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Old Age Priorities and Needs Related to Men Living with HIV: A Qualitative Study Among Referred Patients to a Big Referral Hospital in Tehran

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Abstract

Background: People living with HIV often live for decades after the detection of the virus, leading to a rise in the number of middle-aged and elderly people living with HIV. In fact, as the lives of HIV positive patients return to normal if they fully adhere to HIV treatment, the issue of care and treatment of other diseases, especially non-communicable diseases, becomes more important. Therefore, a study was conducted with the aim of investigating the old age priorities and needs related to men living with HIV.

Methods: This study a qualitative content analysis. Seven male individuals older than 60 years old living with HIV were invited to a Focus Group Discussion session. Data were collected in this study by gathering the opinions of participants regarding questions aligned with the study's purpose, which the researchers posed. Dialogues were recorded and documented digitally. The data were transferred to the OPEN CODE software for classification and qualitative analysis.

Results: Analysis of data revealed health issues participants encountered related to cardiovascular, respiratory, gastrointestinal, musculoskeletal, dermatologic, and psychological health. Nevertheless, participants' assessments of the impact of HIV on various aspects of their health differed. The remainder of the analysis examined the challenges faced, while managing HIV and other aspects of health simultaneously; these included financial burden, fatigue due to chronic disease, managing medication side effects, time-consuming physician visits, and the frequency of such visits.

Conclusion: This study shows that older males living with HIV encounter various physical, mental, and social problems, whereas the quality of patient care delivered by medical staff was not desirable from their point of view.

Keywords: Acquired immunodeficiency syndrome (AIDS), Fatigue, Health needs, Human immunodeficiency virus (HIV), Immune system, Physicians, Viruses

Introduction

Human Immunodeficiency Virus (HIV) is a virus that affects the body's immune system, leading to an increased susceptibility to various viruses and malignancies. HIV is considered a major global health issue. It affects millions of people around the globe and has caused a remarkable amount of mortality. Acquired Immunodeficiency Syndrome (AIDS) is a pathologic condition caused by HIV. Life expectancy of People Living with HIV (PLWH) has increased significantly in recent years; this can be attributed to the progression of Antiretroviral Therapy (ART) and investment in patient care and follow-up. PLWH often live for decades after the detection of the virus, leading to a rise in the number of middle-aged and elderly PLWH. A remarkable number of PLWH expire from complications of another chronic illness rather than from AIDS itself (1). Multiple studies suggest that older adults living with HIV are more prone to cardiovascular disease. For example, a cohort study carried out by Freiberg MS *et al* in 2013 showed that HIV-positive people are 1.5 times more likely to have an acute myocardial infarction event (2). In a study conducted by Zhu *et al* in 2024, which reviewed 31 articles, it was shown that PLWH are at greater risk for dyslipidemia, Coronary Artery Disease (CAD), and Myocardial Infarction (MI) compared to individuals without HIV. However, there was no significant difference in the prevalence of hypertension between the groups (3).

Several known risk factors of cardiovascular disease, such as tobacco use, sedentary lifestyle, dyslipidemia, hypertension, diabetes, and chronic kidney disease, are more prevalent and appear earlier in HIV-positive people compared to their non-infected counterparts. Antiretroviral therapy does not lower this risk (4). Based on a study conducted by Brown *et al* examining the relationship between HIV status and respiratory symptoms, PLWH were more likely to experience cough and shortness of breath compared to HIV-negative individuals. While antiretroviral therapy reduced symptoms in PLWH, respiratory symptoms remained more prevalent in PLWH (5). A study conducted by Ghayomzadeh *et al* aimed at determining the effects of aerobic and resistance exercises on the physical condition and bone density of PLWH showed that a combination of resistance and aerobic exercises is an effective means to combat bone wasting and improve various inflammatory markers, physical performance, and growth hormones in PLWH (6). On the other hand, another study conducted by Ghayomzadeh *et al* demonstrated that increasing physical activity and promoting healthy behaviours could play a significant role in reducing the adverse effects of antiretroviral therapy and HIV (7). A study conducted by Walker-Bone *et al* in 2017 showed that PLWH commonly report musculoskeletal pain. With nearly normal immune function, PLWH can develop inflammatory rheumatic diseases that require assessment and management in rheumatology clinics. Additionally, avascular necrosis and osteoporosis are common complications among PLWH (8).

