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Health-information needs of HIV-positive adults in Latin America and the Caribbean: an integrative review of the literature

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Abstract

An assessment of information needs is essential for care planning for patients living with chronic diseases such as human immunodeficiency virus (HIV). The extent to which these assessments have been conducted in Latin America and the Caribbean (LAC) is unknown. The purpose of this study was, therefore, to identify, evaluate, and summarize what research has been conducted to examine patient perceptions of their health-information needs among adults living with HIV in LAC. Using an integrative review methodology, a literature search of six databases was conducted in April and May 2015. Inclusion criteria were peer-reviewed articles published in English or Spanish that assessed the information needs of HIV-positive patients living in LAC. The quality of included articles was assessed and relevant characteristics of each article were extracted, compared, and presented. Searches returned 1885 citations, 11 of which met inclusion criteria. Studies included were conducted in 8 of 33 countries, used multiple research designs, demonstrated varying needs between populations, and found numerous unmet information needs. Information about HIV in general, methods of infection transmission, antiretroviral medications, other sexually transmitted diseases, and effective coping mechanisms were the most commonly mentioned needs. Healthcare providers were the largest and most reliable source of health information for many participants and it was emphasized that in order for health education to be effective, programs should include both individual and group components. Patients indicated that they may have difficulty processing and using information through an incorrect understanding of medications, not changing risk behaviors, and by stating that information can be overwhelming or poorly communicated. Further research on information needs is warranted so that healthcare providers and organizations may provide the information patients need to appropriately manage their health.

Keywords

Health-information needs; Latin America; Caribbean; HIV/AIDS; health education; needs assessment

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Introduction

Human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) continue to affect millions globally (UNAIDS, 2013). Rates of new infections have generally decreased in Latin America and the Caribbean (LAC); however, approximately 95,000 new cases of HIV are still diagnosed there yearly (García, Bayer, & Cárcamo, 2014). LAC is characterized by tremendous geographic, population, and cultural diversity and is considered the most socially inequitable region in the world (Barreto et al., 2012; García et al., 2014). This inequity gives rise to numerous health disparities and leads to HIV/AIDS infections that are spread unevenly across countries, social classes, and risk groups (De Boni, Veloso, & Grinsztejn, 2014).

Advances in antiretroviral therapy (ART) as treatment for HIV have shown such efficacy that HIV is now classified as a chronic condition associated with a longer life expectancy and lower morbidity providing ART adherence (Deeks, Lewin, & Havlir, 2013; WHO, 2013). Governments in LAC were among the first to offer widespread access to ART for HIV-positive patients in the late 1990s; as a result, LAC now has the highest ART coverage of any low- or middle-income region in the world (García et al., 2014). Regardless, access and adherence to treatments may still be a problem in rural or underdeveloped areas (Dutta, 2009; Shariful Islam & Zabed Ahmed, 2012). Additionally, information regarding healthy lifestyle techniques, effective coping, and prevention of further transmission are important considerations for HIV management in these locations (Gardner, McLees, Steiner, del Rio, & Burman, 2011; Nokes & Nwakeze, 2005). More effective, targeted health education could help improve adherence, reduce spread of infection, and help those living with HIV to more effectively manage their condition. To understand what information HIV-positive patients need to manage their health, health-information-needs assessments may be conducted.

Health-information needs

An individual's "health-information need" is "the recognition that their knowledge is inadequate to satisfy a goal, within the context/situation that they find themselves at a specific point in time" (Ormandy, 2011). In the context of HIV, this is the patient recognition that he/she does not have enough information to appropriately manage his/her health. Information-needs assessments seek to elucidate these patient-identified needs so that clinicians may provide lacking information (Timmins, 2006). Needs assessments can also create a better understanding of the ways health information is communicated (Herrera, Campero, Caballero, & Kendall, 2008) and can therefore inform patient-centered, culturally appropriate interventions that can improve health outcomes, promote treatment adherence, and minimize risk behaviors (Kennedy, Medley, Sweat, & O'Reilly, 2010; Munoz et al., 2011). Limited research has been conducted in the LAC regarding specific health-information needs of HIV-positive patients (Barreto et al., 2012; García et al., 2014). The purpose of this study is, therefore, to identify, evaluate, and summarize what research has been conducted to examine patient perceptions of their health-information needs among adults living with HIV in LAC.

