Community Mental Health Journal (2019) 55:1402–1410
https://doi.org/10.1007/s10597-019-00394-9

ORIGINAL PAPER

Self-Esteem and HIV Infection in Morocco: Associated Factors Among People Living with HIV—Results from a Community-Based Study

Adeline Bernier[1] · Amal Benmoussa[2] · Mohamed Kamal Hilali[3] · Emilie Henry[1] · Joanne Otis[4] · Mohamed Loukid[3] · Marie Préau[5]

Received: 3 April 2017 / Accepted: 6 March 2019 / Published online: 30 March 2019

Abstract

People living with HIV (PLHIV) face specific issues regarding mental quality of life (QoL), in particular self-esteem. The objective of this study was to measure self-esteem and to identify associated factors among PLHIV in Morocco. A 125-item questionnaire was administered to 300 PLHIV. The dependent variable was adapted from Rosenberg's self-esteem scale (range 0–4). A weighted multiple linear regression was performed. The mean level of self-esteem was 2.4 ± 1.0. The factors independently associated with self-esteem were: feeling of loneliness ($p = 0.001$), perceived seriousness of infection ($p = 0.006$), thinking serostatus disclosure was a mistake ($p = 0.007$), thinking HIV infection will last for life ($p = 0.008$), sexual orientation ($p = 0.050$), satisfaction with sexual life ($p = 0.019$) and perceived treatment efficacy ($p = 0.009$). These results underline the need for evidence-based interventions (e.g. anti-discrimination measures, interventions to prevent social isolation of PLHIV, support in the serostatus disclosure process), in order to improve the social environment and eventually improve their self-esteem and QoL.

Keywords Self-esteem · People living with HIV · Morocco · Sexual orientation · Serostatus disclosure · Discrimination

✉ Adeline Bernier
abernier@coalitionplus.org

Amal Benmoussa
benmoussa.alcs@gmail.com

Mohamed Kamal Hilali
hilali@uca.ma

Emilie Henry
ehenry@coalitionplus.org

Joanne Otis
otis.joanne@uqam.ca

Mohamed Loukid
loukid@uca.ma

Marie Préau
marie.preau@univ-lyon2.fr

[1] Coalition Internationale Sida, Tour Essor, 14 rue Scandicci, 93500 Pantin, France

[2] Association de Lutte Contre le Sida, Casablanca, Morocco

[3] Faculty of Science Semlalia, Université Cadi Ayyad, Marrakech, Morocco

[4] Université du Québec à Montréal, Montreal, Canada

[5] Groupe de Recherche en Psychologie Sociale, Université Lumière Lyon 2, Lyon, France

Introduction

HIV infection prevalence in general population in Morocco is low (i.e. 0.1%) (UNAIDS 2012), but is much higher among key populations (KP) [i.e. sex workers (SW), men having sex with men (MSM), people who inject drugs (PWID)], with estimations around 1.4–5.1% for SW, 2.8–5.6% for MSM, and 11.4% for PWID (Johnston et al. 2013; Kouyoumjian et al. 2013; Ministère de la Santé (Royaume du Maroc) 2015; Mumtaz et al. 2014). More than 70% of new infections occur among KP, mostly via unprotected sexual intercourse [Ministère de la Santé (Royaume du Maroc) 2015].

The Moroccan context, both socially and legally, is not in favor of KP, in particular MSM, as same-sex sexual relationships are illegal and can be punished by various sentences, including imprisonment. MSM take the risk of being rejected by their family/friends, and even of being dragged to court. Stigma and discrimination is also very high for other KP and people living with HIV (PLHIV) [Ministère de la Santé (Royaume du Maroc) 2015], which may affect their quality of life (QoL).

According to the World Health Organization (WHO), QoL is individuals' perception of their position in life in the