A study conducted by Walker *et al* showed that skin problems are widespread with HIV infection, affecting nearly 90% of PLWH. These conditions can be specific to HIV or common skin problems found in the general population. Skin manifestations increase with the progression of AIDS and decreased immune function. Early diagnosis and testing allow for the timely detection and treatment of HIV (9). A study conducted by Rezazadeh *et al* emphasized the importance of incorporating nutrition assessment, education, counselling, and dietary supplements, when necessary, as an integral part of HIV treatment programs (10). Another study by Tudunham *et al* showed that inflammation and activation of the immune system due to changes in intestinal epithelial cells and dysbiosis occur in individuals with HIV, which is associated with metabolic, cardiovascular, and neurological complications of HIV. However, further investigations, especially those directly assessing intestinal pathology, are needed to understand the direct impact of gastrointestinal dysfunction on comorbidities associated with HIV (11).

Living with HIV can lead to psychosocial issues like stigma, depression, anxiety, and social isolation in the long run. A study conducted by James *et al* indicated that HIV disrupts and limits sexual relationships and intimacy among older individuals living with HIV. Social stigma affects intimate relationships and sexual preferences in this population (12). In a qualitative study conducted by Dejman M *et al* in Iran to identify the psychosocial and familial problems faced by

PLWH, issues such as rejection, depression, anxiety, a desire for revenge, lack of fear about infecting others, frustration, social isolation, relationship problems, and fear due to social stigma were identified as social issues faced by these patients. Psychological problems included marital issues, family conflicts, lack of family support, economic barriers to marriage, and social rejection by the patient's family. Their family problems included unemployment, housing needs, basic needs, homelessness, and lack of social support associations (13). Middle-aged men might face presumptions regarding sexual orientation and identity as well. To achieve mental well-being, these concerns should be addressed (14). In 2014, Arseniou S *et al* stated that major depressive disorder among PLWH is highly prevalent, ranging between 18 and 81%, depending on the population and the method of study; psychosocial factors (stigma, inability to work, body image issues, isolation, disability) can affect this condition (15).

A study conducted by Rasoolinejad M *et al* demonstrated a high prevalence of comorbidities among older HIV-positive individuals in Iran. In this study, 100 patients with an average age of 62.5 years (ranging from 50 to 79 years) were reviewed and analyzed. Comorbidities were observed in 20% of patients, with concurrent Hepatitis C infection, diabetes mellitus, and neuropsychiatric disorders being the most common. Complete immunological and virological responses were observed in 88 and 97% of patients, respectively. Treatment regimens were adjusted for 66 patients due to side effects in 63 patients (95.4%). HIV resistance tests showed a low resistance rate (<10%) to all medications used in this population (16).

In a 2012 qualitative study conducted by Moradi G *et al* to investigate and identify the health and treatment needs of PLWH in Iran, the needs of these patients were categorized into three main groups. The first category included prevention and counselling services, with several subgroups such as accessible general education and counselling, condom distribution to vulnerable populations, increasing counselling centers in urban areas, providing appropriate psychological and supportive counselling, and family planning services. The second category encompassed diagnostic and treatment services, which included subgroups like comprehensive antiretroviral therapy, tuberculosis treatment and continuous care, providing care and treatment for hepatitis patients, and dental services. The third category involved rehabilitation services, including subcategories such as home care, social and psychological support, nutritional support, and gym services (17).

Access to health care remains a challenge for middle-aged males living with HIV, particularly those living in deprived areas. Cunningham W *et al* in 1999 and Sullivan PS *et al* in 2014 identified financial burden, stigma and health insurance unavailability as some of the elements preventing an HIV-positive patient from getting suitable treatment and supportive care on time. These two articles emphasized the need for political corrections that enable improved access to healthcare services (18,19). Overall, the increased number of PLWH and population aging will eventually result in more people requiring complex clinical care, including the management of chronic conditions alongside HIV treatment with intricate ART regimens. The changing demographic status of the population necessitates healthcare systems that can adapt to the growing number of individuals with these complex needs. Furthermore, the growing demand for specialized physicians and healthcare staff should also be met (20).

Materials and Methods

This study was a qualitative content analysis with the goal of prioritizing the health-related needs of senior male HIV-positive individuals. Sampling was conducted using a purposive sampling technique rather than a convenience sampling technique. Data from this study originates from the opinions of the participants, seven male individuals living with HIV who were over 60 years old. The participants' views were collected through a focus group discussion, which aimed to gather insights related to the overall goal and specific objectives of the study. In addition to the expressed opinions, the data included various forms of interactions, agreements, and disagreements among participants regarding the opinions shared by others. The researchers also recorded other methods of expressing participants' opinions during the session.