Methods

This review was conducted using Whittemore and Knafl's integrative review methodology (Whittemore & Knafl, 2005) in April and May 2015. An English and Spanish search was conducted in, PubMed, Embase, Ovid Medline, the Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Latin American and Caribbean Health Sciences Literature database (LILACS). The 33 independent nations in LAC searched were: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, and Venezuela (De Boni et al., 2014; UNAIDS, 2013). Each country was entered with "Latin America" or "Caribbean" so studies conducted in individual countries or across regions would be identified. Additionally, "HIV", "health information", "information need", "health-information needs", and "information seeking" were combined with the MeSH terms, "needs assessment", "questionnaire", "health service needs and demands", and "health services research" where applicable. For the Spanish search, Spanish language filters were applied to each search and to ensure a comprehensive search accounting for the different ways that Spanish speakers might define the concept of health-information needs, the search was run more generally with translations of the terms, "information", "knowledge", and "needs" in combination with "HIV". Those translations were, "información", "conocimiento", "necesidades", and "VIH".

Inclusion criteria were peer-reviewed articles published in English or Spanish that explored the health-information needs of HIV-positive adults (greater than 18 years of age) living in LAC. No time frame, study type, or study design was specified. Articles that measured or explored high-risk behaviors, stigma, adherence, or knowledge related to HIV and then inferred healthcare needs from those results were excluded as they may not reliably reflect patient-identified needs (Diaz, 2013; Scott & Thompson, 2003).

Data extraction, comparisons, and display

The objective, methods, sample and setting, subgroups included in analyses, principal findings, and quality assessment tier of included articles were summarized in a table to facilitate comparisons and display findings (Whittemore & Knafl, 2005). Data extracted from articles were used to identify methods to conduct information needs assessments, to compare similarities and differences between studies and to communicate patient-identified health-information needs.

Quality assessment

Quality of included articles was appraised using the Quality Assessment Tool of Studies with Diverse Designs (Sirriyeh, Lawton, Gardner, & Armitage, 2012). This 16-item tool rates methodological criteria of qualitative, quantitative, and mixed methods studies on a scale between 0 and 3 for each criteria included in the assessment (Sirriyeh et al., 2012). One author (SS) scored each of the articles and the second author (EL) independently scored two articles to verify scoring method. Final scores were calculated as percentages of points

possible depending on study type. Scores from included studies were divided into the highest, middle, and lowest third to facilitate a quality comparison.

Results

Searches from the six databases yielded 1885 citations. Of those, 434 were duplicates. The titles and abstracts of the remaining 1451 were screened according to inclusion and exclusion criteria and 1377 were excluded (Figure 1). One study's participants were adults over the age of 15, rather than 18, but the article was included because the focus was on adult health-information needs and included a large ($n = 841$) adult sample (Gogna, Pecheny, Ibarlucía, Manzelli, & López, 2009). The final sample thus consisted of 11 articles (Almeida & Vieira, 2009; Alva et al., 2007; Araya et al., 2013; Boryc et al., 2010; Cardona-Arias, 2010; Curioso & Kurth, 2007; Gogna et al., 2009; Jacobson et al., 2012; Llanos Zavalaga et al., 2006; Reid, Nielsen, & Reddock, 2010; Sanchez et al., 2009).

Characteristics of included studies

Included articles were published between 2006 and 2013, and were from 8 different countries: Argentina, Brazil, Chile, Colombia, El Salvador, Guyana, Peru, and Trinidad and Tobago (Table 1). Some focused on specific concerns, such as oral or reproductive health (Gogna et al., 2009; Sanchez et al., 2009), or on treatment information (Almeida & Vieira, 2009), while others focused on general health-information needs (Araya et al., 2013; Jacobson et al., 2012). Other studies considered information needs from a health services improvement perspective (Boryc et al., 2010; Cardona-Arias, 2010; Llanos Zavalaga et al., 2006; Reid et al., 2010). The remaining studies explored whether technology could assist in health-information exchange between providers and patients (Alva et al., 2007; Curioso & Kurth, 2007).

Quality of included studies

Quality assessment scores ranged from 36% to 83%, with a mean of 63%. The mixed methods studies were on average, of higher quality (Mean = 76.5%) than the studies that used only qualitative (Mean = 60.3%) or quantitative (Mean = 53%) methods. All articles, with the exception of one (Jacobson et al., 2012), clearly stated the study purpose or objective. Only one article reported a theoretical framework and included evidence of having participant involvement in study design (Gogna et al., 2009). The addition or omission of these characteristics led to overall higher or lower scores.

