or } k >= 72) < 0.001$] and no preference [$p(k <= 0 \text{ or } k >= 72) < 0.001$].
[b] Proportion choosing no preference was significantly lower than provider-dominant [$p(k <= 18 \text{ or } k >= 49) = 0.003$] and shared power [$p(k <= 13 \text{ or } k >= 55) < 0.001$].
[c] Proportion choosing "sharp talk" was significantly lower than "easy talk" and/or "tough talk" [$p(k >= 108) < 0.001$].

**Table 4**
Associations between participant characteristics and preferred vignettes – OR (95%CI).

| | Vignette preference: Level of psychosocial regard | | Vignette preference: Balance of power | | | Vignette preference: Guiding patient behaviors | | |
|---|---|---|---|---|---|---|---|---|
| | High psychosocial regard | "Academic"/ biomedical | Shared power | Provider dominant | "Easy talk" (only) | "Tough talk" (only) | "Easy Talk," "Tough Talk" or both | "Sharp talk" (only) |
| Female | 1.40 (0.65, 2.94) | 0.53 (0.23–1.24) | 0.82 (0.39–1.74) | 0.82 (0.39–1.74) | 0.71 (0.33–1.50) | 1.38 (0.58–3.31) | 0.73 (0.28–1.85) | 0.91 (0.32–2.56) |
| Hospital treatment facility | 1.62 (0.81, 3.25) | 0.89 (0.39–2.04) | 0.82 (0.40–1.68) | 0.82 (0.40–1.68) | 0.78 (0.38–1.56) | **2.34 (1.08–5.07)*** | 1.89 (0.77–4.63) | 0.50 (0.17–1.48) |
| Missed an ART appointment in past year | 1.30 (0.64–2.65) | 1.36 (0.59–3.11) | 1.08 (0.52–2.21) | 1.08 (0.52, 2.21) | 1.48 (0.73–3.02) | 0.59 (0.25–1.38) | 1.00 (0.42–2.36) | 0.84 (0.30–2.34) |
| Experienced ART interruption | 1.15 (0.54–2.46) | 1.38 (0.58–3.29) | 0.64 (0.29–1.42) | 0.64 (0.29–1.42) | 1.40 (0.65–3.01) | 1.04 (0.44–2.44) | 0.84 (0.34–2.04) | 1.54 (0.56–4.23) |
| Education level[a] | 0.93 (0.67–1.28) | **1.59* (1.08–2.35)** | **1.41 (1.01–1.97)*** | 0.89 (0.63–1.24) | 1.10 (0.79–1.53) | 1.39 (0.96–2.00) | 1.31 (0.87–1.99) | 0.98 (0.62–1.54) |
| Rating of PPC at treatment facility[b] | 0.92 (0.56–1.50) | 0.64 (0.36–1.16) | **0.50 (0.29–0.85)*** | 1.34 (0.79–2.26) | 0.72 (0.44–1.20) | 0.79 (0.45–1.38) | **0.44 (0.19–0.97)*** | **2.30 (1.02–5.16)*** |

* $p < 0.05$.
[a] Higher scores indicate more education (0 = less than primary; 1 = primary; 2 = secondary; 3 = university).
[b] Based on a 4-point scale, higher scores indicate better rating.

A substantial number of participants expressed no preference among contrasting PPC styles: 36.2% of participants indicated "no preference" in at least one dimension and 4.3% of participants indicated "no preference" in all three dimensions. Participants with higher education were more likely to indicate distinct preferences: every unit increase in education level was related to 0.25 fewer "no preference" choices ($p = 0.02$). In free responses, many participants responding with "no preference" claimed that they "did not have a problem" with any of the PPC styles presented. Some felt that they could not choose because they had never seen or experienced a situation like the one depicted in the vignette or because they do not have a choice in reality. As one participant explained:

> "The patient must accept everything the doctors say because it is the doctor that does all of the work for you. That is why none of these doctors said anything bad" (F, 47, Community Health Center).