context of the culture and value systems in which they live and in relation to their expectations, standards and concerns ('The World Health Organization Quality of Life Assessment (WHOQOL)' 1998). Precious information about QoL, in particular the mental's one, may be provided by studying self-esteem. Self-esteem may be defined as a person's overall subjective emotional evaluation of his/her own worth (Coopersmith 1967; Martinot 2001; Rosenberg 1965). Self-esteem is a complex and affective component of the self, which builds up throughout one's life and might be influenced by numerous factors. In a positive way, self-esteem has been identified as a determinant of the subjective well-being (George 2000), which may have an impact on QoL (Manhas 2014). But associations have also been found between negative attitudes towards the self and various at-risk behaviors and mental health indicators, in particular depression and anxiety, both in general population (Orth et al. 2009; Sowislo and Orth 2013) and among PLHIV (Herek et al. 2013; van Dyk 2008). Among PLHIV, several studies showed a higher prevalence of depression than in general population (Bing EG et al. 2001; Pence 2009). The lower self-esteem among PLHIV may be related with rejection, loss of social identity, and the physical consequences of HIV infection (van Dyk 2008). Available evidence thus suggests the existence of specific issues regarding mental health of PLHIV, which might have consequences throughout HIV prevention and care continuum (Letta et al. 2015; Yehia et al. 2015).

In Morocco, there is no data regarding self-esteem among PLHIV. Considering the context, it seems essential to explore this issue. Herein, the objective was to measure self-esteem and to identify associated factors among PLHIV benefiting from services of a community-based organization (CBO) in Morocco (i.e. Association de Lutte contre le Sida, or ALCS).

Methods

This is a sub-study of a community-based cross-sectional research study, "Partages" (meaning disclosure in French). Implemented by a mixed (researchers/CBO members) international consortium from seven countries, its objective was to identify factors associated with serostatus disclosure in contexts where available data are rare.

Participants

The inclusion criteria were: being HIV positive, being 18 year-old and over, being aware of one's seropositivity for more than 6 months and being in contact with ALCS. A convenience sample of 300 PLHIV was recruited in 2011 in five cities (Agadir, Casablanca, Fes, Marrakech, Rabat).

Questionnaire and Procedure

After providing written informed consent, participants were interviewed face-to-face by CBO members, most of whom were living with HIV. All were trained beforehand in interviewing techniques. The questionnaire included 125 questions, divided into eight sections: socioeconomic data, history and contact with HIV, serostatus disclosure and reaction of others to disclosure, self-efficacy, intimate and social lives, sexuality, QoL and contact with CBOs. Data were kept strictly confidential.

Scales

Several scales were included in the analysis. Validated psychometric scales were pre-tested on the field, and adapted to the cultural contexts of the participating countries. The internal coherence of the scales was evaluated using ordinal alphas, as recommended by Gadermann et al. (2012). Regarding self-esteem, the scale was adapted from the Rosenberg's self-esteem scale (Nunnally 1978; Rosenberg 1965), keeping four items of the original scale and using dichotomous answers (Disagree/Agree). The score ranged from 0 (low self-esteem) to 4 (high self-esteem) ($\alpha = 0.71$).

Explanatory Variables

Based on existing literature and field experience of community members, the following categories of variables were tested for their association with self-esteem: socio-demographic characteristics, number of years since HIV diagnosis, circumstances of HIV test, reactions to disclosure, beliefs about HIV infection, support from family/partner/friends, sexual orientation and satisfaction with sexual life. Additionally, two scales were included as co-variants. The first one, adapted from Moss-Morris's revised illness perception questionnaire (IPQ-R) (Moss-Morris et al. 2002), measured participants' self-perceived degree of the seriousness of their HIV infection, using five dichotomous items (No/Yes). The score ranged from 0 (low) to 5 (high) ($\alpha = 0.81$). The second one, adapted from Bandura scale, measured self-perceived treatment efficacy, using three dichotomous items. The score ranged from 0 (low efficacy) to 3 (high efficacy) ($\alpha = 0.76$).

Statistical Analysis

The sample was weighted using a variable based on the socio-demographic characteristics (age group, gender and recruitment site) of PLHIV benefiting from ALCS' services, to ensure that the sample was representative of this

population. To examine the relationship between self-esteem and other variables, Pearson's correlation test or non-parametric tests (Mann–Whitney test or Kruskal–Wallis test) were used. To identify independent associations, multiple linear regression analysis was performed using stepwise variable selection method. Variables with $p \leq 0.20$ in univariate analyses were selected for multivariate analysis. A complete case analysis was performed. The assumption of a linear relationship between the dependent and independent variables was assessed using a histogram of the residuals, with a scatter plot of the standardized residuals to the standardized predicted values. Multicollinearity was assessed using the variance inflation factor (VIF). In this model, no evidence for multicollinearity was observed. All significance tests were two-sided and the results were considered statistically significant when p-value ≤ 0.05. Data management and statistical analyses were performed using SPSS.