Study methodologies

Four of the articles used a quantitative approach employing surveys or previously validated questionnaires (Almeida & Vieira, 2009; Alva et al., 2007; Jacobson et al., 2012; Sanchez et al., 2009). Three used a qualitative approach with guided in-depth interviews (Araya et al., 2013; Curioso & Kurth, 2007) or with a series of interviews with participant and non-participant observation (Cardona-Arias, 2010). The remaining studies used a mixed methods approach. One included both qualitative and quantitative components in a survey (Boryc et al., 2010), another combined a national survey with the results of a series of in-depth interviews (Gogna et al., 2009), a third combined the results of focus groups with a

previously validated questionnaire (Llanos Zavalaga et al., 2006). The last analyzed phone call records from a national hotline (Reid et al., 2010) using qualitative and quantitative methods. A brief description of the methods used in each study can be found in Table 1.

Patient-perceived health-information needs

Information needs did not differ greatly by country or language but did differ across subgroups studied (Table 1). For example, men who have sex with men (MSM), who have been identified as those with the highest risk of contracting HIV in LAC (Barreto et al., 2012; De Boni et al., 2014), were noted as having different behaviors and information needs than heterosexual men or women (Alva et al., 2007; Gogna et al., 2009; Jacobson et al., 2012). Women were also identified as having different needs than their heterosexual male counterparts (Gogna et al., 2009; Jacobson et al., 2012; Reid et al., 2010). General information about HIV, its symptoms, illness trajectory, and lab results were commonly expressed information needs (Alva et al., 2007; Araya et al., 2013; Curioso & Kurth, 2007; Jacobson et al., 2012). More knowledge regarding antiretroviral medications was also desirable (Almeida & Vieira, 2009; Alva et al., 2007; Araya et al., 2013; Gogna et al., 2009; Llanos Zavalaga et al., 2006; Reid et al., 2010). Additionally, many participants identified a need for information about other sexually transmitted infections (Alva et al., 2007; Reid et al., 2010) or about secondary infections (Sanchez et al., 2009). Some participants were concerned about how to modify their lives following a positive diagnosis (Cardona-Arias, 2010) while others identified the need for help with employment, finances, and childcare as pertinent concerns (Boryc et al., 2010; Llanos Zavalaga et al., 2006). Methods of effective communication related to HIV and stress or mental health management and coping mechanisms (Araya et al., 2013; Boryc et al., 2010; Cardona-Arias, 2010; Gogna et al., 2009; Jacobson et al., 2012) were further identified needs. Although all of the studies found unmet information need, many participants did not seem to use the information that they did receive (Almeida & Vieira, 2009; Cardona-Arias, 2010; Gogna et al., 2009; Jacobson et al., 2012; Llanos Zavalaga et al., 2006; Reid et al., 2010). This was apparent when patients indicated that information was difficult to use, had incorrect understanding of medications, and did not change risk behavior following health education. Lastly, some patients noted that too much information could be overwhelming and adamantly reported not wanting any more information regarding HIV (Almeida & Vieira, 2009; Curioso & Kurth, 2007).

Important components of information exchange

Stigma and discrimination were noted as inhibitors of information exchange and were experienced in varying levels by participants (Alva et al., 2007; Curioso & Kurth, 2007; Gogna et al., 2009; Jacobson et al., 2012; Reid et al., 2010). Privacy and confidentiality were highlighted as the most important factors for patients in information exchange (Boryc et al., 2010; Curioso & Kurth, 2007; Gogna et al., 2009; Reid et al., 2010). Participants across studies noted that the best and most reliable sources of information were trustworthy healthcare providers (Almeida & Vieira, 2009; Alva et al., 2007; Araya et al., 2013; Boryc et al., 2010; Cardona-Arias, 2010; Gogna et al., 2009; Jacobson et al., 2012; Llanos Zavalaga et al., 2006) and indicated that information must be individually tailored by those providers as people have varying ability to process information (Almeida & Vieira, 2009; Araya et al., 2013). Correspondingly, barriers to seeking information were those that might compromise

confidentiality (Almeida & Vieira, 2009; Alva et al., 2007; Curioso, Kurth, Cabello, Segura, & Berry, 2008) or inability to meet with appropriate healthcare providers (Araya et al., 2013; Gogna et al., 2009; Llanos Zavalaga et al., 2006; Reid et al., 2010). Mistrust or mistreatment when interacting with healthcare providers was also highlighted as a major barrier to effective information exchange (Araya et al., 2013; Gogna et al., 2009).