At the beginning of the session, the researchers introduced themselves and explained the importance

of conducting the study for the participants. The overall objective of the study (determining priorities and needs related to aged males living with HIV) and specific objectives (which categorize elderly needs into those related to cardiovascular health, respiratory health, gastrointestinal health, musculoskeletal health, sexual health, neurological health, *etc*.) were outlined. An open discussion was initiated with questions such as: "Can you describe any cardiovascular health issues you have experienced since being diagnosed with HIV, and how have they affected your daily life?"

Subsequently, questions were posed regarding patients' assessments of their risk for cardiovascular diseases in light of their HIV status, the challenges they faced in managing their cardiovascular health alongside HIV, their feelings about healthcare providers' attention to their cardiovascular health, suggestions for improvements, and any lifestyle changes or self-care practices they had adopted to enhance their cardiovascular health, along with any difficulties encountered in this regard. Similar questions were then asked about other aspects of health, such as respiratory, gastrointestinal, musculoskeletal, skin and hair, urinary and reproductive, sexual, and psychosocial health. Questions asked during each part of the interview are mentioned in table 1.

The data, which consisted of participants' responses, were collected through the focus group discussion. The primary formats of data included audio recordings, transcribed texts of conversations, summary forms of findings, and original data formats. During the group interview, the researcher verified their understanding of participants' statements through guiding questions. After the focus group session concluded, and with participants' consent, their voices were recorded using electronic recording devices. All recorded discussions were subsequently transcribed and typed. A question guide based on the study's goal was designed as a questionnaire containing questions that the researchers wished to ask participants in relation to these objectives. Whenever necessary, probing questions were also used to deepen responses. To formulate probing questions, previous studies and input from individuals active in the field of HIV were utilized. Once discussions concluded and recorded materials were transcribed, the obtained content was coded and categorized to facilitate qualitative analysis. Open Code software was employed for coding and categorization.

Results

Cardiovascular health

To determine the priorities and needs of older males living with HIV, the meaning of cardiovascular health and some common cardiovascular disease examples were explained to participants in plain language. Thereafter, open-ended questions were asked to explore further the cardiovascular disorders participants encountered and how they have impacted their lives since their HIV diagnosis. Investigating participants' views revealed some fundamental matters.

Hypertension: Two out of seven participants (28.5%) reported suffering from hypertension after being diagnosed with HIV and are currently under treatment ("a few years after my HIV diagnosis, I realized I have high blood pressure and I take

Table 1. Questions asked during the interview with participants. [X] is replaced with cardiovascular, respiratory, gastrointestinal, musculoskeletal, skin and hair, and psychosocial in each set of questions

Questionnaire
What health problems related to [X] system have you encountered since being diagnosed with HIV? How did it affect your daily life?
Do you think HIV increases the chance of [X] health problems?
What are some of the challenges you faced while managing HIV and [X] health problems at the same time?
How do you feel about the care given by healthcare providers regarding your [X] health? Do you have any recommendations for improvement?
Did you change any aspect of your lifestyle to improve your [X] health? If yes, what challenges did you face while doing so?

losartan tablet from time to time, I lowered my salt consumption too").

Dyslipidemia: Two out of seven participants in this study (28.5%) mentioned hyperlipidemia. ("In one of my blood tests, it appeared that I have increased blood fat. According to my physician's orders, I try to maintain a healthy diet and take my medication").

Lack of diagnosed cardiovascular disorder: Five out of seven (71.4%) participants did not have a diagnosed cardiovascular disorder.

Awareness and lack of awareness of the increased risk of cardiovascular disorders related to HIV status: Later on, participants were asked if they were aware of the increased risk of cardiovascular disease in PLWH. The results consist of two main categories:

One out of seven participants in the study (14.2%) mentioned the potential increased risk of cardiovascular disorders due to their HIV status ("I know that both HIV and aging can play a role in the risk of cardiovascular diseases. I follow my doctor's recommendations and focus on consistently taking my medications. I hope that my adherence to treatment and continuous communication with my doctor will reduce the risks of various diseases, including cardiovascular diseases").

Five out of seven participants in the study (71.4%) stated that they were unaware of this risk ("I have worries about my health considering aging, but I don't think it has anything to do with HIV. Anyone can get sick").

The study then aimed to explore the significant challenges that patients face in managing their cardiovascular health alongside HIV. The coding of the results included several essential categories:

Drug side effects: One in seven participants (14.2%) expressed concern about potential drug side effects.

"I have been living with HIV for some years now, and it has been a complicated road. My biggest worry is the side effects. I don't know what effects the medications I take have on my cardiovascular health, or even what effects not taking them have on my cardiovascular health".

Increasing treatment costs: Five participants (71.4%) complained about high treatment costs, considering rising expenses a significant challenge in managing their cardiovascular health.

