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Sociodemographic profile, clinical factors and quality of life of people living with HIV: basis for policy brief development

Joseph Michael D. Manlutac *

Assistant Professor, Graduate School of Nursing, Angeles University Foundation, Angeles City, Philippines.

Abstract

The objective of this study was to investigate the socio-demographic profile, clinical characteristics, and quality of life of people living with HIV/AIDS (PLWHA) in Angeles City, and to identify associations, differences, and effects among these variables. The study used a convergent parallel mixed methods research design with 315 PLWHA as respondents, and data was collected using a survey questionnaire that included the patients' demographic profile, the standardized World Health Organization Quality of Life (WHOQOL) questionnaire, and secondary data for the patients' clinical profile. The results showed that most of the respondents were male, aged 30-34, single, college graduates, working in the BPO industry, with a monthly income of Php15,000 or less, and identifying as homosexual. Clinically, most were in WHO clinical stage 1, had no comorbidities, had undetectable viral loads, and were receiving anti-retroviral therapy for 4-6 years with a lamivudine-tenofovir and efavirenz regimen. The study also found that overall quality of life of the respondents was relatively high, with significant factors affecting quality of life including BMI, marital status, occupation, monthly income, sexual orientation, drug regimen, and comorbidities. The study suggests implementing a 7-Point Policy to improve the quality of life of PLWHA in program design and cascade services. The findings of this study can be useful for policymakers and healthcare providers in improving the care and well-being of PLWHA in Angeles City.

Keywords: Socio-demographic characteristics; Clinical characteristics; Quality of life; Differentiated service delivery; Policy brief

1. Introduction

In a manner that HIV changed the world of global health decades before this pandemic, Coronavirus Disease 19 (COVID-19) has changed and strained the healthcare system worldwide. The changes have exacerbated the situation in the Philippines, which has been in an HIV epidemic being the country with the fastest growing cases of HIV in Asia and the Pacific region and one of the fastest in the world with a growth rate of two hundred thirty-seven percent (237%) at present [1]. According to the director of UP Manila Institute of Molecular Biology, Dr. Edcel Maurice Salvaña, while the cases of HIV is small compared to the global scenario, the rate at which the cases is growing at 35 cases a day is alarming [2]. Particularly, in Region III, there are 8,665 cases recorded as of May 2021 with Pampanga ranking second in terms of the number of cases at 2,425 or twenty-eight percent (28%) of the total number of cases in the whole province. In Pampanga, Angeles tallied the highest number of cases which accounted for a cumulative count of 803 as of May 2021 [3].

The need to scale up HIV treatment and care services despite the health crisis is crucial to contain and stop the spread of the virus. However, pandemic conditions such as stringent limitations on movement, transportation of people, and provision of essential services can disrupt screening, treatment, and other services to people living with HIV and AIDS (PLWHA). According to UNAIDS Executive Director Winnie Byanyima, services are disrupted due to restricted

* Corresponding author: Joseph Michael D

movements as the country fights against another pandemic. Disrupting access to antiretroviral drugs, service availability, quality of care, adherence to ART, and associated costs during disruptive times may affect the quality of life of PLWHA . The World Health Organization (WHO) defines quality of life as an individual's perception of their position in life and has been used to measure well-being in the physical, psychological, social, and environmental domains [4]. Differentiated service provision and scaling up prevention programs while reinforcing human rights related to access among special populations must be considered to sustain the fight against HIV. While there are prevalent studies on the QOL of people living with HIV in the Philippines, there is dearth in the studies associating Quality of Life (QoL) with factors for a differentiated service delivery. Hence, this study aims at determining associations of the socio-demographic and treatment characteristics to the QOL of PLWHA in a Primary HIV Care Clinic in Angeles City in order to facilitate the development of a differentiated service delivery for treatment and social care programs and interventions.

This study is framed from the lens of Systems Theory which is largely attributed to Karl Ludwig von Bertalanffy. This systems theory puts forth the concept that in order to understand the whole, the interrelations of its parts must be understood and not taken in silos. Translated into healthcare, this theory illustrates how a goal can be achieved by the concerted efforts that all stakeholders can put together across types of endeavor to allow for the detection of patterns and system failures that can be corrected and improved to achieve the goal which is set.

In the context of this study, seeking for improvement on the quality of life of people living in HIV/AIDS by determining the associations, differences and effect of some variables for a more informed policy on differentiated service delivery requires a closer look at people living with HIV/AIDS. The systems in assessing the quality of life of PLWHA, the screening, testing, treatment systems, the systems in delivering services, the systems in the systems in the DOH organization, the systems in society, the Department of Health, the community based, the advocates and the whole system of governance and all the other systems necessary for the achievement of goals must work in harmony to achieve the target of an improved quality of life of people living with HIV/AIDS. This whole issue of quality of life of people living with HIV/AIDS is not just not just a heath issue; it is a societal, communal, economic, civic, human rights, and governance issue [1]. Hence the whole system of the Department of Health (DOH) along with the other stakeholders need to work together to attain the goal of suppressing the virus and preventing its spread.

A system has internal parts that have behaviors, and these parts relate to the larger environment upon which they operate. Organizations involved in providing quality of life of people living with HIV/AIDS, the Department of Health and its auxiliary organizations have their own systems consisting of departments which exist in complex environments social, political, legal and so forth, internal parts in which they need to relate to. The PLWHAs happiness and survival can be impacted by the harmony of sub-systems within the whole sphere of fight against HIV/AIDS.

The health ,survival ,prosperity, and the ability of the organization to achieve its goals is contingent on the dynamic responsiveness of the organization or the individual to the environment and this continual system of adjustment , internal adjustments among the parts of the organization needs to employ mindful of both the parts of the organization and the environment and do what they can to contribute to the smooth workings of the departments and the teams of professional within the organization while continually monitoring and adjusting to change and environmental conditions around the org organization [5].

This study was anchored on the concept that the socio-demographic and clinical characteristics could have association, difference, and effect on the quality of life of people living with HIV/AIDS during disruptive time which can be an impetus in crafting informed policies for a differentiated service delivery for the improvement of the quality of life of this group.

The quality of life as the dependent variable in this study was defined by WHO as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" [4]. This quality of life was broken down into four domains which are: physical, psychological, social and environmental as contained in the WHOQOL-BREF, consisting of 26 items. The physical domain comprised seven items covering the presence of pain and discomfort, dependence on substances or treatments, energy and fatigue, mobility, sleep and rest, activities of daily living, and perceived working capacity. The psychological well-being consisted of 8 items that include areas such as patient's affect, both positive and negative, self-concept, higher cognitive functions; body image and spirituality. Social relationships domain speaks of the social contacts, family support and the ability to care for family, and sexual activity. The last domain, the environment comprised 8 items that assess freedom, quality of home environment, physical safety and security and financial status, involvement in recreational activity, and health and social care as applicable to the quality and accessibility thereof [6].

The independent variables included in this study were the socio-demographic and clinical characteristics. On the one hand, the socio-demographic characteristics factored in this study are sex, age, marital status, educational attainment, occupation, monthly income and sexual orientation. On the other hand, clinical characteristics like stage, length of time on ART, presence of comorbidities, and the number of antiretroviral drugs taken were considered as another group of independent variables. The determination of a PLWHA's well being was viewed not only by his or her health status and response to treatment, but also by other social dimensions. Such factors should be underscored by clinicians and policy makers in the management of PLHIV [8] as cited by [7]. The socio-demographic characteristics, such as age, gender, education, and income had been found to be strongly associated with the QoL of PLHIV [9] [10] [11]. Among other important significant determinants of QOL identified by multivariate analysis is age [12] which may be attributable to a higher CD4 T cell count that is expected of younger person due to a better thymic function among people in the younger age group [6].

Some studies showed that sex, age, education, employment, income was among the determinants of quality of life among PLHIV in developed countries [8] as cited by [7]. Others expressed that the females and those with low level of education had lower QoL in the absence or presence of ART. Women, older PLHIV and PLHIV with advanced disease require more support in order to improve their QoL [8] as cited by [7]. In other studies, females obtained lower scores in the psychological and the SRPB domain [12]. Older age, higher education, less advanced disease, and ART were predictive of better QOL. [13]. In addition, certain socio-demographic background such as being unmarried, was seen to be associated with significantly lower mental and physical dimensions of QOL [14].

In terms of sex, studies varied in terms of outcome as some studies found no difference in the mean QoL scores of male PLWHA and female PLWHA in all domains assessed, which is similar to what Wig and his colleagues' study in India. Most quality-of-life studies documented sex differences in QOL scores, with men having a better QoL scores in some domains in comparison to women. In such studies, men actually reported higher QoL scores in the environmental domain and women had higher scores on the spirituality-or-religion and personal beliefs domain,28 suggestive of the fact that women tend to be more spiritually inclined than men. In the study of [6], the lack of sex differences in QOL scores reported could have been attributable to the dominance of females among the respondents.

As regards monthly income, it was found that higher income was associated with better quality of life among PLHIV receiving ART [8]as cited by [7]. In contrast, it was noteworthy that a decline in income after the diagnosis of HIV negatively influenced psychological, social relationship and environment domain [12]. Aside from income, education was seen to be crucial in improve the QOL as this may also improve income. Educational status, was found to have significant effects on physical health domain of QOL after controlling possible variables [15]. The study of [16] suggested that patients who had higher educational attainment can understand better the state of the disease and the instructions given on drug usage which invariably enhanced their QOL. Additionally, higher education was predictive of better QOL in the study of [13].

In regard to sexual orientation, there were studies that established association of sexual orientation on the quality of life of people living with HIV/AIDS. Older gay and bisexual adult men with and without HIV disease experienced additional psycho-social risks, such as lifetime victimization due to stigmatized sexual identity, which were associated with poor physical and mental health [17] .However, non-heterosexual orientation was negatively associated with quality of life in almost all dimensions in the studies of [18].

Another category of characteristics comprising the independent variables in this study was the clinical characteristics. The stage upon which the PLWHA was classified upon diagnosis, the length of time on antiretroviral therapy, the presence of comorbidities, and the number of drugs taken by the patient were the variables considered in this second category under investigation. The World Health Organization's (WHO) stage 3 and 4 classifications associated with poor QOL among PLHIV on ART. Older age and the presence of opportunistic infections were associated with lower QOL among PLWHA receiving basic care only [8] as cited by [7]. Additionally, in [13] study, it was indicated that less advanced disease was predictive of better QOL.