Discussion

The purpose of this integrative review was to identify what research has been done to examine HIV-positive patients' perceptions of their health-information needs in LAC. Eleven articles from eight countries published in two languages were identified through a comprehensive literature search. Trinidad and Tobago was the only country in the Caribbean where research pertaining to health-information needs had been conducted and El Salvador was the only country from Central America. Remaining studies were conducted across South America. Hence, there are large geographical areas where information on health-information needs of HIV-positive adults is lacking. The quality of included studies varied widely and should be considered when interpreting study findings.

Although much research has focused on the information needs of healthcare providers (Pakenham-Walsh & Bukachi, 2009), this study is the first to synthesize research focusing on the health-information needs identified by HIV-positive patients living in LAC. Other reviews of patient-identified needs have focused on Africa or on developing regions as a whole and may not pertain to HIV specifically (Dutta, 2009; Patel & Dowse, 2013; Shariful Islam & Zabed Ahmed, 2012). Similar to other reviews, this literature review identified unmet information needs among all populations studied and indicated that patients may not use the information they do receive. Similar to this study, a review conducted in Africa found that patients want a better understanding of their medications and that stigma may prevent access to information (Patel & Dowse, 2013). Other studies pertaining to HIV also found that information regarding healthy lifestyles, emotional health, or general wellness issues would be useful to patients (Anderson et al., 2012; Huber & Cruz, 2000; Julien & Fourie, 2015). Across the international literature, patients identified different sources of information but generally indicated that providers are either the best sources or one of the biggest barriers to effective information exchange. For instance, when discrimination is present between providers and patients, individuals may avoid seeking healthcare altogether. This finding indicates that the quality of patient-provider interactions is of primary importance for providing effective health information to patients.

Limitations of this body of literature were that most included small samples from a specific urban area or subgroup and only represented 8 of 33 countries in LAC; therefore, generalizability is hindered. Social desirability bias was a potential confounder in several of the included studies. Many studies targeted a specific aspect of information need so a complete picture of a patient's information needs was not captured within study results. Additionally, different information needs of high-risk subgroups were only assessed in a minimal number of studies. There were several limitations to this integrative review. First, only literature published in peer-reviewed journals indexed in international databases was accessed. Further research of the "gray literature" might yield additional data. Second, only

studies published in English and Spanish were included. Studies published in the native languages of either Haiti or Brazil would not have been identified in this review. Third, although some participants indicated they may have difficulty processing and using the health information they do receive, the reasons why this is the case was not assessed. Lastly, because many of the articles were found in both the English and Spanish searches in multiple databases and because of software limitations downloading references from the LILACS database, we were unable to determine which articles were identified in the English versus Spanish searches.

Despite limitations, findings indicate there are unmet information needs among HIV-positive adults across the LAC regions and that those information needs are different across populations studied. Women and MSM were both noted to have distinct information needs from heterosexual men, a finding that may be related to gender roles and stigma in particular cultural settings (Zunzunegui, Alvarado, Béland, & Vissandjee, 2009). Information needs of other groups that have been identified as high risk in LAC, such as transgender women, intravenous drug users, male and female sex workers, and married women (Bayer et al., 2014; De Boni et al., 2014; García et al., 2014), were not specifically addressed in the included studies. Because differences in health-information needs were evident across subgroups, additional research focusing on these specific high-risk individuals is warranted. Additionally, this review indicated that for health education to be effective, information must be tailored to individual patient's needs and showed that some patients may not use information they do receive. Finally, information needs assessments are only relevant if healthcare providers and organizations use the data obtained to improve patient care. But when these changes are made, studies have shown that meeting patient health-information needs can lead to better outcomes (Flickinger, Saha, Moore, & Beach, 2013; Tomori et al., 2014).

Conclusion

Findings from this review demonstrate that many methods can be used to elucidate patient perceptions of their health-information needs. All of the included studies found unmet information needs among HIV-positive adults. Although similarities in information needs were identified among patients across studies, differences in information needs were identified for subgroups and were found to differ based on individual characteristics of participants. Information needs assessments were not found for 25 of 33 countries, nor were the information needs of many high-risk groups assessed. Healthcare organizations and researchers can use the results from this review to design health-information needs assessments, compare the results that they obtain with those previously disseminated, and to inform higher quality service provision.