No challenges or concerns: One out of seven participants (14.2%) mentioned having no challenges regarding maintaining their cardiovascular health in light of their HIV status.

Patients' feelings about provider care, respecting cardiovascular health: Subsequently, questions were asked to assess patients' feelings regarding the healthcare providers' attention to their cardiovascular health and suggestions for improvement. The coding of the results included the following categories:

Trust in the treatment team: One out of seven participants (14.2%) reported complete satisfaction with their medical team's performance.

"*My treatment team pays attention and has the necessary knowledge. They monitor my health regularly, evaluate the risk factors and set my treatment plan accordingly. They sometimes even scold me for not following up. Nonetheless, I appreciate hearing more personalized experiences regarding healthy lifestyles for heart health*".

Acceptable but needs improvement: Another participant (14.2%) felt the medical care team's performance needed improvement.

"Although my medical team has good intentions, there is room for improvement. Sometimes, a good bond is not formed. I want to receive preventive services, too, and not just treatment services. Regular training sessions could be helpful".

Dissatisfaction: Five out of seven participants (71.4%) expressed dissatisfaction with the treatment team's performance concerning their cardiovascular health.

"Maybe 50% of care is provided; no specific check-ups have been done, or if they have been done, I am unaware." "To be honest, sometimes I feel like I'm being ignored. Care related to HIV is a top priority, and heart health is only briefly discussed or not discussed at all. I want my health to be taken care of in a more comprehensive manner".

Lifestyle changes and self-care: Further inquiries were made regarding any lifestyle changes or self-care practices patients had implemented to improve their cardiovascular health, as well as any issues they encountered in this regard. The coding and analysis of the data included several key codes:

Adherence to a healthy diet and exercise: Two out of seven participants (28.5%) mentioned their efforts to maintain a healthy diet and exercise.

"I don't know exactly what I should do to improve my cardiovascular health, but generally, I have a balanced diet, sometimes exercise, and take my medications regularly. Maintaining a good lifestyle is definitely challenging; sometimes I feel I lack motivation".

"There are days when fatigue or emotional challenges make it difficult to practice a healthy lifestyle. It is essential to have support, such as a supportive companion or doctor".

No change: Five out of seven participants (71.4%) stated that they had not made any significant changes in their lifestyle. Key reasons included lack of motivation and emotional support, aging, and fatigue from overwork.

"I haven't made any significant changes in my lifestyle; sometimes, due to my busy schedule, I forget to take my medications".

Respiratory health

In determining the priorities and need for respiratory health among elderly males living with HIV, the concept of respiratory health was explained in simple terms for study participants, along with typical examples. Open questions were designed to explore their priorities further and needs across five categories: respiratory problems experienced by patients after being diagnosed with HIV, patients' assessment of the risk of developing respiratory diseases considering their HIV status, challenges faced by patients in managing their respiratory health alongside HIV, patients' feelings regarding healthcare providers' attention to their respiratory health, and suggestions for improvements and any lifestyle changes or self-care practices implemented to enhance respiratory health. Interviews and data analysis were conducted. The results indicate that a history of respiratory infections and chronic cough were among the most common conditions experienced by participants in the study regarding their respiratory health (14.2%). However, the majority reported no respiratory disorders (71.5%).

Respiratory infections: One in seven study participants (14.2%) reported having had a history of severe respiratory infections after being diagnosed with HIV.

"I had a history of severe respiratory infections. My doctor said that HIV had made my body more susceptible to infection, and if I had started HIV treatment later, such an infection could have led to death. I am always worried about getting it again."

Chronic cough: Another participant (14.2%) reported chronic cough and breathing problems due to long-term smoking.

"Chronic cough, difficulty breathing, and chest problems affect my daily life. Sometimes, I feel short of breath, which also affects my mental health. I know that smoking makes my condition worse, but I have no interest in quitting."

No known respiratory symptoms: Five of the participants (71.5%) reported no experience of respiratory distress.

"I had no particular problems, just an episode of low platelets and minor shortness of breath early in my diagnosis, which resolved after changing my medications."

More than half of the participants in the study were unaware of the connection between HIV and respiratory disease (57.1%). In contrast, some participants noted that HIV could increase the risk of respiratory disorders (28.5%), while one participant believed there was no connection (14.2%). One of the biggest challenges patients faced in maintaining their respiratory health was concern about reinfection with respiratory infections, difficulty quitting smoking, and lack of awareness regarding the side effects of antiretroviral therapy. Additionally, the majority (85.7%) believed that the healthcare team did not adequately address their respiratory health, and the essential suggestions made included focusing on preventive measures alongside treatment actions and educating on respiratory health. Among the most significant lifestyle changes participants made to maintain their respiratory health were adhering to precautions against respiratory infections (100%) and avoiding going outside on days with pollution (28.5%).