Clinical staging was done during confirmation of HIV infection as evidenced by serological and/or virological evidence of HIV infection. This HIV infection is attributed to the decrease in the number a specific type of lymphocyte, the T cells that bear the CD4 receptor (CD4+). The immune status of a child or adult living with HIV can be assessed by measuring the absolute number (per mm3) or percentage of CD4+ cells, which was the established assessment and characterization of the severity of HIV-related immunodeficiency. The clinical events used to categorize HIV disease among infants, children, adolescents or adults living with HIV are divided into clinical stage in simplified terms describing the spectrum of HIV related symptomatology as asymptomatic, mild symptoms, advanced symptoms and severe symptoms.

The clinical stages of HIV have been linked to survival, prognosis, and progression of the disease without antiretroviral therapy in both adults and children. Staging, length of time on ART, and presence of comorbidities were found to be among the determinants of quality of life among PLHIV in developed countries. The early stage of the disease had a significant positive influence on all domains of QOL, with staging being the most influential determinant of all domains, including wasting and death [8] as cited by [7]. Studies showed that the duration of ART had an association with the QOL of patients living with HIV/AIDS. Patients who had been on ART for a longer duration had higher QoL, suggesting that they had perceived medications as part of their daily routine and had developed coping strategies to overcome the adverse effects of ART, which had an impact on their QOL [36] [16]. The presence of comorbidities, such as depression, could significantly impact physical and mental health outcomes and overall QOL. Respondents with comorbidities and those who had a history of HIV-related hospitalizations showed lower QOL scores in the environmental, physical, and independence level domains [13] [19] as cited by [20]. Other symptoms might contribute to the patient's reliance on drugs that may affect their daily lives and limit their physical capacities [21]. In Rwanda, tobacco users and those with abdominal obesity reported physical inactivity and hypertension as having a negative impact on mental quality of life and physical HRQOL, respectively [14].

According to[14], the use of a larger number of medications with greater potential for side effects might contribute to a poor quality of life among patients living with HIV. Improving and strengthening quality of life among PLWHAs is an important goal for HIV/AIDS services. Regular assessment of HRQL, as recommended by [22], can provide potential information for interventions to improve quality of life. ART is predictive of better QOL, as noted by [13]. Identifying factors that determine quality of life is important in better tailoring health and social care services to improve the functioning and well-being of people living with HIV/AIDS, as stated by [22]. Clinicians and policymakers should underscore these factors in the management of PLHIV, as highlighted by [8] cited by [7]. Health care professionals were encouraged to become familiar with the full spectrum of predictors of HRQOL to contribute to the development of multiple entry points for interventions in promoting QOL in PLWHAs, according to [23].

2. Related Literature

2.1. Socio-demographic characteristics

To a country which is plagued by the HIV epidemic, examining the association of variables such as socio-demographic characteristics with the quality of life of people living with HIV and AIDS during this time of pandemic can provide a deeper understanding of the patients and can lead to a differentiated service delivery with the ultimate goal of their treatment and management. Before the outbreak of the corona virus -19, the Philippines has been in an HIV epidemic as it is the country with the fastest growing cases of HIV in Asia and the Pacific region, and one of the fastest in the world. HIV -related deaths have been accounted to have reached to 450 percent at present. According to [1], the Philippines has fallen short of the 90-90-90 global target with less than half of the people living in HIV/AIDS are on treatment with ART who are supposed to have been virally suppressed.

The prevailing pandemic is derailing the country's fight against AIDS as fewer Filipinos who may be living with the human immunodeficiency virus (HIV) have not been tested as they fear that if they go out, they may contract the corona virus. Anakalusugan Rep. Mike Defensor, who serves as the vice chairperson of the House committee on health, confirms this phenomenon as he verbalized that the Philippines "is facing a new surge in HIV cases on account of 'disruptions' caused by the COVID-19 pandemic" based on the National AIDS Registry statistic. Defensor said that at the height of lockdowns from April to June 2020, only 934 new HIV cases were detected countrywide, where a dramatic decline is seen at 68 percent from the 2,938 detected in the same three-month period in 2019.On the whole, from January to September this year, only 5,627 new HIV cases were diagnosed, which had a 42 percent decrease from the 9,749 discovered in the same nine-month period in 2019. Defensor said that the phenomenon leaves thousands of Filipinos living with HIV undiagnosed and untreated. Rep. Mike Defensor, citing the Department of Health, believes that, early diagnosis and antiretroviral therapy (ART) slow the progression of the virus to a near halt and reduces the risk of transmission. AIDS epidemic remains to be a global crisis and fueled by inequalities.

The COVID-19 pandemic has put a significant strain on health systems worldwide, including those managing the treatment and care of people living with HIV/AIDS (PLWHA) in the Philippines. Access to antiretroviral therapy, mental health services, and social protection are among the emerging issues compounding the already burdensome health condition of PLWHA [24]. Socio-demographic factors such as age, gender, education, and income have been identified as strongly associated with the quality of life (QoL) of PLHIV, with age being particularly influential due to its association with CD4 T cell count [12]. Other studies have shown that females and those with lower levels of education tend to have lower QoL, and that older age, higher education, less advanced disease, and ART use are predictive of better QoL [8][13].

In Ghana, being younger, male, and having more than 13 years of schooling were associated with higher QoL, while women tended to have lower scores in the psychological and spiritual well-being domains [25].

[26] study found that a higher percentage of people living with HIV/AIDS (PLWHA) were females and among the educated groups, and HIV/AIDS was more prevalent among the employed/self-employed and almost half of the overall PLWHA studied were married. The study recommends educational campaigns in neglected sectors emphasizing prevention, awareness, and control. They also suggest a written policy and a formalized check system to make HIV screening and open disclosure of HIV/AIDS status mandatory prior to marriages. International initiatives and government interventions should be well-designed and placed in a socio-demographic context to address the target groups. In addition, health facilities represent a key point of contact with people with HIV who are unaware of their status and who would benefit from HIV-specific services, including Provider-Initiated Testing and Counseling (PITC). On the other hand, another study found that socio-demographic factors were negatively associated with the parameter p, while urbanicity was positively associated with p, which contributes to shaping the early growth dynamics of the HIV epidemic at the local level. The results of this study have theoretical significance in understanding differences in growth scaling across different sexually transmitted disease systems and have public health implications to guide control.

2.2. The clinical characteristics

In some studies [8] sex, age, education, employment, income was revealed to be among the determinants of quality of life among PLHIV in developed countries. Others expressed that the females and those with low level of education had lower QoL in the absence or presence of ART. Women who were older PLHIV and PLHIV with advanced disease required more support in order to improve their QoL [8] as cited by [7]. In other studies, females obtained lower scores in the psychological and the SRPB domain [12]. Older age, higher education, less advanced disease, and ART were predictive of better QOL [13].

In a study titled, [27] study ought to examine the socio-demographic factors associated with LTF of HIV-infected women highlighted the need for innovative and effective counseling techniques for less educated women, economic empowerment of women, better strategies to increase uptake of partner's HIV testing, and early registration of women in the program for preventing LTF in PMTCT programs. According to [28], there was a finding that consistent use of HIV medicines (called antiretroviral therapy or ART), can prevent HIV from progressing to AIDS. ART helps control the virus so that PLHIV can live a longer and healthier life and reduce the risk of transmitting HIV to others. The prognosis for people with HIV has significantly improved over the past two decades. Many people with HIV can live long and productive lives. The United States The Department of Veteran Affairs (VA) reports that HIV patients are now living longer than the 15 years that medication has been available, and that patients are more often dying from causes other than AIDS. Proper management of existing conditions can reduce negative effects on the physical health, psychological health, social relations, environment, independence level, and spirituality of PLWHA. Antiretroviral therapy is found to be the strongest factor affecting the QOL of PLWHA, with a significant correlation between acceptance to ART, CD4 level, and QOL of all domains. Higher CD4 levels and better ART adherence were associated with higher QOL [29]. However, the effect of interventions on QOL may vary depending on the clinical staging during diagnosis. Asymptomatic PLWHA had better QOL in the physical and level independence domain compared to symptomatic and AIDS-converted respondents in a study in Dhaka [30]. Finally, a study in India found that viral STIs, particularly HIV and comorbidities, had the greatest impact on QOL compared to other STIs such as genital HPV infection [31].

2.3. Quality of life (QoL) of People Living with HIV/AIDS (PLWHA)

According to [32] the best source of information in assessing the QOL is always the patient himself as studies revealed that the credibility relies on the treatments given and to the progress of the patient. WHO defines QOL as an individual's perception of their position in life in the context of the culture and value systems in their living milieu and in relation to their concerns, expectations, goals, and standards [3]. Earlier studies conducted by [33] using the WHOQOL-BREF showed that the social and environmental domain was the domain most affected in the QOL. Aspects on personal relationship and social support yielded the lowest transmuted score and with the significant difference to the general QOL. This showed that the better personal and social relationships the patient has, the better the QOL because like the children they are always doing their best and they need other people's attention [34]. On the aspect of environmental domain, financial constraint and access to health and services were the aspects needing more attention. Specifically, financial capability and available access to health and services equate to better QOL This emphasized the need to prioritize social support and improve personal relationship for the clients, assuring non-discriminatory environment and marginalization as critical towards the social, physical, and financial well-being.

On the other hand, PLWHA in Taizhou had a low QOL score in the physical and psychological domain with high noted score in the social domain. Particularly, the aspects of sleep and rest, energy and fatigue, and pain and discomfort were

the ones with the lowest transmuted scores. Results revealed that those in younger age group, males, and with work are the ones with better QOL and with better results for physical and psychological domains. There was also noted significant difference in the environmental domain where homosexual males having the highest. This can be attributed with the organized groups and support systems for this type of key population and their noted capability to adapt to changes. Furthermore, those with higher educational level had better scores in physical and environmental domains, pointing out that level of awareness affects level of security and adaptability [29].

In connection with this, a study in the Liaoning Province with 800 respondents presented that social domain was found to be the most important contributor for the QOL of PLWHA who contracted the disease via sexual contact. This can be attributed to the social and sexual behaviors of the respondents prior to diagnosis. This study revealed that those with better social and sexual relations haa better QOL. It also showed that as the psychological domain improved, the other domains and the general QoL also generally improved.

A study for PLHWA in Lebanon, Middle East, and North African Region showed that asymptomatic well-functioning individuals reported a fair level of QOL more than those PLWHA in symptomatic or on AIDS status, who revealed lowest QoL and HRQoL scores. Duration of treatment was also critical as it found out that most of the clients with prolonged treatment duration had a decreasing trend in transmuted scores in psychological and environmental domains. This was attributed to the phenomenon of "pill/ treatment fatigue," where clients on chronic illness lost drive to life and well-being as they progressed to treatment. The strongest determinants of QOL revolved around psychosocial aspects of life, particularly positive self-imaging, self-esteem, and the collateral aspects of religion and beliefs.