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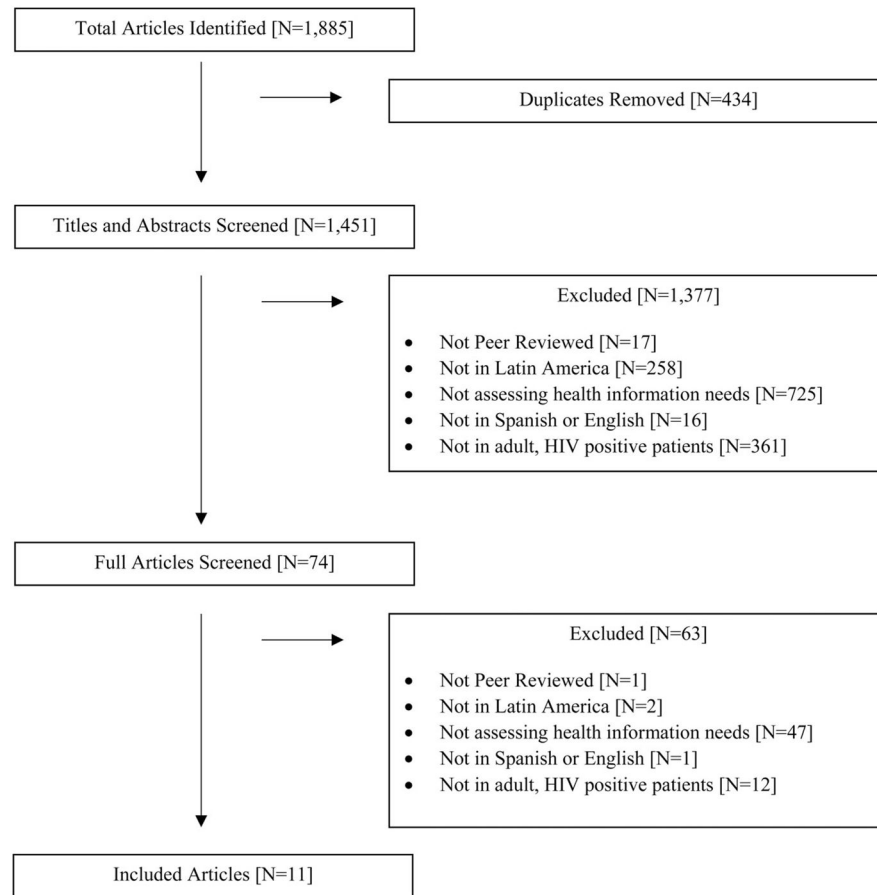


Figure 1.
Flow diagram of articles included and excluded in search.

Table 1 Characteristics and findings of studies that explore or quantify HIV positive patient's health information needs

Author (Year)	Objective	Methods	Sample and Setting	Risk Groups Included	Principal Findings and Quality Score Tier
de Castro Almeida and Fernandes Viera (2009)	To describe what information patients have regarding their medications, where the information comes from, and if there is need for additional or different information	<ul style="list-style-type: none"> Structured questionnaire administered through interviews Questions included demographics, knowledge of information related to the drug itself, sources of information, and the importance of not receiving information about medications 	<ul style="list-style-type: none"> 195 participants (70.8% male and 29.2% female) receiving anti-retroviral therapy as an outpatient Hospital Fortaleza, Brazil 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Lack of information among patients regarding their medications Amount of interest for more information regarding medications varies between patients Healthcare providers were the patient-identified, largest and most reliable sources of information Quantity and complexity of health information must be tailored to the needs and capacity of each patient Quality score: lower third
Alva et al. (2007)	To evaluate the use of internet for seeking sex partners and information on HIV and/or sexually transmitted infections (STIs)	<ul style="list-style-type: none"> Structured questionnaire administered through interviews Questions included demographics, clinical and sexual conduct items, and questions about how participants use 	<ul style="list-style-type: none"> 100 participants (64% male and 36% female) who arrived consecutively to a non-governmental organization dedicated to HIV/AIDS prevention 	<ul style="list-style-type: none"> Men who have sex with men Women 	<ul style="list-style-type: none"> More than half of participants reported having access to the internet, most of whom used it to access information about HIV Most commonly searched topics: antiretroviral therapy, symptoms of