Musculoskeletal health

To determine the priorities and needs for musculoskeletal health among elderly males living with HIV, the concept of musculoskeletal health was

explained in layperson's terms for participants, along with typical examples. Questions were designed to explore their priorities and needs further. Questions were categorized into five groups regarding the musculoskeletal health problems that patients experienced after being diagnosed with HIV: patients' assessment of the risk of developing musculoskeletal diseases in relation to their HIV status, the challenges faced by patients in managing their musculoskeletal health and HIV simultaneously, patients' feelings about the attention given by healthcare providers to their musculoskeletal health, and suggestions they made for improvement, as well as any changes they had made in their lifestyle or self-care practices to enhance their musculoskeletal health and the difficulties they encountered in this regard.

Joint pain and stiffness: Four out of seven participants (57.1%) reported experiencing pain in various joints, including the back, knee, and hip. Another participant also mentioned feeling intermittent pain throughout the body.

"Since my HIV diagnosis, I have experienced joint pain and stiffness, especially in my knees and hips. This has reduced my physical activity and, at times, even affected my ability to walk. I have had to reduce the physical activities I like, such as walking, which has been very uncomfortable".

Osteoporosis: Two out of seven participants (28.5%) mentioned suffering from osteoporosis.

Severe muscle wasting and weight loss: Two out of seven participants (28.5%) complained of severe muscle wasting, with the other participants reporting similar experiences.

"It had a completely adverse effect. I experienced severe weight loss and muscle wasting. Despite taking various supplements, eating a healthy diet, and regularly going to the gym, my muscles never regained their previous strength. I used to climb mountains and enjoy sports, but my muscle wasting completely took away my ability to exercise".

Muscle weakness: Another participant (14.2%) complained of significant muscle weakness, stating that this condition had a profound impact on their quality of life.

"Since my HIV diagnosis, I have had significant muscle weakness and sometimes experience muscle cramps and tingling. This has made everyday tasks, such as carrying groceries or climbing stairs, challenging. Adaptation has been tough at times, but I try to adjust myself and rest when I need to".

Skin and hair health

To determine the priorities and health needs of older males living with HIV, questions were designed to explore their priorities and needs while explaining the concept of skin and hair health in simple terms for the study participants and providing common examples. The questions were categorized into five groups regarding the skin and hair health problems that patients experienced after being diagnosed with HIV: patients' assessment of the risk of developing skin and hair diseases concerning their HIV status, challenges faced by patients in managing their skin and hair health alongside HIV, patients' feelings about the attention given by healthcare providers to their skin and hair health, and suggestions they made for improvement, as well as any changes they had made in their lifestyle or self-care practices to improve their skin and hair health and the problems they faced in this area.

Severe hair thinning and hair loss: Three out of seven participants (42.8%) reported experiencing hair loss, mentioning that this condition has significantly reduced their self-confidence in social situations.

"Since my HIV diagnosis, I have noticed severe hair thinning and sometimes hair loss. This has damaged my self-esteem, made me feel uncomfortable in social situations, and caused me to have less self-confidence. I have tried various treatments without any noticeable result".

Skin lesions: Two out of seven participants (28.5%) reported experiencing skin lesions and the associated symptoms, such as itching.

"Since my HIV diagnosis, I have had frequent skin lesions and dry skin. These problems have made me feel insecure, especially in the summer when I wear short-sleeved clothes. The discomfort and itching also interfere with my daily activities and sleep, which is very annoying".

"I have had red pimples for several years. I have multiple spots on my body, and I don't know why. I didn't seek medical attention".

Increased susceptibility to skin infections: One participant (14.2%) reported that their skin was

more prone to infections, such as fungal infections, and mentioned that they frequently spent a significant amount of money and energy addressing these issues. "Since my HIV diagnosis, my skin has become more prone to infections and blemishes. This has not been easy because it affects my social interactions in the community. I have had to spend more time and money on treatments and skin care, which can be both time-consuming and expensive".

Loss of skin youthfulness and vitality: Four of the participants (57.1%) believed that HIV had a negative impact on maintaining the youthfulness and vitality of their skin.