Moreover, in a study conducted in India to assess the Quality of life of PLWHA in relation to various socio-demographic and clinical correlates, results showed that the Quality-of-Life scores for all domains were intermediate for the PLWHAs between (10 - 14). The mean scores were highest for psychological domain. Further, there came out a significant difference in QOL of PLWHA who were on ART and Not on ART in some domains. PLWHAs who were literates, married, single, employed with income more than 1500 not on ART, CD4 count of more than 200, earlier stages of HIV, living with spouse and students had high mean scores. Mean difference of QOL scores with duration of ART intake were statistically significant in psychological and Spirituality domains. QOL was found to be determined by education, income, occupation, ART status, duration of taking ART and clinical categories of the disease [35].

2.4. Relationship between socio-demographic characteristics and clinical characteristics of PLWHA

Silva, et al. (2014), found out in their study that in regard terms of clinical characteristics for the CD4 T cells count, most participants (220/70.1%) had more than 350 cells/mm3. The viral load was undetectable for 248 (79%) participants; from 50 to 100,000 copies per ml were observed for 59 (18.8%) individuals, and seven (2.2%) individuals presented more than 100,000 copies per ml. In terms of time since diagnosis, it showed that all the individuals presented higher scores in the psychological and spiritual domains among those domains concerning quality of life, according to the WHOQOL HIV BREF. No significant differences were found in the WHOQOL HIV BREF regarding the counting of CD4 T lymphocytes. This study found significant differences in the association between viral load and the psychological, level of independence, and environment domains. Higher scores in all the QOL domains were identified among individuals with a viral load below 50 copies per ml.

As for the presence of diseases or comorbidities in association with QOL domains, no significant differences were found, though significant association was found in regard to the psychological domain and previous diseases. The clinical variable "use of antiretroviral" did not present significant difference in the QOL domains, according to the WHOQOL HIV BREF. When the average scores of QOL were analyzed in regard to therapeutic adherence, it was verified that the individuals classified as "non-adherent" presented the worst scores in all the QOL domains. presented statistically significant results for the domains: physical, psychological, social relationships, religion, and the assessment using the CEAT.

 The clinical stages had been associated to survival, prognosis and progression of clinical disease without antiretroviral therapy in adults and children. In some studies staging , length of time on ART, and presence of comorbidity are among the determinants of quality of life among PLHIV in developed countries .They reported the following factors to be associated with QoL [7]. Early stage of disease has significant positive influence on all domain of QOL. Of the three determinants, staging was the most influential determinant of all domains, including wasting and death.

Evidence from studies show that the duration of therapy on ART, had association on the QOL of patients living with HIV/AIDS. [36] found that patients on antiretroviral therapy for a longer duration, had higher QoL. The results suggested that patients had perceived medications as part of their daily routine and had also developed coping

strategies to overcome the adverse effects of antiretroviral therapy which had impact on their QoL. In line with this work was a study conducted which revealed a significant improvement in the QoL of respondents after 1 to 4 months of treatment with antiretroviral therapy which prevailed for a year [16]. The presence of comorbidities which this study aims to explore as having association on the quality of life of PLWHA may be a factor to associate on the QOL. Some researches prove that the presence of comorbidities can mean poor quality of life. In fact, in the investigation made by [13], the presence of Depression in PLHIV was very significantly associated with poorer physical and mental health outcomes and overall QOL. All the domain scores of QOL were highly significantly impaired in subjects with depression. Moreover, respondents with comorbidities and those who had a history of HIV related hospitalizations showed lower quality of life scores in the environmental, physical, and independence level domains [19].

The presence of other symptoms may be contributory to the patient's reliance on drugs that may affect their daily lives and limit them in terms of physical capacities [21].In Rwanda, results in a study indicated that tobacco users and those who had abdominal obesity reported physical inactivity and hypertension as having a poor mental quality of life and a negative impact on the physical HRQOL, respectively [14]. The use of a larger number of medications, with greater potential for side effects may contribute to a poor quality of life among patients living with HIV and could have a negative effect which may hamper daily living and physical capacities [14].

2.5. Differentiated Service Delivery for PLWHA

While early observational data supported the effectiveness of various DSD models, more recently published trials as well as evaluations of national scale-up provide more rigorous evidence for effectiveness and performance at scale. Deeper understanding of the mechanism of effect of various DSD models and generalizability of studies to other countries or contexts remains somewhat limited. Relative implement ability of DSD models may differ based on patient preference, logistical complexity of model adoption and maintenance, human resource and pharmacy supply chain needs, and comparative cost-effectiveness. However, few studies to date have evaluated comparative implementation or cost-effectiveness from a health systems perspective [37].

At its core, differentiated service delivery (DSD) for HIV is centered around clients' needs and expectations and relieving unnecessary burdens on the health system. In the 2016 World Health Organization (WHO) antiretroviral therapy (ART) guidelines, it was acknowledged that adaptations to the delivery of HIV services were necessary to achieve the "treat all" recommendation. This transition from a "one-size-fits-all approach" to DSD means modifying the location, frequency and package of services as well as the cadre providing services, considering the clinical needs, specific population and the context including urbanicity, stability of context (for example high migration, conflict or pandemic) and type of HIV epidemic. Existing global and national policies around DSD for HIV can be leveraged during the COVID-19 pandemic to play a critical role in supporting uninterrupted ART and reducing avoidable contact with health facilities, thereby supporting health systems to focus on COVID-19. Recent statements from The Global Fund for HIV, Tuberculosis and Malaria (Global Fund), the Global Network of People Living with HIV (GNP+), UNAIDS, the United States President's Emergency Plan for AIDS Relief (PEPFAR) and the WHO all endorse leveraging components of DSD for people living with HIV (PLHIV) during the COVID-19 pandemic. The time is now to accelerate access to DSD for all PLHIV [38].

DSD 2.0 provides an opportunity for the HIV and Universal Health Coverage agendas—which can seem to be at odds—to achieve greater collective impact for patients and health systems by integrating strong vertical HIV, tuberculosis and family planning programs, and relatively weaker noncommunicable disease programs. Increasing coordination of care for PLHIV will increase the likelihood of achieving and sustaining UNAIDS' goals of retention on antiretroviral therapy and viral suppression. Eventually, this shift to DSD 2.0 for PLHIV could evolve to a more person-centered vision of chronic care services that would also serve the general population [39].

DSD 1.0's intentionally narrow focus on simplifying HIV services and reducing unnecessary burdens on the health care system was critical for building consensus, establishing an evidence base, and driving efforts to achieve scale. However, it does not enhance access to the full range of prevention and treatment services needed by recipients of care. Strategically addressing these needs for the long-term will be critical to maintaining patients' experience of quality of care and maximizing retention, and to ensuring both HIV viral suppression and healthy aging for PLHIV. This expanded focus is the essence of what we call "DSD 2.0."

WHO's 2016 HIV guidelines provide a template for DSD 2.0. They emphasize the importance of integrating ART services with the most common vertical programs that require repeated follow-up: TB prevention and treatment, FP, and chronic NCDs.4 A majority of adults with HIV will require longitudinal care for such non-HIV services. All PLHIV are eligible for a course of TB preventive therapy (TPT) and between 5% and 10% will develop TB at some point in their lifetimes. The unmet need for contraception among women on ART is well-documented, approaching 50% in some settings. Chronic

NCDs such as diabetes, hypertension, and mental health disorders are also a major issue. Among adults on ART in South Africa, more than 15% have hypertension, more than 5% have diabetes, and, as a recent review emphasized, there is a real risk that poor quality of care for such NCDs may undermine the investments made to strengthen HIV programs.

Providing multi-month refills and offering refills at private pharmacies for hypertension drugs and ART can strengthen health systems that support multiple patient needs simultaneously. [40] report that the AIDS epidemic remains a growing concern, with a decrease in testing and treatment due to COVID-19 lockdowns and quarantines. [41] found that age, sexual orientation, and educational status among other socio-demographic factors impact HIV test seeking behavior among MSM and recommend more targeted testing promotion strategies that consider structural and environmental factors.

2.6. Development of Policies for DSD

[26] espoused on the idea that international initiatives and government interventions should be well designed and placed in a socio-demo-graphic context in order to address the target groups. In addition, health facilities represent a key point of contact with people with HIV who are unaware of their status and who would benefit from HIV-specific services. Interestingly, the study came out with a suggestion that there should be a written policy and a formalized check system to make HIV screening and open disclosure of HIV/AIDS status mandatory prior to marriages.

In line with this, the Health Sector Plan 2020- 2022 of HIV in the Philippines vision of reversing the trend of HIV epidemic to less than 7,000 cases annually by 2022 may be realized given the policies developed. Interventions shall focus on the following strategic : a) Increase condom use among MSM and TGW from 38% (2018) to 70% (2022), b) Increase coverage of Pre-Exposure Prophylaxis from 0.05% (2017) to 7% of MSM (2022); Increase HIV diagnosis from 72% (2018) to 95% (2022); c) Increase ART coverage from 57% in 2018 to 95% by 2022; d) Sustain viral suppression among PLHIV on ART at 90%; e) Increase safe injecting practices among PWID from 40% (2019) to 80% (2022); and f) Sustain less than 50 new pediatric HIV infections per 100,000 livebirths according to Department of Health,

The main objective of this study is to determine the socio-demographic profile, clinical characteristics, and quality of life of people living with HIV and AIDS (PLWHA) during disruptive times, as a basis for developing an informed policy brief. The study aims to answer specific questions regarding the characteristics of PLWHA, including their socio-demographic and clinical profiles, as well as their quality of life. The study also seeks to investigate the extent to which socio-demographic characteristics affect clinical characteristics and quality of life of PLWHA, and the significant effect of socio-demographic and clinical characteristics on PLWHA's quality of life.

The study's null hypotheses suggest that there is no extent to which socio-demographic characteristics affect clinical characteristics and quality of life of PLWHA, and there is no significant effect of socio-demographic characteristics and clinical characteristics on PLWHA's quality of life. The study's scope is limited to 315 participants diagnosed with HIV/AIDS and living in Angeles City, Philippines, prior to the pandemic. The context of the study is the current pandemic, and responses to questionnaires must be in the context of the health crisis.

The study's significance lies in its potential benefits to various stakeholders, including the Department of Health (DOH), PLWHA, HIV case managers or counselors, HIV service organizations, local policy-makers, health workers, and future researchers. The results of this study can inform the development of policies and tailored services to respond to the needs of PLWHA during healthcare emergencies. Additionally, the study can help health workers better understand the patients and provide more efficient and differentiated delivery of services to them.