Author (Year)	Objective	Methods	Sample and Setting	Risk Groups Included	Principal Findings and Quality Score Tier
		the internet to look for information about HIV and other STIs	<ul style="list-style-type: none"> Lima, Peru 		<ul style="list-style-type: none"> HIV/AIDS, and information regarding other STIs Of those who had searched for information on the internet, 55.6% had asked their doctors about the same themes from online searches Quality score: middle third
Araya et al. (2013)	To determine educational needs and perceived barriers of HIV positive patients and their healthcare providers	<ul style="list-style-type: none"> Semi-structured, in-depth interviews Questions pertained to educational needs and identified barriers to health education program implementation 	<ul style="list-style-type: none"> 65 participants (86.2% male and 13.8% female) and 10 healthcare providers (40% male and 60% female) who have direct contact with HIV patients in a large hospital Santiago, Chile 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Patients and health professionals identified the same educational needs Main information needs were general aspects of the illness, laboratory tests, long term complications, actions of medication, and methods of transmission Educational programs need to have both individual and group components to be most effective Time is the largest barrier to health education Quality score: middle third

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Boryc et al. (2010)	To assess the needs of clients living in a home based care program for HIV positive adults	<ul style="list-style-type: none"> Mixed methods, needs assessment conducted by verbally administering a questionnaire Questions gathered data on demographics, basic needs, services received, quality of services, mental health, and substance abuse characteristics 	<ul style="list-style-type: none"> 84 clients (20% male and 80% female) of the home based care program Region 4, Guyana 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Participants highlighted need for referrals to income-generating prospects, food and nutritional supplement support, and help with children Trust that confidentiality regarding HIV status will be maintained and empathy on the part of healthcare provider were highlighted as crucial components of effective communication Quality score: higher third
Cardona-Arias (2010)	To understand the social representations of health related quality of life for HIV positive patients and to contribute useful knowledge to guide public health measures, health programs, and health education	<ul style="list-style-type: none"> Participants completed a series of qualitative interviews, a semi-structured interview with participant observation, and non-participant observation through healthcare services and during support groups 	<ul style="list-style-type: none"> 19 participants (52.6% male and 47.4% female) Specific recruiting setting not specified Medellín, Colombia 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> There was need for better understanding of how to re-define life priorities and how to live life once one receives this diagnosis Information needs can change over the course of the diagnosis When presenting the diagnosis, it is important for providers to dispel the myth that AIDS is synonymous with death in order to help

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					<p>patients accept their new reality</p> <ul style="list-style-type: none"> Methods of transmission as well as who can become infected are necessary to know Quality score: lower third
Curioso and Kurth (2007)	To understand information needs, motivations, and behaviors of HIV positive patients and report on the use of technologies as tools for health management	<ul style="list-style-type: none"> In-depth interviews were conducted using a topic guide to determine how computers, internet, cell phones, and PDAs are used to access health information 	<ul style="list-style-type: none"> 31 participants (9.7% male and 90.3% female) receiving ART and clinical services at two community based clinics Lima, Peru 	<ul style="list-style-type: none"> Men who have sex with men 	<ul style="list-style-type: none"> Participants perceived that HIV information was important to their health but find that information was not always available Internet was widely accessible and participants perceived internet as a useful source of HIV information or location for intervention Privacy and confidentiality were primary concerns related to information exchange with mobile devices Quality score: higher third
Gogna et al. (2009)	To analyze the contraceptive and reproductive needs and rights of people living with HIV and to determine if	<ul style="list-style-type: none"> Two separate sets of in-depth interviews with patients and providers National survey with an interview- 	<ul style="list-style-type: none"> 25 health professionals and 15 participants who were public health service users 	<ul style="list-style-type: none"> Women Men who have sex with men Bisexual men 	<ul style="list-style-type: none"> Access to appropriate treatment can be hindered by "entrenched moral and sexist beliefs," discriminatory practices,