Gastrointestinal health

To determine the priorities and health needs of older males living with HIV, questions were designed to explore their priorities and needs while explaining the concept of gastrointestinal health in layperson's terms to the participants and mentioning some common examples. The questions were categorized into five groups: gastrointestinal health problems that patients experienced after being diagnosed with HIV, patients' assessment of the risk of developing gastrointestinal diseases concerning their HIV status, challenges faced by patients in managing their gastrointestinal health alongside HIV, patients' feelings about the attention given by healthcare providers to their gastrointestinal health, and suggestions they made for improvement, as well as any changes they had made in their lifestyle or self-care practices to improve their gastrointestinal health and the problems they faced in this area. One of the participants (14.2%) mentioned that due to being diagnosed with HIV and depression resulting from this illness, as well as gastrointestinal side effects from medications, had largely lost his appetite.

Assessment of the risk of developing gastrointestinal diseases concerning their HIV status: Further questions were asked about patients' assessment of the risk of developing gastrointestinal diseases concerning their HIV status; the results from interviews included several key categories: High Risk of Developing Gastrointestinal Diseases: Three out of seven participants (42.8%) were of the opinion that HIV could increase the likelihood of developing gastrointestinal diseases:

"After taking some Iranian medications, I experienced stomach pain. Changing medications improved my symptoms significantly".

The reasons given by this group of participants fell into two main categories: the nature of HIV infection itself and the side effects of treatment medications.

No Connection Between Gastrointestinal Diseases and HIV: Four out of seven participants (57.1%) stated that they believed there was no connection between HIV and gastrointestinal diseases and expressed no concern.

Challenges managing gastrointestinal health since being diagnosed with HIV: Participants were then asked about the most significant challenges they faced in managing their gastrointestinal health since being diagnosed with HIV; the analysis of the results included: Managing medication side effects: Two out of seven participants (28.5%) mentioned that managing the side effects of antiviral medications was the biggest challenge they faced in maintaining their gastrointestinal health.

Fatigue and weakness due to illness: One out of seven participants (14.1%) reported experiencing fatigue from a chronic illness and the challenges it created in managing other issues.

"Another major challenge is the fatigue and weakness caused by HIV and digestive problems. The energy required to manage my condition and maintain a healthy diet is overwhelming. Sometimes, I don't have the energy to cook or eat properly, which only makes things worse".

Financial Burden: Three out of seven participants (42.8%) discussed financial problems and high costs associated with maintaining a proper diet.

Patients' feelings about provider care, respecting gastrointestinal health: Participants were then asked how much they felt their treatment team addressed their gastrointestinal needs; the analysis of the results indicated that it was acceptable but needed improvement. Participants in the study (100%) believed that the treatment team addressed gastrointestinal health, but they felt that this attention was insufficient and could be improved. Among the suggestions made for improvement, the following can be highlighted: the presence of a gastroenterology specialist linked with the responsible physician in the treatment team, providing dietary guidance, offering information on managing the side effects

of antiretroviral medications, extending the duration of visits, and finally, adding a nutritionist to provide more comprehensive care.

Lifestyle changes and self-care: Patients were then asked about the lifestyle changes and self-care practices they had made to improve their gastrointestinal health, as well as the problems they encountered in this regard. The results obtained from coding are as follows: Dietary compliance: Three out of seven participants in the study (42.8%) reported trying to adhere to a diet and avoid foods that irritate the gastrointestinal system.

Table 2 summerizes above codings of this study, highlighting main themes, themes, and subthemes of

Table 2. Table describing themes and subthemes of qualitative research coding

Main themes	Themes	Subthemes
Cardiovascular health	Cardiovascular health problems	- Hypertension - Elevated blood lipid levels - Risk of cardiovascular diseases
	Patients' challenges in managing cardiovascular health	- Medication side effects - Increased treatment costs - Lack of challenges and concerns
	Patients' feelings about care provider, respecting cardiovascular health	- Trust in the treatment team - Acceptable but needs improvement - Dissatisfaction
Respiratory health	Respiratory health problems	- Respiratory infections - Chronic cough
	Patients' feelings about provider care in regard to respiratory health	- Lack of preventive measures - Absence of training on maintaining respiratory health - Satisfaction with the performance of healthcare staff
Musculoskeletal health	Musculoskeletal problems among PLWH	- Joint pain and stiffness - Osteoporosis - Severe muscle wasting and weight loss - Muscle weakness
	Patients' challenges in managing musculoskeletal health	- Side effects from using antiretroviral medications - Multiple visits to specialists - Increased costs
Skin and hair health	Skin and hair problems after HIV diagnosis	- Severe thinning and hair loss - Skin lesions - Increased susceptibility to skin infections - Loss of youthfulness and skin vitality
Gastrointestinal health	Gastrointestinal health problems after HIV diagnosis	- Bowel disorders - Abdominal pain - Decreased appetite

the study.