3. Material and methods

This study used a mixed methods convergent parallel design to describe the socio-demographic profile, treatment characteristics, and quality of life of people living with HIV/AIDS (PLWHA) in Angeles City, and to determine the association, differences, and effects of socio-demographic and clinical characteristics on their quality of life. The primary data was collected from 315 PLWHA patients undergoing antiretroviral therapy in Angeles City, while secondary data was taken from their medical records with strict observance of the Data Privacy Act of 2012. Qualitative questions were also prepared to gather responses on differentiated service delivery, which can be used to craft policies. The identities of the respondents were kept confidential.

This study gathered data through both online and in-person modalities from 315 PLWHA patients who were on Anti-Retroviral Therapy as of May 2021 data accounting for 56.57 percent on ART. The researcher followed a specific procedure that included obtaining permission from WHO and PHCC, signing an Oath of Confidentiality, orienting clinic

staff, and explaining the contents of the informed consent. Respondents who never started treatment, were lost to follow up, were confined to the hospital, had psychiatric issues, died, transferred to other facilities, opted to discontinue ART, or left the country were excluded from the study.

The research instrument used in this study was a questionnaire consisting of four parts. The first two parts were researcher-made and included demographic and clinical characteristics of the PLWHA respondents. Part III was a standard questionnaire created by the World Health Organization (WHO) to measure Quality of Life of PLWHA, while Part IV was a qualitative data capture from the participants. The questionnaire was made available in both English and Filipino translations, validated by a psychometrician, linguist, statistician, infectious disease specialist, and patient support group representative. Demographic characteristics such as sex, age, marital status, educational attainment, occupation, monthly income, and sexual orientation were included in Part I, while Part II comprised the clinical characteristics of the respondents.

The study used the WHOQOL-BREF, a 26-item self-directed multiple-choice questionnaire, to measure the quality of life (QOL) of Person Living With HIV/AIDS (PLWHA). The questionnaire had evaluative components such as General QOL, HRQOL, Physical Domain, Psychological Domain, Social Relationship Domain, and Environmental Domain. The questionnaire was selected because it has been widely used and validated by the World Health Organization, provides a comparison of QOL between different diseases, has a certain degree of cultural sensitivity/compatibility, can be used for all types of respondents with wide-ranging results, and is reliable (Cronbach's alpha of .85). The questionnaire was available in English and Filipino, validated by a psychometrician, linguist, statistician, infectious disease specialist, and patient support group representative. The study was conducted during the disruptive time of the pandemic.

As Part IV of the questionnaire, the following question was asked to draw out from the participants the policy they wanted to be developed:

What policy or mechanisms can be developed to improve your quality of life as PLWHA through the differentiated service delivery?

What policies or mechanisms can help improve the quality of life for PLWHAs in the context of various service delivery methods?

The sampling technique used in this study was purposive sampling with total enumeration, and 315 patients were targeted as respondents. The inclusion criteria were residents of Angeles City who were 18 years old and above and had been commenced on anti-retroviral therapy (ART) prior to or during the pandemic as of May 2021, and who gave consent to participate in the study. Exclusion criteria included patients who never started treatment, were lost to follow up, confined to hospital, had psychiatric issues, died, or transferred to other facilities during the data gathering phase, and those who opted to discontinue ART, left the country, or disagreed in joining the study. The study was conducted in Angeles City, a highly urbanized city in Central Luzon, with the aim of detecting HIV issues early and promoting a safe and smart city [33] [42].

The statistical tools used in this study include Microsoft Excel and SPSS for processing quantitative data. Frequency, percentage, and median were used to describe the demographic profile and treatment characteristics of the respondents and the quality of life of people living with HIV or AIDS. Shapiro-Wilk Normality Test was used to test for normal distribution, while Wilcoxon Rank Sum Test and Kruskal-Wallis ANOVA were used to determine significant differences in quality of life during the pandemic based on socio-demographic and treatment characteristics. Multiple Linear Regression was used to identify significant socio-demographic and clinical characteristics that affected the quality of life of people living with HIV/AIDS, with backward selection as the selection method and a p-value of less than 0.05 as the level of significance. Qualitative data were analyzed using grounded theory to generate themes in response to Problem 4.

4. Results and discussion

4.1. Socio-demographic characteristics of respondents

The socio-demographic profile of the 315 patients who participated in the study. Majority (93.65%) were males; in the age group 30-34 (32.70%); single (95.87%); and mostly college graduate (42.86%). Moreover, around 25% of the patients were working in the BPO industry; while around 15% were unemployed or students. Others were in clerical and office work (12.38%); in healthcare (10.79%); sales (8.57%); self-employed (7.62%), in the food preparation and service (5.08%); in education (4.44%); in trade worker (4.44%); in personal care service (3.49%); and in other

professional services (2.86%), and OFWs (0.95%). Majority had a monthly income of Php15,000 and below (29.52%); followed by those with Php16,000 to Php25,000 monthly income (21.90%); and Php26,000 to Php35,000 monthly income (20.95%). In terms of sexual orientation, most of the patients were homosexual comprising of 63.49%; others were bisexual (24.76%); heterosexual (9.21%); pansexual (2.22%); and asexual (0.32%). These results find consistency in the following studies and literature:

With this regard, [3] testified based on the cumulative data that ninety-four percent (92,130) of those diagnosed with HIV were males with only 6% (5,651) are females. To set the record, since 1991, the proportion of diagnosed males has been greater than that of females each year. In the past 10 years (2012- 2022), proportion of yearly diagnosed cases among males were more than 95% compared to females. At the time of diagnosis, more than half (51%, 49,579) were 25-34 years old while 29% (28,294) were among youth (15-24 years old). Furthermore, HARP added that the proportion of HIV positive cases in the 15–24-year age group increased in the past 10 years, from 22% in 2002 to 2011 to 29% in 2012 to 2022.The median age was 28 years old (age range: 1 month - 82 years).

In March 2022, 447 (29%) cases were youth 15-24 years old, among which 94% were male. There was an increase of cases reported among age groups 15-17 and 18-19 years in 2019, following the ratification of the Philippine HIV and AIDS Policy Act (RA 11166). Diagnosed cases in 2019 (120) among 15-17 years old were five times higher compared to 2014 (20) while for 18-19 years old, this was almost two times higher in 2019 (471) compared to that 2014 (170). The multivariable Cox regression results in the study of Tlou (2018) titled "The influence of marital status on HIV infection in an HIV hyperendemic area of rural South Africa, 2000-2017, "found marital status to be a significant factor of HIV infection. The study showed that the probability of HIV infection was approximately two times in those who were never married in comparison to those who were. Educational attainment was strongly associated with HIV testing among 15,388 women of child bearing age [AOR 3.8, 95% CI 1.7–8.2; p = 0.001]. HIV testing differed greatly by socioeconomic social status with an increased uptake among women with higher wealth index [AOR 4.4, 95% CI 1.9–9.9; p = 0.001]. Additionally, HIV testing was observed to be higher among the older women 25–34 years compared to the young women 15–19 years [AOR 2.3, 95% CI 1.3–4.3; p = 0.007] [43].

On this aspect, in a study conducted by [44] titled Effects of neighborhood-level educational attainment on HIV prevalence among young women in Zambia, it was revealed that the likelihood of infection in low versus the high educational attainment of neighborhoods was at 3.4 times among rural women and 1.8 times higher among the urban women. In addition, HIV prevalence followed a downward trend after substantially increasing the level of neighborhood education. In terms of occupation, the Department of Health cited a paper in 2010 titled Lifestyle and Reproductive Health Issues of Young Professionals in Metro Manila and Metro Cebu, Lifestyle, Health Status and Behavior of Young Workers in Call Centers and Other Industries: Metro Manila and Metro Cebu conducted by the University of the Philippines Population Institute (UPPI) which showed that the "Philippine workers in contact centers, compared to workers in other sectors, faced a higher probability of exposure to HIV/AIDS; the stress they experienced in the workplace, among other factors, could encourage risky sexual behavior." Another study cited was an ILO-funded study by the Department of Psychology, Ateneo de Manila University validated the prevalence of risky behaviours among contact centre workers, including early sexual activity, infrequent condom uses and promiscuity.

The rate of HIV prevalence in urban poverty areas was inversely related to annual household income. That is to say, the lower the income, the greater the HIV prevalence rate [45]. For the record, from 201 HARP reported cases involving sexual orientation. In March 2022 report, 59% (904) were cisgender meaning those having a self-identity that correspond to their sex assigned at birth (man for males; woman for females), 3% (45) were transgender women, <1% (2) identified their gender neither as man or a woman, while a single case identified himself as transgender man. Fourteen percent (210) of the reported cases do not have a data on gender Identity. A study in the US in 2019 estimated account of 1.2 million people having HIV. Of those, 754,700 were gay and bisexual men which was translated to sixty-nine percent were among gay and bisexual men [46]. Sexual identities other than heterosexual and having same-sex partners (either exclusively or in addition to male partners) were associated with high rates of several HIV-related risk behaviors. Coerced sexual contact was significantly associated with every risk outcome. AIDS education in school predicted lower HIV risk on 4 of 6 indicators [47].

4.2. Clinical characteristics of respondents

The clinical characteristics of the patients in the study. Almost 95% of the participants belonged to WHO clinical stage 1; 1.90 percent were on stage 2 and stage 4, and 1.58% were on stage 3. These results may seem to vary from the recorded incidence report filed by [3] where 14 percent of the total number of the reported cases (13,682) had clinical manifestations of advanced infection at the time of testing. This variation on CD4 and WHO clinical stage is attributable to the timing of data collection. The data from the HIV, AIDS, and ART Registry in the Philippines [48] were based on the

clinical status of the client upon diagnosis. The staging is the most recent one as gathered from the records of the patients whose staging might have slid back to a lower rung given that the client has been on anti-retroviral therapy which has clinically improved the patient's condition. Antiretroviral treatment suppresses the virus and paves the way for CD4 cells to recover. As the treatment is given to the patient, a rise in CD4 levels is expected. In the first year of antiretroviral treatment, a patient's CD4 count typically rises by 50–150 cells/mm3 [49].

In terms of BMI, 71.11% were normal, 19.37% were pre-obese, 6.35% were underweight, and 3.17% were obese. The study of [50] presented changes in body mass index among people living with HIV who were new on highly active antiretroviral therapy: a systematic review and meta-analysis concluded that the greatest gain in BMI is in the initial 6–12 months on treatment, with minor gains in the second and subsequent years of treatment. Changes in body weight in people living with HIV vary by regimen components, timing of therapy introduction (naive, switch) and demographic factors. Another study whose objective was to evaluate weight change and factors associated in an ageing cohort of treated subjects with HIV at Chelsea and Westminster Hospital found that the prevalence of obesity was similar to general population and was associated with a number of health conditions, which increase metabolic risk [51].