Compliance with Ethical Standards

All authors declare no conflict of interest. This project involved human participants; consequently, before the start of the field work, the Ethics Committee at the Faculty of Medicine and Pharmacy in Casablanca approved the study (November 2010—Number of Approval: 11/10). Any person who was interested in participating in the study and who filled in the inclusion criteria was first explained about the study, could ask any question (s)he wanted, and then signed a written informed consent, before being administered the questionnaire. Other: all authors certify responsibility.

Results

The mean self-esteem for the 300 participants was 2.4 ± 1.0. The socio-demographic characteristics are presented in Table 1 (left-hand column). There were 147 men (49%), 142 women (47%) and a few transgender (4%). The mean age was 36 years. More than a quarter of the sample (29%) was illiterate. More than half of the participants (57%) were employed. Four out of ten participants (43%) were in a relationship. Regarding sexual orientation, 87% of the participants declared to be heterosexual and 12% to be either homosexual, bisexual or transsexual.

History with HIV infection and diagnosis, experience with disclosure, participants' opinion about HIV infection

Table 1 Socio-demographic characteristics of the participants included in the analysis (n = 300), and associated univariate analyses

Characteristics	N (%) or mean ± SD	Mean self-esteem ± SD or Pearson's correlation coefficient	p-value
Gender			
Man	147 (49.0)	2.5 ± 1.0	0.033*
Woman	142 (47.3)	2.2 ± 1.1	
Transgender	11 (3.7)	2.0 ± 0.0	
Age	36.3 ± 7.9	0.13	0.028*
Level of education			
No education	86 (28.7)	2.3 ± 1.0	0.325
Secondary education or less	192 (64.0)	2.3 ± 1.0	
Post-secondary education	19 (6.3)	2.8 ± 1.0	
Other	3 (1.0)	2.2 ± 1.3	
Main activity			
Unemployed/student/housewife	130 (43.3)	2.2 ± 1.1	0.018*
Formal or informal employment	170 (56.7)	2.5 ± 0.9	
Current relationship status			
Not in a relationship	170 (56.7)	2.3 ± 1.0	0.106*
In a relationship	130 (43.3)	2.5 ± 1.0	
Having children			
No	135 (45.0)	2.3 ± 1.0	0.988
Yes	165 (55.0)	2.4 ± 1.0	
Sexual orientation			
Heterosexual	261 (87.0)	2.4 ± 1.0	0.006*
Homosexual/bisexual/transsexual	35 (11.7)	1.9 ± 0.9	
Missing data	4 (1.3)	–	

SD standard deviation

*p-value < 0

Table 2 History with HIV infection and diagnosis, experience with disclosure, participants' opinion about HIV infection, as well as social life with HIV (n = 300), and associated univariate analyses

	N (%) or mean ± SD	Mean self-esteem ± SD or Pearson's correlation coefficient	p-value
A—History with HIV infection			
Number of years since HIV diagnosis	4.2 ± 3.5	0.04	0.516
HIV test because of symptoms			
No	122 (40.7)	2.4 ± 1.0	0.710
Yes	178 (59.3)	2.3 ± 1.1	
Taking antiretroviral treatment			
No	31 (10.3)	2.7 ± 1.1	0.067*
Yes	269 (89.7)	2.3 ± 1.0	
B—Experience with disclosure			
Serostatus disclosure			
No	57 (19.0)	2.4 ± 1.0	0.645
Yes	229 (76.3)	2.3 ± 1.0	
No, but made the person understand	14 (4.7)	2.2 ± 0.7	
Ever asked for help to disclose your serostatus			
No	268 (89.3)	2.4 ± 1.0	0.544
Yes	31 (10.3)	2.2 ± 1.3	
Missing data	1 (0.3)		
Reaction after disclosure: support			
No	88 (29.3)	2.3 ± 1.0	0.219
Yes	212 (70.7)	2.4 ± 1.1	
Reaction after disclosure : rejection			
No	227 (75.7)	2.5 ± 1.0	0.004*
Yes	73 (24.3)	2.0 ± 0.9	
Thinking serostatus disclosure was a mistake			
No	205 (68.3)	2.6 ± 1.0	< 0.001*
Yes	95 (31.7)	2.0 ± 0.9	
C—Participants' opinion about HIV infection			
Thinking HIV infection will last for life			
No	121 (40.3)	2.6 ± 0.9	0.001*
Yes	178 (59.3)	2.2 ± 1.0	
Missing data	1 (0.3)	–	
Thinking treatment will cure HIV infection			
No	156 (52.0)	2.2 ± 1.1	0.053*
Yes	136 (45.3)	2.5 ± 0.9	
Missing data	8 (2.7)		
Perceived seriousness of infection (scale)	3.7 ± 1.4	− 0.36	< 0.001*
Perceived treatment efficacy (scale)	2.8 ± 0.5	0.20	< 0.001*
D—Social life with HIV			
Moral support in the previous 12 months			
No	121 (40.3)	2.2 ± 1.1	0.022*
Yes, but not enough	75 (25.0)	2.4 ± 1.0	
Yes	103 (34.3)	2.6 ± 0.9	
Missing data	1 (0.3)		
Number of PLHIV known			
<2	109 (36.3)	2.3 ± 1.0	0.583
≥2	186 (62.0)	2.4 ± 1.0	
Missing data	5 (1.7)		
Satisfaction with sexual life			
Unsatisfied	118 (39.3)	2.1 ± 1.0	< 0.001*