Discussion

To identify the priorities and cardiovascular health needs of elderly males living with HIV, interviews and data analyses were conducted. Result of analysis is summarized in table 2. Findings regarding cardiovascular health revealed that dyslipidemia and hypertension were the most commonly reported conditions. Most participants were unaware of the relationship between HIV and cardiovascular disorders. One of their main requests in this regard was for more attention from healthcare staff for preventive measures alongside therapeutic care. Many participants (71.4%) had not made any lifestyle changes to maintain their cardiovascular health, citing insufficient motivation due to aging, a lack of emotional support, fatigue, and overwork as significant reasons. Participants were asked about their most significant challenges and concerns regarding maintaining cardiovascular health.

The main issues raised included a lack of awareness about the side effects of antiretroviral medications and their impact on cardiovascular health, the absence of detailed guidance on the role of this virus in cardiovascular health, and increased treatment costs. Based on this article and considering the increasing population of PLWH, it is hoped that necessary support will be provided to PLWH regarding cardiovascular health. Further investigations in this area could be beneficial.

In interviews conducted by our team regarding respiratory health, respiratory infections and chronic cough were the most prevalent complaints. Only 28.5% of participants in this study were aware of the relationship between HIV and respiratory disorders. Participants mentioned anxiety and concern about reinfection with respiratory infections, difficulty quitting smoking, and lack of awareness regarding the side effects of antiretroviral therapy as challenges to maintaining their respiratory health. Furthermore, the majority of participants believed that their respiratory health was not sufficiently addressed by healthcare teams and demanded educational and preventive measures. All participants took precautions against upper tract respiratory infections, and some (28.5%) also avoided going outside on polluted days.

Joint pain, severe muscle wasting, osteoporosis, and muscle weakness were among the most significant disorders experienced by participants regarding their musculoskeletal health. When asked about the challenges they faced in managing their musculoskeletal health, side effects from antiretroviral medications, including osteoporosis and muscle wasting, increased treatment costs, physical therapy sessions, and the need for multiple visits to various specialists and physical therapy clinics were identified as significant challenges. Additionally, all participants in the study believed that the treatment team did not adequately address their musculoskeletal health, citing reasons such as a sole focus on HIV management, lack of warnings about related drug side effects, neglecting specific musculoskeletal health needs, and inadequate communication with relevant specialists.

Engaging in exercise and physical activities was a common practice among all participants aimed at improving their musculoskeletal health. Still, they cited a lack of motivation due to aging, high costs, and fatigue from chronic illness as significant problems in this regard. Interviews also indicated that participants were aware of the importance of exercise in maintaining their musculoskeletal health. The interviews conducted in this study revealed that although participants expressed concerns about the effects of medication side effects on various aspects of their health, they were largely unaware of the different side effects and coping strategies.

Hair thinning and hair loss, skin lesions, increased susceptibility to skin infections, and loss of youthfulness and skin vitality were identified as the most significant issues related to skin and hair health mentioned by participants in the study. All of the participants believed that HIV increases the risk of skin and hair disorders. Participants were then asked about the challenges they faced in managing their skin and hair health alongside HIV, with side effects from HIV treatments, high costs and time required for skincare being the most significant challenges they faced in this regard. When asked about their satisfaction with the healthcare team's attention to their skin and hair health, all participants believed that the treatment team did not adequately address their skin and hair health. Suggested solutions included

referrals to experienced dermatologists and regular check-ups related to skin and hair health. Among the lifestyle changes participants made to improve their skin and hair health were using skincare products and adhering to medical prescriptions. At the same time, they identified the high costs of skincare products as the biggest challenge in this area.

Bowel disorders, abdominal pain, and decreased appetite were among the most common gastrointestinal health issues experienced by participants in this study. The biggest challenges patients experienced in managing their gastrointestinal health after contracting HIV included managing gastrointestinal side effects from antiretroviral medications, fatigue and weakness, and financial burdens. All participants found the performance of the treatment team regarding their gastrointestinal health to be acceptable, but they believed there was room for improvement.

The most important suggestions in this area included having a gastroenterologist linked with the responsible physician on the treatment team, providing dietary guidance, offering information on managing side effects from antiretroviral medications, extending appointment times, and adding a nutrition specialist for more comprehensive care. Following a dietary regimen was a change that some participants adopted to improve their gastrointestinal health; however, the majority did not report any changes in their diet. In interviews conducted by our team, participants discussed the practical and potential role of nutrition specialists in their treatment teams, highlighting the need for more comprehensive care.