Moreover, majority of the participants were on treatment for more than 4 to 6 years (32.70%), followed by those more than 2 to 4 years (26.98%), and 2 months to 2 years (26.98%). Approximately 11 percent were on treatment below 6 months, and around 3percent were on treatment for more than 6 to 8 years. For the record, HARP reported in March 2022 that there were 1,124 people with HIV who were initiated on antiretroviral therapy. This recording is considered to be a 25 percent increase compared to the same reporting period in 2021 (910). Ninety-nine percent (1,121) were on the first line regimen who's median CD4 upon enrollment was at 209 cells/mm3. More so, a total of 58,746 people living with HIV (PLHIV) were presently on ART as of March 2022. Ninety-six percent (56,563) were males. The age of reported cases ranged from 1 to 80 years old (median: 32). Ninety-six percent were on the first line regimen, 3% were on the second line, and <1% were on the third line of regimen [3]. A study in Brazil determined the mean duration of the benefit of antiretroviral therapy was around 12 months. However, almost one third of patients, although they received a significant benefit from therapy, were unable to maintain it for six months. Notedly, only 25 percent of the patients did not change their regimen during one year of follow up [52].

With regard to presence of comorbidities, only 3percent of the patients had one. The comorbidities identified were Tuberculosis (n=2), Extra Pulmonary TB (n=5), Hepatitis B (n=2), and oral candidiasis (n=1). [53] conducted a study which identified that 29 percent of people living with HIV/AIDS (PLWHA) in Brent have at least one comorbidity. The most common was hepatitis, followed by mental health disorders and cardiovascular disease (CVD). Comorbidity was more likely among older male patients who had CVD and diabetes and White patients except for diabetes which was more common among Asians.

As to the most common drug regimen among the patients, the 3TC/TDF/EFV (68.89%), was the mostly used followed by 3TC/TDF/DTG which accounted for 19.05 percent, and 3TC/AZT/EFV as represented by 6.67 percent. In this consideration, the drug regimen administered comprised of 3TC/ TDF/ DTG and 3TC/TDF/EFV was deemed as the first line drugs. Further, this regimen 3TC/ABC/EFV is given when the client has either kidney problem and/or resistant to tenofovir or other non-nucleoside reverse transcriptase inhibitors (NNRTIs). The selection of a regimen is dependent on an individual's virologic efficacy, potential adverse effects, childbearing potential and use of effective contraception, pill burden, dosing frequency, drug-drug interaction potential, comorbid conditions, cost, access, and resistance test results. A pregnancy test should be performed in people of childbearing potential, and choice of antiretroviral therapy (ART) for individuals who are pregnant should be guided by recommendations from the Perinatal Guidelines. Drug classes and regimens within each class are arranged first by evidence rating and, when ratings are equal, in alphabetical order [54].

As regards CD4 count, a little more than fifty percent (50.78%) were below normal (200–499 cells/mm3), 33.33 percent were normal (500 cells to 1,600 cells/mm3), and 15.87 percent were in AIDS condition (below 200). Most of the patients had undetectable viral load (78.10%), and were not eligible (10.16%). However, for the others, 9.84 percent had low viral load, while 1.90 percent had high viral load. Variations on CD4 and WHO clinical stage are due to the timing of data collection. The data from the HIV, AIDS, and ART Registry in the Philippines [48] is based on the clinical status of the client upon diagnosis, and the study results were at the perspective that the patient is already on ART, and so is clinically improving. Viral suppression, defined as VL values below the detection limit after six months of therapy, was achieved in 56 percent of the patients. Patients under triple therapy were more likely to have achieved viral suppression than those using only two drugs (67% vs. 34% for patients using three and two drugs, respectively, p=0.002). The mean duration of the treatment benefit was 14.1 months, but 23 percent of individuals had lost it after six months of therapy. After 12 months, only 47 percent of patients still maintained a therapy benefit. The major reason for changing ARV

drugs was intolerance which affected 22.5 percent of the patients. Absence of virological response (22.5%), and viral rebound (19.2%) were the other two major reasons for changes in treatment.

4.3. General Quality of Life and General Health of the participants

The general quality of life and general health responses of the participants were presented in Table 1. Around 40 percent rated their quality of life as good, 35.56 percent rated neither, and 13.02 percent rated poor. Only 10.16 percent said they have very good quality of life. Statement on quality of life has a median of 3 which corresponds to neither. In terms of their satisfaction with their health, 38 percent were satisfied, 33 percent were neither, and 14percent were very satisfied. The statement on satisfaction with their health has a median of 4, which corresponds to very satisfied.

As a matter of fact, [32] claimed that the best source of information in assessing the QOL is always the patient himself as studies revealed that the credibility relies on the treatments given and to the progress of the patient. Relatively, [4] defines QOL as an individual's perception of their position in life in the context of the culture and value systems in their living milieu and in relation to their concerns, expectations, goals, and standards. In the light of the emerging issues of PLWHA, QOL then becomes the evolving and encompassing measurement of health, more than the traditional morbidity and mortality.

Table 1 General Quality of Life and General Health of the participants

Statement	Very poor	Poor	Neither	Good	Very good	Md
B1 How would you rate your quality of life?	5 1.59%	41 13.02%	112 35.56%	125 39.68%	32 10.16%	3
Statement	Very dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied	
B2 How satisfied are you with your health?	6 1.90%	38 12.06%	105 33.33%	121 38.41%	45 14.29%	4

4.4. Physical health domain of WHOQOL-BREF of the participants

The physical health of the patients was also assessed using the WHOQOL-BREF questionnaire and the results were presented in Table 2. For the majority of the participants, they reported to experience only "a little" of that physical pain as preventing them from doing what they needed to do (43.17%), and 40.63 percent did not feel this at all. In furtherance, more than half of the patients did not at all need any medical treatment to function in their daily life although, there were still 6.35 percent who answered they needed it to an extreme amount. In terms of the middle value, the participants noted that physical pain prevents them from doing things "a little" (median of 2), and that they do not need at all medical treatment to function in their daily life (median of 1).

Moreover, majority of the participants mostly had enough energy for everyday life (39.05%), and answered "good" in the question on how well they were able to get around (30.16%). A median of 4 which corresponds to mostly was also observed in having energy for everyday life, while a median of 3 which means neither was observed in how well they were able to get around. In this consideration, median was used as the summary measure (measure of central tendency) instead of mean because the data in this stage (Likert scale) is an ordinal data (rankings). Most of them were satisfied with their sleep (43.17%), ability to perform your daily activities (40.95%), and capacity for work (38.73%). A median of 4 was also observed in these statements, which means satisfied.

A modelling data that suggest that young people in their 20s who are linked into care, who get hooked up with a provider, are prescribed antiretroviral thereapy, and take it regularly achieve virologic suppression than that those who had close to life expectancy as those their age who never catch HIV [55]. This data infers that the PLWHAs had relatively high overall QOL, across domains. This is relative to the timing of data collection, as it was done as the country has been transitioning to a more stabilized COVID-19 situation and has started to open the economy. In addition, this is the time when various local interventions have been done to provide differentiated service delivery to the client to assure continuity of services needed by the PLWHAs during this health crisis. In this aspect, in term of physical health, considering that Angeles City Primary HIV Care Clinic is a primary level of care facility, it is expected that they are handling clinically stable patients. Hence, the good rating in terms of physical domain of the Quality of Life among PLWHA was highly noted. Due to the limited movement, there was a good number account for the lockdowns and restrictions that are imposed relative to health protocols pertinent to this health crisis.

Table 2 Physical Health domain of WHOQOL-BREF of the participants

Statement	Not at all (1)	A little (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)	Md
B3 To what extent do you feel that physical pain prevents you from doing what you need to do?	128 40.63%	136 43.17%	39 12.38%	9 2.86%	3 0.95%	2
B4 How much do you need any medical treatment to function in your daily life?	164 52.06%	69 21.90%	46 14.60%	16 5.08%	20 6.35%	1
Statement	Not at all (1)	A little (2)	Moderately (3)	Mostly (4)	Completely (5)	
B10 Do you have enough energy for everyday life?	0 0.00%	12 3.81%	88 27.94%	123 39.05%	92 29.21%	4
Statement	Very poor (1)	Poor (2)	Neither (3)	Good (4)	Very good (5)	
B15 How well are you able to get around?	40 12.70%	79 25.08%	75 23.81%	95 30.16%	26 8.25%	3
Statement	Very dissatisfied (1)	Dissatisfied (2)	Neither (3)	Satisfied (4)	Very Satisfied (5)	
B16 How satisfied are you with your sleep	10 3.17%	38 12.06%	106 33.65%	136 43.17%	25 7.94%	4
B17 How satisfied are you with your ability to perform your daily living activities?	2 0.63%	22 6.98%	104 33.02%	129 40.95%	58 18.41%	4
B18 How satisfied are you with your capacity for work?	7 2.22%	30 9.52%	94 29.84%	122 38.73%	62 19.68%	4

4.5. Psychological domain of WHOQOL-BREF of the participants

Table 3 shows the responses of the participants in the psychological domain. Most of the patients enjoyed life and felt life is meaningful in a moderate amount (41.59%, and 33.02%, respectively). On the other hand, they were able to concentrate as indicated by their responses on "very much" accounting for 41.27 percent. In terms of median, a median of 3 was observed in how well they enjoy life (a moderate amount), and a median of 4 was observed in how they feel life to be meaningful and being able to concentrate (very much).

The biggest proportion of the respondents was able to accept their bodily appearance as indicated by 37.14 percent, and were satisfied with themselves (39.68%), with middle value of 4. Moreover, the results showed that seldom do they have negative feelings such as blue mood, despair, anxiety, depression as given by the 44.44 percent response, with a middle value of 2 (seldom).