Table 2 (continued)

	N (%) or mean ± SD	Mean self-esteem ± SD or Pearson's correlation coefficient	p-value
Satisfied	172 (57.3)	2.6 ± 1.0	
Missing data	10 (3.3)	–	
Feeling of loneliness			
No	81 (27.0)	2.9 ± 0.8	< 0.001*
Yes, sometimes	74 (24.7)	2.4 ± 1.0	
Yes, every day	132 (44.0)	2.0 ± 1.0	
Missing data	13 (4.3)	–	
Need to talk with healthcare personnel			
No	50 (16.7)	2.6 ± 1.0	0.074*
Yes	250 (83.3)	2.3 ± 1.0	

SD standard deviation

*p-value < 0

as well as social life with HIV are presented in Table 2 (left-hand column). On average, participants knew about their HIV infection for 4 years. A large majority (90%) were taking antiretroviral treatment (ARV). Almost two participants out of 10 (19%) had not disclosed their serostatus to anyone. For 73 participants (24%), the disclosure process was somehow complicated and they underwent negative reactions (i.e. rejection) after disclosure. Almost a third of them (32%) declared it was a mistake to disclose their serostatus. In terms of opinion about HIV infection, four participants out of ten declared that their HIV infection will not last for life, and 45% considered that ARV will cure their HIV infection. The mean perceived seriousness of infection and treatment efficacy were 3.7 ± 1.4 and 2.8 ± 0.5, respectively. Regarding social life with HIV, four participants out of ten declared not having received moral support in the previous 12 months. More than half of the participants (57%) considered they were satisfied with their sexual life. Almost seven participants out of ten declared they felt lonely, either sometimes or every day, and 83% of the participants needed to talk with healthcare personnel of their difficulties living with HIV.

The analyses results are presented in Tables 1 and 2 (univariate analysis, right-hand columns), and 3 (multivariate analysis). Due to the complete case approach, only 274 participants were included in the final multivariate model. The following factors were independently and negatively associated with self-esteem: feeling of loneliness (p = 0.001), perceived seriousness of infection (p = 0.006), thinking serostatus disclosure was a mistake (p = 0.007), thinking HIV infection will last for life (p = 0.008), and sexual orientation (p = 0.050). The following factors were independently and positively associated with self-esteem: perceived treatment efficacy (p = 0.009) and satisfaction with sexual life (p = 0.019). The adjusted R^2 was 0.26.

Table 3 Factors independently associated with self-esteem, multivariate analysis (n = 274)

Variable	Multiple regression analysis (standardized coefficients; β)	p-value
Feeling of loneliness (Yes, everyday vs. Yes, sometimes vs. No)	−0.19	0.001
Perceived seriousness of infection (scale)	−0.17	0.006
Thinking serostatus disclosure was a mistake (Yes vs. No)	−0.15	0.007
Thinking HIV infection will last for life (Yes vs. No)	−0.14	0.008
Sexual orientation (homosexual/bisexual/transsexual vs. heterosexual)	−0.10	0.050
Satisfaction with sexual life (Satisfied vs. Unsatisfied)	0.13	0.019
Perceived treatment efficacy (scale)	0.14	0.009

As a complete case analysis was performed, 26 participants were not included in the multivariate analysis because of missing data for the variables of the final multivariate model

Discussion

This is the first study to explore self-esteem issue among Moroccan PLHIV. In this community-based research, factors associated with self-esteem were the feeling of loneliness, thinking serostatus disclosure was a mistake, sexual orientation, satisfaction with sexual life, and several variables related with representations about HIV infection and treatment.