## 4. Discussion

While it is known that PPC can affect retention and adherence in ART programs, developing contextually-relevant interventions to improve PPC requires formative research. Through qualitative analysis, we found that two basic dimensions of patient-centered communication, psychosocial regard and shared power, had close equivalent concepts in the local ethnographic landscape (*adamadenya* or "personhood" and "sharing the talk"). Nearly twice as many participants preferred the vignette representing high psychosocial regard versus a biomedical/academic style, yet preferences were statistically similar among the shared power and provider-dominated vignettes. These results reflect literature on PPC preferences in other settings: high psychosocial regard tends to be preferred by most patients (Swenson et al., 2004), while preferences for power balance tend to be more varied (Chewning et al., 2012). Factors like patient attitudes toward decision-making responsibilities, health and disease status, and prior experiences with providers may affect power preferences (Say et al., 2006).

While relevant, the two original dimensions of patient-centeredness did not completely capture the range of PPC types participants discussed. Both qualitative and quantitative data supported the importance of the third dimension: guiding patient behaviors ("showing the path"). Participants were highly vocal in expressing opinions regarding "showing the path" in IDIs, FGDs and survey free-response items, and survey participants placed a higher relative value on their vignette preference for this dimension compared to the other two. Aspects of previous literature from sub-Saharan Africa validate the relevance of this dimension, as the "sharp talk" variation reflects the "scolding" often cited as a barrier to HIV patient retention (Dahab et al., 2008; Layer, Brahmbhatt, et al., 2014; McMahon et al., 2016).

Recommending the ideal style of "showing the path", however, is less straight-forward. "Sharp talk" has not one but two alternatives: "easy talk"' and "tough talk". While few participants preferred "sharp talk", preference for the two alternatives was about evenly split and were not related to demographic characteristics or history of interruptions in care or treatment. It may be that effectively guiding behavior is a highly individualized process, and the variation in reported patient preferences was to be expected. According to some providers in our study, the choice should be based on knowledge gained from an ongoing relationship with the patient. Others believed that the three styles represent a hierarchy, and providers should begin with "easy talk" and escalate to "tough talk" if needed. There were mixed opinions on whether or not "sharp talk" could be effective as a last resort.

While some participants did discuss their own interruption in care and treatment as explanations for their choices, these factors were not quantitatively associated with the likelihood of choosing any particular vignette. As our data were limited to measures of preference, we cannot tell whether patients' experiences with PPC were concordant or discordant with their stated preferences. As we found that different patients preferred different styles of guiding patient behavior, it may be that concordance with a patient's preferred style is a more important factor in retention in care than preferred style. Evidence from our qualitative work supports the notion that a more individualized approach to PPC may help patients overcome barriers to continued retention and adherence (Hurley et al., 2017).

We found few significant associations between demographic characteristics and vignette preference, though education level stood out as one potentially important predictive variable. Like some studies in high-income settings, participants with higher education were more likely to indicate preference for shared power (Say et al., 2006). Yet contrary to the association reported among patients Sierra Leone (Lau et al., 2013), we found that higher education increased odds of choosing a biomedical (not high psychosocial regard) style. From a

patient-centered perspective, our findings among highly educated participants are somewhat paradoxical, as shared power is characteristic of patient-centeredness, but a biomedical style contrasts with it. However, it may be that the social talk that characterizes *adamadenya* may help a lower educated patient feel on equal ground with the provider, but those with a higher education may already feel equal to the provider and expect a more academic style to demonstrate quality or technical competence. Further, participants who felt the PPC at their treatment center needed improvement were more likely to choose shared power and reject "sharp talk" style, suggesting that increases in shared power and decreases in "sharp talk" may improve satisfaction with PPC among these patients.