Table 3 Psychological domain of WHOQOL-BREF of the participants

Statement	Not at all (1)	A little (2)	A moderate amount (3)	Very much (4)	An extreme amount (5)	Md
B5 How much do you enjoy life?	5 1.59%	70 22.22%	131 41.59%	70 22.22%	39 12.38%	3
B6 To what extent do you feel your life to be meaningful?	7 2.22%	42 13.33%	104 33.02%	75 23.81%	87 27.62%	4
B7 How well are you able to concentrate?	5 1.59%	33 10.48%	60 19.05%	130 41.27%	87 27.62%	4
Statement	Not at all	A little	Moderately	Mostly	Completely	
B11 Are you able to accept your bodily appearance?	2 0.63%	18 5.71%	80 25.40%	117 37.14%	98 31.11%	4
Statement	Very dissatisfied (1)	Dissatisfied (2)	Neither (3)	Satisfied (4)	Very Satisfied (5)	
B19 How satisfied are you with yourself?	6 1.90%	25 7.94%	98 31.11%	125 39.68%	61 19.37%	4
Statement	Never (1)	Seldom (2)	Quite often (3)	Very often (4)	Always (5)	
B26 How often do you have negative feelings such as blue mood, despair, anxiety, depression?	78 24.76%	140 44.44%	69 21.90%	18 5.71%	10 3.17%	2

4.6. Social relationships domain of WHOQOL-BREF of the participants

The social relationship domain responses of the patients were in Table 4. The largest percentage (38.73%) went to the satisfied in their personal relationship response. In terms of their sex life, those 47.30 percent of the respondents expressed satisfaction. Moreover, majority were very satisfied with the support of their friends as represented by 36.19 percent. All statements under social relationship domain have a median of 4, which corresponds to satisfied.

Table 4 Social relationships domain of WHOQOL-BREF of the participants

Statement	Very dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied	Md
B20 How satisfied are you with your personal relationships?	4 1.27%	11 3.49%	69 21.90%	122 38.73%	109 34.60%	4
B21 How satisfied are you with your sex life?	10 3.17%	28 8.89%	79 25.08%	149 47.30%	49 15.56%	4
B22 How satisfied are you with the support you get from your friends?	5 1.59%	19 6.03%	71 22.54%	106 33.65%	114 36.19%	4

Relatively, a study conducted in Liaoning Province presented that social domain was found to be the most important contributor to the QOL of PLWHA among those who contracted the disease via sexual contact. This can be attributed to

the social and sexual behaviors of the respondents prior to diagnosis. This study revealed that those with better social and sexual relations have better QOL. It also showed that as the psychological domain improved, the other domains and the general QoL also generally improved.

4.7. Environment domain

The responses on the domain on environment are presented in Table 5. Majority or 33.33 percent of the patients "very much" feel safe in their daily life and said that their physical environment is healthy. A median of 4, which means very much was also observed in these statements. Majority had reported that they moderately had enough money for their needs (32.38%), and had opportunity for leisure (37.78%). A median of 3 (moderately) was also seen in the results. Most of them, on the other hand, completely had available information they need in their daily life (38.73%), with a middle value of 4 which corresponds to mostly. The highest percentage went to satisfied with the condition of their place as given by the 35.37 percent, and very satisfied with their access to healthcare services (38.10%), and transport (31.11%). The median for these statements is 4, which means satisfied.

To note, on the aspect of environmental domain, financial constraint and access to health and services were the aspects needing more attention. Specifically, financial capability and available access to health and services equate to better QOL. This emphasized the need to prioritize social support and improve personal relationship for the clients, assuring non-discriminatory environment and marginalization as critical toward the social, physical, and financial well-being [33].

Table 5 Environment domain of WHOQOL-BREF of the participants

Statement	Not at all	A little	A moderate amount	Very much	An extreme amount	Md
B8 How safe do you feel in your daily life?	4 1.27%	39 12.38%	85 26.98%	105 33.33%	82 26.03%	4
B9 How healthy is your physical environment?	7 2.22%	35 11.11%	80 25.40%	105 33.33%	88 27.94%	4
Statement	Not at all	A little	Moderately	Mostly	Completely	
B12 Have you enough money to meet your needs?	13 4.13%	68 21.59%	102 32.38%	87 27.62%	45 14.29%	3
B13 How available to you is the information that you need in your daily-to-day life?	2 0.63%	20 6.35%	72 22.86%	99 31.43%	122 38.73%	4
B14 To what extent do you have the opportunity for leisure activities?	13 4.13%	44 13.97%	119 37.78%	83 26.35%	56 17.78%	3
Statement	Very dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied	
B23 How satisfied are you with the condition of your living place?	3 0.95 %	21 6.67%	68 21.59%	113 35.87 %	110 34.92%	4
B24 How satisfied are you with your access to health services?	10 3.17%	20 6.35%	73 23.17%	92 29.21%	120 38.10%	4
B25 How satisfied are you with your transport?	19 6.03%	36 11.43%	65 20.63%	97 30.79%	98 31.11%	4

There were no patients with low quality of life (QOL score of 45 and below). Around 95% of the patients have relatively high QOL (score of 65 above), while 5% have moderate QOL (score of 45 to 65).

4.8. WHOQOL-BREF mean (summed) scores by socio-demographic characteristics and test of differences

The mean scores of the WHOQOL-BREF across demographic variables. The overall mean score is 96.26 (maximum possible score=130), with an SD of 17.95. Males (Mn= 96.62) had higher QOL mean score than females (Mn= 91.05). Moreover, the age group with the highest QOL mean score was in those 30 to 34 years old (Mn= 99.27), while the lowest was in those 18 to 24 years old (Mn= 92.50). The single and married almost had the same QOL mean score (Mn= 96.50), while the divorced/separated had the lowest QOL score (Mn=51.00). In terms of educational attainment, the group with highest QOL mean scores were the college graduates (Mn=100.62), while the lowest were the below high school (Mn= 89.97). When occupation was considered, those in Business Process Outsourcing Sector (BPO) had the highest mean QOL score (Mn= 102.77), followed by those in other professional services (Mn= 102.44), and Education sector (Mn=101.71), while the unemployed/students had the lowest QOL mean score (Mn= 83.28). Those with monthly income of Php36,000 to Php45,000 had the highest QOL score (Mn=112.36), followed by those with income of Php26,000 to Php35,000 per month (Mn=104.32); the lowest QOL was the bracket of those with no income (Mn=83.45). Furthermore, homosexuals had the highest QOL (Mn= 98.87), while the asexual had the lowest QOL (Mn= 49.00).

When tested for the difference, educational attainment (p=0.0001), occupation (p=0.0001), monthly income (p=0.0001), and sexual orientation (p= 0.0079) had significant results. This means that among the variables under socio-demographic characteristics, there is a significant difference in the mean QOL score of the participants when grouped according only to their educational attainment, occupation, monthly income, and sexual orientation.

The above results indicated that the schooled or those deemed educated individuals did have more knowledge base to deal with daily challenges of life. They can more likely understand their disease, and so manage it better. Alongside, stress brought about by the occupation greatly affected the PLWHIVs QOL. As a result, having more and/or enough income is critical to have more capability to manage health, deal with the challenges of life, and improve QOL. On the other hand, the acceptability of certain sexual orientation may affect the QOL of PLHIVs. The considered more open approach to the LGBT community in Angeles City (or Philippines) might be contributory to improved QOL.

Moreover, in a study conducted in India to assess the Quality of life of PLWHA in relation to various socio-demographic and clinical correlates, it was shown that the Quality-of-Life scores for all domains were intermediate for the PLWHAs between 10 - 14. The mean scores were highest for psychological domain. Further, there came out a significant difference in QOL of PLWHA who were on ART and not on ART in some domains. PLWHAs who were literate, married, single, employed with income more than 1500 not on ART, CD4 count of more than 200, earlier stages of HIV, living with spouse and students, had high mean scores. Mean difference of QOL scores with duration of ART intake were statistically significant in psychological and Spirituality domains. QOL was found to be determined by education, income, occupation, ART status, duration of taking ART, and clinical categories of the disease cc

Furthermore, in a study conducted in India to assess the Quality of life of PLWHA in relation to various socio-demographic and clinical correlates, results showed that the Quality-of-Life scores for all domains were intermediate for the PLWHAs between 10 - 14. The mean scores were highest for psychological domain. Further, there came out a significant difference in QOL of PLWHA who were on ART and not on ART in some domains. PLWHAs who were literate, married, single, employed with income more than 1500 not on ART, CD4 count of more than 200, earlier stages of HIV, living with spouse and students, had high mean scores. Mean difference of QOL scores with duration of ART intake were statistically significant in psychological and Spirituality domains. QOL was found to be determined by education, income, occupation, ART status, duration of taking ART, and clinical categories of the disease [35].

4.9. Association of socio-demographic characteristics and clinical characteristics

The association of the socio-demographic characteristics to clinical characteristics was tested. There was an association between WHO clinical stage and sexual orientation (p= 0.004). In terms of BMI, marital status (p=0.013), occupation (p=0.036), and monthly income (p=0.001) were significant factors. For the presence of comorbidities, only the sexual orientation was the significant factor (p=0.010). Sex was a significant factor for the drug regimen (p=0.001), and marital status was a significant factor for the CD4 count (p= 0.005).

The data above were obtained by means of the test for normality, which revealed that the data were not normally-distributed so the tests used were non parametric tests. In addition, Wilcoxon rank sum test (non-parametric counterpart of T test) and Kruskal-Wallis Analysis of Variance (Nonparametric counterpart of one-way ANOVA) were used to obtain the above results.

In the same respect, depending on the level of activity brought about by work and lifestyle, BMI can be affected by varying factors. Those occupations with sedentary lifestyle can contribute to the high BMI. More so, the marital status,

occupation and income associate with BMI since the one who is married would manifest an income from his or her job. This would connote that a person has the purchasing power to provide himself or herself with the food that he craves which can contribute to weight gain.

The aim of the present study was to determine associations of overweight, obesity and abdominal obesity with marital status and educational level in Greek adults of both genders based on data from the National Epidemiological Survey on the prevalence of obesity. The overall prevalence of obesity was 22.3% (25.8% in men, 18.4% in women), that of overweight 35.2% (41.0% in men, 29.8% in women) and that of abdominal obesity 26.4% in men and 35.9% in women. The data also revealed that there is a higher risk of obesity was found in married men (OR: 2.28; 95% CI: 1.85-2.81) and married women (OR: 2.31; 95% CI: 1.73-3.10) than in the respective unmarried ones. Also, a higher risk of abdominal was found among married men (OR: 3.40; 95% CI: 2.86-4.03) and in married women (OR: 2.40; 95% CI 2.00-2.88) compared to unmarried ones. The risk for being obese was lower among educated women (primary school, OR: 0.76; 95% CI: 0.60-0.96, high school, OR: 0.58; 95% CI: 0.46-0.74 and University, OR: 0.64; 95% CI: 0.49-0.81) than among illiterates. No significant differences were found among men [56].

For the drug regimen, there are drug regimens that are not given to pregnant clients such as zidovudine due to congenital malformation and dolutegravir associated with neural tube defects. Hence, the association.