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	they are fulfilled	administered questionnaire	<ul style="list-style-type: none"> 841 participants (both male and female) in national sample 25 men and 24 women and 24 healthcare representatives Buenos Aires, and a national sample from Argentina 	<ul style="list-style-type: none"> Transgender 	<ul style="list-style-type: none"> stigma, and lack of social support Women living with HIV received little information regarding contraceptive methods other than condoms Lack of information or mistrust of medical services caused people living with HIV to deny themselves the possibility of having a child Fragmented services, lack of care coordination and components of health care provider interactions were cited as barriers to effective information exchange Quality score: middle third
Jacobson et al. (2012)	To provide information on exposure to prevention coverage and management of sexually transmitted infections in people living with HIV in limited resource settings	<ul style="list-style-type: none"> Self-administered, computer-assisted questionnaires based on standardized survey instruments STI testing performed 	<ul style="list-style-type: none"> 689 participants (50.5% male, 49.5% female) recruited from HIV service areas at several public hospitals San Salvador, Santa Ana, and San Miguel, El Salvador 	<ul style="list-style-type: none"> Men who have sex with men Women 	<ul style="list-style-type: none"> Patients were more likely to report mistreatment, abuse, denial of services or social activities outside of the healthcare settings 22.8% of participants received post-test counseling after diagnosis and about one

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Llanos Zavalaga (2006)	To describe the perceptions of patients living with HIV/AIDS about healthcare and quality of care regarding highly active anti-retroviral therapy (HAART) in a hospital in Lima	<ul style="list-style-type: none"> Quantitative questionnaire based on previously validated questions regarding service dimensions 2 focus groups collecting information on norms of service implementation, healthcare and laboratory supply and demand 	<ul style="list-style-type: none"> 85 participants (76.6% male and 28.4% female) receiving ART at the national hospital completed questionnaires during interviews No less than 6 participants in focus groups Lima, Peru 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> third reported additional prevention, HIV education, HIV information, or counseling after their diagnosis 15 to 30% perceived that they have limited access to information, education, and advice about HIV Quality score: lower third 67.1% of respondents indicated interest in information about their clinical history and lab results Lack of information about the reasons for starting ART noted and patients would also like to know more about their sickness, treatments, and the care they need Multidisciplinary teams at the hospital were lacking in key areas such as in nutrition education or time with patients Information provided in

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Reid, Nielsen, and Reddock (2010)	To examine the utilization of the National AIDS Hotline, evaluate its validity for evaluating HIV related needs and identify changes in users between two time points	<ul style="list-style-type: none"> Quantitative and qualitative analysis of call records in 1998–2002 and in 2007 Collected demographic characteristics and open ended questions for descriptions of special needs, content of the call, and actions taken by the receiver 	<ul style="list-style-type: none"> 7,046 phone call records from time one and 2,338 from time two Few callers revealed HIV status however, over 5% in time one and around 3% of callers in time two were HIV positive Trinidad and Tobago 	<ul style="list-style-type: none"> Women Men who have sex with men 	<p>healthcare settings or by non-governmental organizations was considered optimal</p> <ul style="list-style-type: none"> More information was provided at time of diagnosis but less thereafter Quality score: higher third <ul style="list-style-type: none"> Most frequently cited reason for calling the hotline was “needs an HIV test” and not knowing how to locate test locations Information regarding symptoms related to HIV, treatments, routes of transmission, and prevention were other frequent information needs Women were more likely to call the hotline for information than men Barriers to accessing information included time, resource reliability and trustworthiness of sources

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Sanchez (2009)	To assess the score variation of scales 1 and 2 of the DCBS (Dental Coping Beliefs Scale) regarding oral health, oral health needs, clinical viral progression, and medical care needs pertaining to age and gender in HIV positive patients	<ul style="list-style-type: none"> DCBS questionnaire was administered to assess dental beliefs Data regarding medical conditions were also collected The previously validated CCTN (Community Caries Index of Treatment Need) and CPTN (Community Periodontal Index of Treatment need) were administered to assess dental and periodontal treatment needs 	<ul style="list-style-type: none"> 102 participants (65.7% male and 34.3% female) being seen in the infectious disease unit of one hospital Buenos Aires, Argentina 	<ul style="list-style-type: none"> Women 	<ul style="list-style-type: none"> Quality score: higher third There was a great need of oral healthcare treatment with 54% of sample needing dental prosthetic treatment and 45% needing tooth removal or endodontic treatment Wrong dental beliefs were associated with age, caries, and periodontal treatment need, more episodes of candidiasis, pneumonia, tuberculosis, and hospitalization from opportunistic infections More effective, collaborative oral healthcare and patient engagement in their oral health can improve patient's oral health and minimize concerns regarding secondary infection resulting from unmet oral healthcare needs Quality score: middle third