The sociodemographic characteristics suggest that the sample is quite balanced in terms of gender (male to female ratio close to 1), relatively young (mean age of 36), and with a low-to-medium level of education (low-to-medium level of schooling for 64% of the participants). These characteristics are similar to those of the national cohort of PLHIV [Ministère de la Santé (Royaume du Maroc) 2015]. However, in terms of gender identity (almost 4% of participants declared to be transgender), sexual practices (12% declared being homosexual/bisexual/transsexual), and the personal history after HIV diagnosis (24% were rejected after serostatus disclosure, 70% declared feeling lonely, 83% needed to talk with healthcare personnel), the sample seems to have specific characteristics. One explanation might be that ALCS reach more vulnerable people, who are in strong need of support.

The mean level of self-esteem was 2.4 (scale ranging between 0 and 4). This is a relative level, quite difficult to compare with other studies. In Morocco, data regarding self-esteem in general population are scarce, most studies having been conducted on teenagers or seniors (Baali et al. 2011; Eloirdi et al. 2014). Herein, the level of self-esteem among Moroccan participants seems to be quite low, underlining the importance of exploring this issue.

Among the factors associated with self-esteem, the factor with the strongest negative β coefficient was the feeling of loneliness. An HIV diagnosis may have a profound impact on psychosocial aspects of someone's life, and may disrupt or break social relationships, whether as a prejudice (because of discrimination for example) or as a choice, i.e. as a coping mechanism to avoid stigma (Laryea and Gien 1993). Herein, 44% of the participants declared feeling lonely every day, indicating a strong social isolation.

Thinking serostatus disclosure was a mistake was significantly and negatively associated with self-esteem. Disclosing one's serostatus is a major challenge for PLHIV, and may have positive consequences (e.g. psychological and/or material support, discussions around condom use within couples, partners' testing) or negative consequences (e.g. discrimination, familial rejection, social exclusion, physical and/or emotional violence) (Chaudoir et al. 2011). The link between serostatus disclosure and self-esteem has already been documented in several studies. In the study of Stutterheim et al. (2011), PLHIV who didn't manage to hide their seropositivity declared more frequent episodes of discrimination, had a lower self-esteem and received less social support than those who chose to disclose their serostatus to a few well-chosen persons (Stutterheim et al. 2011). Herein, 32% of the participants thought it had been a mistake to disclose their serostatus and 24% declared having been rejected following disclosure, reflecting negative experiences surrounding serostatus disclosure, which may have a detrimental effect on their familial and social relations (Henry et al. 2015). This is consistent with the fact that 40% of the participants declared not having received moral support in the last 12 months. Negative reactions following serostatus disclosure might cause negative social interactions, which may affect PLHIV' mental health, all the more if this negative reaction comes from loved ones (Derlega et al. 2003; Simoni et al. 2005).

Herein, sexual orientation was associated with self-esteem, heterosexual participants having a higher self-esteem than homosexual/bisexual/transsexual participants. In Morocco, same-sex sexual relationships are illegal, punishments going up to 3 years of imprisonment. Individuals are regularly imprisoned for this charge (Human Rights Watch 2015). Moreover, the sociocultural context does not allow an openness regarding sexuality and sexual diversities. The internalizing of societal negative beliefs about homosexuality has been described by Gonsiorek (1988) as a process in which societal "negative attitudes toward homosexuality…are incorporated into self-image, creating various psychological distortions and reactions". This process can be referred to as "internalized homonegativity" (IH) (Gonsiorek 1988). In a socio-cognitive framework, these beliefs result in negative mood states that can lead to difficulties with managing negative affect, resulting in low self-esteem, depression and anxiety disorders. This concept is supported by findings indicating that IH is linked to lower self-esteem and greater anxiety and depression (Igartua et al. 2003; Ross et al. 2001).