It can be inferred from the results that lifestyle related to certain sexual orientation might affect their clinical status. Higher clinical stage would mean more severe comorbidities. In the same manner, relationships and sexual activity in young workers because of the concern that there may be risk behaviors engaged in by these groups could lead to issues of public health significance, specifically the increased risk of transmission of sexually transmitted infections (STIs) such as HIV/AIDS. Since the last Young Adult Fertility and Sexuality Study conducted in 2002, there have been no other surveys to update our knowledge of sexual risk taking of today s youth.

4.10. Regression analysis on General Quality of Life

The final regression analysis for the general quality of life statement under the WHOQOL-BREF. Occupation, monthly income, sexual orientation, and CD4 count were the significant factors in the model. Compared with the healthcare sector, office and clerical sector had higher QOL score of 0.33, while sales sector had a 0.33 lower QOL score. In terms of income, all income brackets had higher QOL score compared with the base category, no income. Asexual sexual orientation had a lower QOL score compared with heterosexual, and those below normal CD4 count had higher QOL rate compared with those normal CD4 count.

In obtaining the above tests, this study has utilized Fisher's exact Test (nonparametric counterpart of Chi square test). This test was used instead of Chisquare Test because the data did not satisfy the assumptions of chi-square test data too sparse; cannot compute for Fisher's exact Test.

Moreover, Asexual clients do not have attraction to other people, hence might be single. No social relationship might negatively affect their general QOL. Those with normal CD4 are delayed of treatment until a confirmatory result is done. They are also not given prophylaxis medications for opportunistic infections, among other comprehensive services given to clients with below normal CD4.

With regard to these results, monthly income had been found to be strongly associated with the QoL of PLHIV [9 [10] [11]. Among other important significant determinants of QOL identified by multivariate analysis is age [12] which may be attributable to a higher CD4 T cell count that is expected of younger person due to a better thymic function among people in the younger age group [6].

4.11. Regression analysis on General Health

The final regression model of the general health of the participants. Occupation, monthly income, WHO clinical stage, drug regimen, and viral load were the variables that affected the general health. Compared with the healthcare sector, food preparation and service sector, as well as the unemployed/students had lower general health rate. For the monthly income, those with income of Php15,000 and below had lower general health rate than those with no income by 0.35. Those in the stage 4 WHO clinical stage also had lower general health rate compared with the stage 1 by 1.07. Moreover, those who took 3TC/TDF/DTG, and 3TC/TDF/EFV had lower general health rate compared with those who take 3TC/ABC/EFV by 0.73 and 0.38, respectively. On the other hand, those with undetectable viral load had 0.33 higher general health rate compared to those with high viral load.

On a similar aspect, a study in Dhaka with 84 PLWHA, it was found out that asymptomatic respondents enjoyed better QOL in the domain of physical and level independence and had better perception regarding QOL and general health than the respondents of symptomatic and AIDS converted. This reflected the grievous nature of this disease affecting various aspects of patients' QOL [30].

In consonance, another study was conducted by [57] which yielded a positive correlation was seen as patients with higher CD4 count had better QOL than those with lower CD4 counts. The study revealed a strong relationship between QOL and CD4 count of HIV/AIDS patients.

In effect, this study has made a comparison with the reference category, since the factor variables are categorical variables. A good example to this is the office and clerical sector has higher QOL score of 0.33 compared to the health sector. Furthermore, in this context, 3TC/ TDF/ DTG and 3TC/TDF/EFV were considered as the first line drugs. 3TC/ABC/EFV is given when the client has either kidney problem and/or resistant to tenofovir or other non-nucleoside reverse transcriptase inhibitors (NNRTIs). Another aspect is that the attributed decrease in QOL over the base might be due to the length of treatment of these clients, as they are more likely to just be starting treatment, and so are still adjusting.

4.12. Regression analysis on Physical health domain

For the physical health domain, the regression analysis. Occupation, monthly income, and drug regimen were the significant factors. The unemployed/students had lower physical health rate compared to the healthcare sector whose income was at Php 15,000 and below had a lower physical health QOL than those with no income, while those with income of Php 26,000 to Php 35,000 and Php 36,000 to Php 45,000 had higher physical health QOL compared to those with no income. It is of interest how those with an income of Php 15,000 and below had lower quality of life compared to no income. It is surmisable that as people have income, both anticipated and circumstantial meet expenses could come which may affect the finances of an individual. Those without income have relatively less stress in allocating funds for the anticipated and circumstantial expenses. This data would imply that those with jobs and therefore have income can afford to buy those that can make them feel physically better as compared to those without the buying power. Furthermore, those who take 3TC/TDF/DTG, and 3TC/TDF/EFV have lower physical health rate compared with those who take 3TC/ABC/EFV. Corollary to this, the drug regimen 3TC/ TDF/ DTG and 3TC/TDF/EFV is the first line drugs. This is given when the client has either kidney problem and/or resistant to tenofovir or other non-nucleoside reverse transcriptase inhibitors (NNRTIs). The decrease in QOL over the base could be attributable to the length of treatment of these clients. As they are starting with the treatment, there might be side effects that they are dealing with and they may have apprehensions on the further effects of the drugs on the succeeding cycles, their quality of life may be affected.

The physical domain includes seven questions about activities of daily living, dependence on medical substance and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity. In retrospect, [29] noted in the study with PLWHA in Taizhou a low QOL score in the physical and psychological domains. Particularly, the aspects of sleep and rest, energy and fatigue, and pain and discomfort were the ones with the lowest transmuted scores. Results revealed that those in younger age group, males, and with work are the ones with better QOL and with better results for physical and psychological domains. There was also noted significant difference in the environmental domain where homosexual males having the highest. This can be attributed to the organized groups and support systems for this type of key population and their noted capability to adapt to changes. Furthermore, Liping noted that those with higher educational level had better scores in physical and environmental domains, pointing out that level of awareness affects level of security and adaptability.

4.13. Regression analysis on Psychological domain

The psychological domain was also analyzed using regression analysis. In this domain, marital status, educational attainment, monthly income, and drug regimen were the significant factors. Those divorced/separated had 8.81 lower psychological QOL compared to those single. The high school graduates had higher psychological QOL compared with those below high school. Moreover, those with monthly income of Php15,000 and above had higher psychological QOL compared to those with no income. Finally, those who take 3TC/TDF/DTG, and 3TC/TDF/EFV had lower psychological QOL rate compared with those who took 3TC/ABC/EFV.

The Psychological Domain consists of 6 questions about bodily image and appearance; negative feelings; positive feelings; self-esteem; spirituality/ religion/ personal beliefs; and thinking, learning, memory, and concentration.

4.14. Regression analysis on Social relationship domain

The social relationship domain was tested for regression analysis. Marital status, educational attainment, monthly income, sexual orientation, and drug regimen were the variables that affected social relationship. Divorced/separated patients had lower social relationship compared with single patients. High school graduates had higher social relationship QOL compared with those below high school. Those with monthly income of Php16,000 to Php 45,000 also have higher social relationship QOL compared to those with no income. Moreover, those asexual had lower social relationship QOL compared with the heterosexual, and those with drug regimen 3TC/TDF/DTG and 3TC/TDF/EFV had lower social relationship QOL compared with drug regimen 3TC/ABC/EFV.

The Social Relationship Domain comprises three questions about personal relationships, social support, and sexual activity. Under these circumstances, the studies conducted by [33] manifested that the social domain was the domain most affected in the QOL. Aspects on personal relationship and social support yielded the lowest transmuted score and with the significant difference to the general QOL. This showed that the better personal and social relationships the patient has, the better the QOL. On the aspect of environmental domain, financial constraint and access to health and services were the aspects needing more attention. To cite particularly that financial capability and available access to health and services equate to better QOL. This would mean that there is a need to prioritize social support and improve personal relationship for the clients, assuring non-discriminatory environment and marginalization as critical toward the social, physical, and financial well-being.

4.15. Regression analysis on Environment domain

The last domain, environment, was also assessed. The final regression model for this domain. Marital status, educational attainment, occupation, monthly income, sexual orientation, drug regimen, and CD4 count had significant effect on the environment domain. Those divorced/separated have 14.17 lower environment QOL than those who were single. Moreover, those in sales and were unemployed have lower environment QOL compared with those in healthcare sector, and those with income Php15,000 and below had lower environment QOL compared with those no income.

These results also show that asexual patients also had lower environment QOL than heterosexual. On the other hand, high school graduates had higher environment QOL compared with those below high school, and those with income of Php26,000 to Php35,000 and income of Php36,000 to Php45,000 had higher environment QOL compared with no income. Those with drug regimen 3TC/AZT/EFV and 3TC/AZT/NVP had higher QOL compared with those who take 3TC/ABC/EFV, and those below normal CD4 count had higher QOL compared to those with normal CD4 count.

The environmental domain of quality of life, which includes aspects such as financial resources, physical safety, accessibility to health and social care, home environment, opportunities for acquiring skills, participation in leisure activities, pollution, and transport. The study suggests that students and unemployed individuals may have lower stress levels compared to those who earn low incomes but have occupations. The article also highlights the limited support services for those who are employed compared to indigent clients. The study finds that patients with normal CD4 counts are delayed in treatment and are not provided prophylaxis medications for opportunistic infections, unlike those with below-normal CD4 counts. The study also suggests that those taking older drugs such as 3TC/AZT/NVP may have a greater possibility of improved quality of life due to longer duration of drug intake.

The studies conducted by [33] emphasized that financial capability and access to health and services were crucial factors in improving quality of life in the environmental domain. It was highlighted that social support and non-discriminatory environments were also critical towards social, physical, and financial well-being. Moreover, the duration of treatment was found to be a critical factor as prolonged treatment duration led to a decreasing trend in transmuted scores in psychological and environmental domains due to "pill/treatment fatigue." The strongest determinants of QOL were positive self-imaging, self-esteem, and psycho-social aspects of life, including religion and beliefs.

4.16. Regression analysis on QOL

Lastly, the QOL score was computed and the regression analysis. In the total QOL score, marital status, occupation, monthly income, sexual orientation, and drug regimen were the significant variables. Those divorced/separated have lower QOL score than those single. Unemployed/students have lower QOL than those in the healthcare sector. Those who have asexual orientation have lower QOL score than heterosexual. Moreover, those who take 3TC/TDF/DTG and 3TC/TDF/EFV have lower QOL than those who take 3TC/ABC/EFV. On the other hand, those with monthly income of Php16,000 to Php45,000 have higher QOL than those with no income.

Consequently, marital status of being divorced and separated may bring about issues and relational complications which may affect the quality of life of an individual as compared to being single which gives one the leverage to enjoy life without being bound by the limits set by a partner. When one has asexual orientation, he or she is neither attracted to male nor female and therefore his or her relational sphere may be nil. This phenomenon of low quality of life can be akin to individuals who are asexual.