PLWH may face psychological distress and social stigma as well. In this study, social stigma, depression, fear of disclosing HIV status, sleep disturbances, and fatigue due to chronic illness were identified as the most significant psychosocial issues faced by participants.

The analysis of results from this population showed that patients were not satisfied with the performance of the healthcare team in any aspect of their health (cardiovascular, respiratory, *etc*.). Another study conducted by Moradi and colleagues in Iran concluded that the quality of services provided to HIV/AIDS individuals in Iran is low and unsatisfactory. Among the main issues raised was the need for ongoing staff training, low awareness among physicians and medical staff, the need for counseling services, inappropriate behavior from healthcare staff, lack of medical facilities and services, dissatisfaction with hospital services, shortage of personnel in centers, and dissatisfaction with the quality of maintenance treatment with methadone in some centers (21). The analysis of results from this study also indicated similar outcomes, with common topics raised, including the provision of more comprehensive services, collaboration between the responsible physician and specialists from other fields, offering preventive services, extending appointment hours, providing services and subsidies to facilitate visits to physicians, greater support from insurance companies, determining a responsible organization, educating uninformed healthcare staff, providing care guidelines such as nutritional advice and lifestyle recommendations, offering explanations regarding medication side effects and managing these side effects.

The study also examined the reasons for patients not addressing certain health aspects, which included lack of motivation due to aging, absence of emotional support, fatigue from chronic illness, burnout from overwork, concerns about their lack of awareness regarding medication side effects, difficulties in quitting smoking, multiple costs associated with medical visits, and high treatment expenses. It appears that increased attention from the government and relevant organizations to the issues raised by patients could have a positive impact on their overall health. Participants frequently mentioned the effective role of group counselling sessions with peers or private sessions, as well as emotional support from family and acquaintances, which was also highlighted in the article.

In another study conducted by Mehraeen and colleagues that examined the effect of mobile applications on self-care for HIV, identified HIV programs included self-care, self-monitoring, and self-management (n=7), improving medication adherence (n=5), prevention and treatment (n=5), adherence to ART (n=4), cognitive-behavioural stress management (n=1), and support for safer pregnancies among couples living with HIV (n=1). The findings indicated that health strategies (mobile health strategies include utilizing wireless devices

such as mobile phones) had a significant positive impact on ART adherence, medication compliance, prevention and treatment efforts, as well as social and behavioural issues affecting PLWH [22]. On the other hand, in the current study, the older participant population did not utilize the applications designed for this purpose. This situation may suggest that educating older individuals on how to use available technologies could be beneficial.

The current study interviewed seven male individuals living with HIV over 60 years of age. Although this subcommunity is steadily increasing in number, research regarding their health needs is limited. This study and similar studies can set the pace for future healthcare planning teams to prioritize needs while meeting the needs of older male PLWH. A quantitative large sample size and more detailed questions, with consultation from specialists, could complete this study and are recommended for future studies.

Conclusion

Older male people living with HIV are a growing subcommunity within PLWH. As the population of older males living with HIV increases, identifying and meeting the needs of this group becomes more important day by day. This study revealed that older male individuals living with HIV face numerous challenges regarding their physical, mental, and social health. HIV has a profound effect on several aspects of physical health, including cardiovascular, respiratory, skin and hair, musculoskeletal and gastrointestinal health. This study examined the most common comorbidities associated with HIV among older males living with this disease. Common issues faced by participants included hypertension, hyperlipidemia, respiratory infections, chronic cough, joint pain, osteoporosis, muscle weakness, muscle wasting, hair loss, skin lesions, skin infections, mood disorders, and decreased appetite. Patients also identified medication side effects as a significant factor contributing to some of their problems.

It is essential for people living with HIV (PLWH) to be aware of these implications to recognize symptoms promptly and seek professional help if necessary. This study reveals that a substantial number of older male people living with HIV (PLWHs) are unaware of these complications. Informing people living with HIV about this matter could be a potential future public health measure. Some of the challenges faced by older male PLWHs while managing their health are medication side effects, increased treatment costs and doctor appointments being time-consuming.

Most participants reported that the quality of care provided by healthcare personnel was unsatisfactory. Some of the complaints included a lack of preventive measures, a lack of empathy, and inadequate knowledge. People living with HIV could benefit from an organized nationwide training program for healthcare providers.

This study identified some of the challenges faced by people living with HIV in maintaining their health, and it is hoped that the results will inform planning by healthcare teams and responsible organizations in addressing the health needs of these patients, thereby facilitating further exploration of this topic. Future research with broader topics can help investigate this issue further.

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Conflict of Interest

The authors have no conflict of interest.

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