On the contrary, satisfaction with sexual life was positively associated with self-esteem. Sexual life is an undeniable element of QoL, in general population as well as for PLHIV (Skevington et al. 2010). Sexual health and sexual life have been included in the comprehensive WHO definition of QoL ('The World Health Organization Quality of Life Assessment (WHOQOL)' 1998). Overall well-being is positively associated with sexual pleasure, sexual satisfaction and high sexual self-esteem (Anderson 2013; Lazăr et al. 2014). The association between self-esteem and sexual satisfaction was found in several studies (Anderson 2013; Higgins et al. 2011).

Three variables related to representations about HIV infection (e.g. seriousness, duration and treatment efficacy)

were associated with self-esteem in this study. HIV infection has become a chronic infection in most contexts, with a life-long treatment for which the patient plays a direct role. Thus, representations PLHIV have about their infection and the associated treatment are essential to explore, because they may have a strong impact, in particular on treatment adherence (Ferreira et al. 2010; Spire et al. 2002). In this study, participants who thought that HIV infection will last for life and those who thought that HIV infection is serious had a significantly lower self-esteem. This may be explained by the feeling of guilt that PLIHV may experience because of their infection. This feeling may cause a decline in self-esteem by depreciation of one's own ability to avoid at-risk situations. Another hypothesis would be that people with low self-esteem would be more likely to think that HIV will last for life or is serious. On the contrary, PLHIV who said that ARV treatment efficacy was high had a significantly higher self-esteem.

In this study, age, gender, level of education, relationship status or main activity were not significantly associated with self-esteem, contrarily to what was found in previous studies in general population (Josephs et al. 1992; McMullin and Cairney 2004; Orth et al. 2010; Shaw et al. 2010; Twenge and Campbell 2002). Several of these variables, i.e. age, gender and main activity, were associated with self-esteem in univariate analysis, but in the final multivariate model, variables related to the consequences of HIV infection were predominant. Thus, it seems that in the participants' life trajectory, HIV infection was a major event with profound effects on mental QoL and self-esteem.

This study has some limitations. First, we used a convenience sample of PLHIV in contact with CBOs. The fact that the PLHIV came to the CBO's centers and that they trusted the organization facilitated the recruitment. This type of recruitment limits the ability to extrapolate the results, the sample not being representative of all Moroccan PLHIV. However, the objective was to better understand self-esteem issues among PLHIV in contact with CBOs, not among a representative sample of PLHIV.

Second, the study being cross-sectional, the dynamics of the process could not be captured. Self-esteem is a very complex and dynamic component, influenced by life events and personal situation, which may strongly change over time.

Third, data collection included a number of biases. The fact that the interviewers were persons working for ALCS might have influenced participants' responses, in particular for questions regarding self-esteem. In addition, the answers to some questions about intimacy and sexuality can be influenced by desirability biases, sexuality being a difficult topic in the Moroccan society. However, interviewers had been trained beforehand on these aspects, to limit these biases.

Finally, most scales in the study, including self-esteem scale, used dichotomous options (yes/no, agree/disagree) instead of a more traditional 5-point Likert scale. This choice was made because during the pre-test of the questionnaire, respondents were not comfortable using Likert scales in some of the host countries (especially Mali and the Democratic Republic of the Congo). Dichotomous items were easier to translate and to understand in local languages. However, they reduced the number of possible variations and made the analyses more complex. Nevertheless, we were still able to adequately analyze these scales by using methods adapted to dichotomous items.

Conclusion

This study is the first to address the issue of self-esteem among PLHIV in Morocco. The level of self-esteem among Moroccan participants was quite low. Various factors were associated with self-esteem: sexual orientation, feeling of loneliness, representations about HIV infection and treatment, and factors related with serostatus disclosure. These results underline the need for evidence-based interventions, in order to improve the social environment and eventually improve their self-esteem and quality of life. These interventions might be for example anti-discrimination and anti-homophobia measures, interventions to prevent social isolation of PLHIV or support in the serostatus disclosure process. On this matter, interventions aiming at empowering PLHIV regarding serostatus disclosure process, helping them finding strategies to disclose and/or to keep the secret exist, like the Gundo-So program in Mali (ARCAD-SIDA and Coalition PLUS, 2014).

Acknowledgements The authors would like to thank all those living with HIV who agreed to answer the study questionnaire, and the community-based organizations teams for their involvement in the organization of data collection. This study could not have been performed without the technical support provided by Coalition Internationale Sida and the financial support provided by the French Agency of AIDS Research (ANRS) and Sidaction. The authors would also like to thank the members of the PARTAGES group for their contribution in the implementation of this project.

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