Beyond these factors, no other demographic characteristics were associated with preference for any vignette. Other researchers have questioned the utility of predicting PPC preferences with demographic variables. Garfield and colleagues modeled preferences for shared decision-making with a number of demographic variables among patients in the UK and found that their model could only account for 14% of the variance in preference (Garfield, Smith, Francis, & Chalmers, 2007). These and our present findings suggest that providers should be wary of making assumptions about PPC preferences based on a demographic profile.

The "no preference" responses and their significant association with lower education deserve reflection. It possible that participants who offered "no preference" responses did not fully understand the task. Some free responses suggest that many did not feel empowered to express a choice. Some seemed to consider the provider authority unquestionable, and thought it was strange that we were asking their opinion on provider behavior. If lack of empowerment is a viable explanation, these "no preference" responses hold significance beyond survey validity. In the environment of a health facility, participant reluctance to offer opinions signals a need for patient empowerment in addition to improvements in provider communication skills, especially considering the positive relationship between active patient involvement and ART adherence (Chen et al., 2014; Ironson, Lucette, & McIntosh, 2015). One model intervention in Namibia reported increased question-asking and decreased fear among ART patients who underwent a communication empowerment training (Maclachlan, Potter, et al., 2016; Maclachlan, Shepard-Perry, et al., 2016).

A key limitation of this study is that vignette preferences may not necessarily correspond with the PPC styles participants would prefer in reality or those that would be most effective in keeping them engaged in care. Future research should aim to measure patient satisfaction and health outcomes following actual experiences with different PPC styles. The possible discrepancy between what participants would actually prefer and the vignette they chose may help explain why some participants indicated "no preference" or why some chose "sharp talk." We noticed that many who chose "sharp talk" considered the hypothetical patient as delinquent and deserving of scolding, and typically did not speak in terms of what they would want if they themselves were in the situation.

Though we purposively sampled sites to represent the range of HIV care settings available in Bamako, the dimensions of PPC we identified may not accurately reflect how PPC is conceptualized in other care environments or cultural contexts. We do, however, believe that our model offers some transferability in Mali and beyond, as the first two dimensions reflect established concepts and the third reflects the type of patient-provider interactions highly cited in the literature on ART retention in sub-Saharan Africa. Beyond Mali, formative research is necessary to determine if "showing the path" or other alternative dimensions fit within local PPC conceptualizations.

The dimensions of patient-centeredness we present can be helpful in guiding programs to improve PPC for ART patients; however, formative research should explore possible alternative conceptualizations of PPC that may resonate with patients in other settings. Developing provider skills in expressing psychosocial regard is likely to yield positive effects—not only was it the most preferred style in our study, but literature from a variety of settings has suggested that it has measurable impact on patient outcomes, including ART adherence (Flickinger, Saha, Moore, & Beach, 2013). Providers in Mali should recognize that patients with higher education may prefer a more academic style. Skills trainings should also aim to help providers offer patients more power in clinical discussions, but to also recognize that some individual patients may be more comfortable with the provider assuming more control. Different patients may also prefer different styles of "showing the path," but most believe that "sharp talk" leads to negative consequences. While interventions that match patients with providers according to PPC style (Kiesler & Auerbach, 2006) could be piloted in this setting, large-scale efforts to promote better PPC may be most efficient and effective if focused on fostering provider skills in psychosocial regard, allowing patients to assume the level of control they feel comfortable with, and avoiding "sharp" talk.

With expanding access to ART and an increasing burden of chronic disease in sub-Saharan Africa, it is more critical than ever to develop strategies to keep patients retained in long-term care. Improving provider skills in PPC is one of these strategies, and should be considered a high priority for ART programs in Mali and beyond. Continued efforts to understand, develop, and tailor PPC styles to patients in ART and other chronic treatment programs may help increase patient retention, and ultimately, clinical outcomes.

## Conflicts of interest

The authors declare no conflicts of interest.

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## Appendix A. Supplementary material

Supplementary data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.ssmph.2017.05.012.

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