In this connection, the 3TC/ TDF/ DTG and 3TC/TDF/EFV are the first line drugs. 3TC/ABC/EFV is given when the client has either kidney problem and/or resistant to tenofovir or other non-nucleoside reverse transcriptase inhibitors (NNRTIs). The decline in QOL against the base might be due to the length of treatment of the patients, as they are more likely to just be starting treatment, and so are still adjusting.

4.17. What policy brief can be developed to improve the quality of life of the PLWHAs through the differentiated service delivery?

Determining the factors associated to the quality of life of people living with HIV/AIDS during pandemic can propel the Department of Health to execute innovative policies for a differentiated services delivery. AIDS epidemicc remains to be a growing epidemic at 98% of new infections. Decrease in the number of being diagnosed reflecting a decrease in update, number of people accessing testing. Decrease of around half of the follow up treat met. Delivery lockdown and quarantine experiencing challenges. [40]

A 7-Point Agenda emerged as a possible content of the policy brief on differentiated service delivery (DSD) that can be developed based on the results of this study. With the goal of improving the quality of life of PLWHA, in general, a program design and cascade services specific to certain socio-demographic variables and clinical variables are given a considerable attention. Socio-demographic variables such as occupation, monthly income, sexual orientation, marital status, and educational attainment and clinical variables like WHO Clinical Stage, CD4 Count, Viral Load, and Drug Regimen are the focused areas .Consequently, the following agenda particularly came out : 1) creation of guidelines in the financial and employment assistance program for clients on anti-retroviral therapy, as included in the cascade of services, 2) establishment of standards in the involvement of patient support groups (PSGs) in the provision of cascade of services for PLHWAs, 3) penetration of key industries and/or population for HIV prevention and control, 4) creation of population specific communication materials for PLWHAs on ART, 5) establishment of standards in the recognition of community-based organizations as service facilities offering anti-retroviral therapy, 6) case management as a program strategy to assure adherence and cascade service continuity, and 7) establishment of contact centers (telemedicine mechanism) are the 7 points that surfaced during the FGD.

Primarily, the guidelines pertaining to the financial and employment aspects shall include inter-agency collaboration for the referral network and harmonization of support services. This shall also include awareness, assessment, and referral of cases related to financial management and employment. Secondly, in regard to standards for the involvement of patient support groups (PSGs), in the provision of cascade of services for PLHWAs this shall recognize patient support groups as health service providers. Particularly, this could mean setting minimum requirements for qualifications, employment process/ funding mechanisms, capacity building, on-boarding, service demarcations, and coaching and mentoring. In addition, there must be an inclusion of safeguards for both the service provider and the clients. To note, the following inclusions in the specific activities for PSGs revolve around : a)learning group session, b) kamustahan, and family counseling, d) PLWHA summits were pointed out by the FGD participants.

Thirdly, with the provision on penetration of key individuals and agencies for the prevention and control of HIV, there came out a need to design awareness and specific HIV Prevention and control program interventions for the following key population and related industries. These industries which include the BPO, health sector, unemployed/student, and office and clerical sectors are the targeted group. The fourth agendum indicates the creation of a communication plan and related information, education, and communication materials for PLWHAs on antiretroviral therapy (ART) considering the following variables: occupation, monthly income, sexual orientation, marital status, and educational attainment.

As regards the sixth point raised during the FGD, on the establishment of standards in the recognition of community-based organizations (CBO) as service facilities offering anti-retroviral therapy, it was noted that it is imperative for the policy to be crafted to include levels of facilities and services, regulations, and operational guide for the CBO to function as an HIV Treatment Facility. Community Center, NGO and civil society -run initiatives are at present offering anti-retroviral therapy to patients. However, there is no standard certification nor a regulatory mechanism which the Regulatory and Licensing and Enforcement Division (RLED) of the Department of Health (DOH) grants. The existing process necessitates that a written permission be sought from the central office, for it to issue a Department

Memorandum on the establishment of HIV treatment. However, the process involves a turnaround cycle of every six months. It was pointed out that decentralization of the said regular certification from the region to expedite the process can be an option.

[26] adopted on the idea that international initiatives and government interventions should be well designed and placed in a socio-demo-graphic context in order to address the target groups. In addition, health facilities represent a key point of contact with people with HIV who are unaware of their status and who would benefit from HIV-specific services. Interestingly, the study came out with a suggestion that there should be a written policy and a formalized check system to make HIV screening and open disclosure of HIV/AIDS status mandatory prior to marriages.

The proposed transition from "DSD 1.0" to "DSD 2.0" recognizes the success of HIV programs in providing patient-centered programs for chronic HIV care and pushes them to do more to provide a comprehensive and integrated package of high-quality health services to their patients. It also challenges the UHC response, largely centered around provision of quality primary health care (PHC), to learn from and assist in the provision of broader care to those living with HIV. The costs and benefits of this comprehensive approach need to continue to be tested with modeling and empirical studies, including those cited in a recently published research agenda, but its strength is that it recognizes that the needs of PLHIV will change over time and are not limited to HIV care alone.

Relative to case management as a program strategy to assure adherence and cascade service continuity, the hiring of case managers underlies this suggested provision in the policy. This means hiring of case managers, developing case management standards in terms of patient load, enrollment, and monitoring protocols. At present, in the context of WHO on task sharing and task shifting, case managers are project supported by projects and the global Fund. The Department of Health has no policy for the hiring of personnel for HIV case management neither is there a provision in the policy on hiring and plantilla needed for case managers.

Finally, this is to include standards related to the online service delivery, particularly in the aspects of capacity building, operations, and regulations/monitoring. Teleconsults, online prescriptions, laboratory requests, helpline/hotlines, among others were suggested to be important elements on this aspect.

[37] put it, the implementation of Differentiated Service Delivery (DSD) models varies according to the preference of the patient, complexity of logistics involved in the model adoption and maintenance, the human resource and pharmacy supply chain needs, and the cost. However, few studies to date have evaluated comparative implementation or cost-effectiveness from a health systems perspective . This study has yielded vital pieces of information for the differentiated service delivery that can be given to PLWHA.

At its core, differentiated service delivery (DSD) for HIV is geared toward clients' needs and expectations and relieving unnecessary burdens on the health system . In the 2016 World Health Organization antiretroviral therapy (ART) guidelines, it was acknowledged that adaptations to the delivery of HIV services were necessary to achieve the "treat all" recommendation. This transition from a "one-size-fits-all approach" to DSD means modifying the location, frequency and package of services as well as the cadre providing services, considering the clinical needs, specific population and the context including urbanicity, stability of context (for example high migration, conflict or pandemic) and type of HIV epidemic. Existing global and national policies around DSD for HIV can be leveraged during the COVID-19 pandemic to play a critical role in supporting uninterrupted ART and reducing avoidable contact with health facilities, thereby supporting health systems to focus on COVID-19. Recent statements from The Global Fund for HIV, Tuberculosis and Malaria (Global Fund), the Global Network of People Living with HIV (GNP+), UNAIDS, the United States President's Emergency Plan for AIDS Relief (PEPFAR) and the WHO all endorse leveraging components of DSD for people living with HIV (PLHIV) during the COVID-19 pandemic. The time is now to accelerate access to DSD for all PLHIV [38].

DSD 2.0 provides an opportunity for the HIV and Universal Health Coverage agenda which can seem to be at odds to achieve greater collective impact for patients and health systems by integrating strong vertical HIV, tuberculosis and family planning programs, and relatively weaker noncommunicable disease programs. Increasing coordination of care for PLWHA will increase the likelihood of achieving and sustaining UNAIDS' goals of retention on antiretroviral therapy and viral suppression. Eventually, this shift to DSD 2.0 for PLHIV could evolve to a more person-centered vision of chronic care services that would also serve the general population [39].

This policy brief is in line with WHO's 2016 HIV guidelines in providing a template for DSD 2.0. The guidelines emphasized the importance of integrating ART services with the most common vertical programs that require repeated follow-up: TB prevention and treatment, FP, and chronic NCDs.4 A majority of adults with HIV will require longitudinal care for such non-HIV services. All PLWHA are eligible for a course of TB preventive therapy (TPT) and between 5%

and 10% will develop TB at some point in their lifetimes. The unmet need for contraception among women on ART is well-documented, approaching 50% in some settings. Chronic NCDs such as diabetes, hypertension, and mental health disorders are also a major issue. Among adults on ART in South Africa, more than 15% have hypertension, more than 5% have diabetes, and, as a recent review emphasized, there is a real risk that poor quality of care for such NCDs may undermine the investments made to strengthen HIV programs.

The more PLHIV's touch points are coordinated with the health system, the more likely the goals of retention and viral suppression can be achieved and sustained. In parallel, this evolution provides a tangible path for integration between heretofore strong vertical HIV programs, other vertical programs such as TB and FP, and relatively weaker programs for PHC addressing chronic NCDs. In the future, this shift to DSD 2.0 for PLHIV could evolve to a more person-centered vision of chronic care services and universal health care for all—a to-be-defined future state that is paid for through a combination of national health insurance schemes and donor funding.

If a health system can provide hypertension drugs and ART in a manner that decreases the need for frequent health facility visits—for example, by providing multi-month refills and/or offering refills at private pharmacies—a next step would be to provide that service for someone whose needs are limited to treatment for hypertension. In this way, the health systems that underlie both UHC and HIV will be strengthened by building the capacity to support multiple patient needs simultaneously rather than prioritizing historically vertical programs [39].

5. Conclusion

The study aimed to explore the association between socio-demographic and clinical characteristics with the quality of life of people living with HIV and AIDS during disruptive times. The findings revealed that there is much to be done in meeting UNAIDS 95-95-95 target of ending the HIV epidemic, and a differentiated service delivery approach is needed to meet the diverse needs and expectations of all PLWHA. The study provided an understanding of the patient and can lead to a more directed way of meeting the target. The study showed that socio-demographic characteristics such as occupation, monthly income, sexual orientation, marital status, and educational attainment, and clinical variables like WHO Clinical Stage, CD4 Count, Viral Load, and Drug Regimen affect the quality of life of PLWHA. Based on the findings, a 7-Point Agenda was developed to improve the quality of life of PLWHA through program design and cascade services specific to certain socio-demographic variables and clinical variables. The study contextualized the present health crisis and crafted a data-informed policy on differentiated service delivery.

The study contributes to the body of knowledge by providing a clear understanding of the quality of life of PLWHA during a health emergency and a better delivery of service to PLWHA. The researcher recommends that the Department of Health provides services according to the particular treatment needs of PLWHA through case managers and counselors, adopt policies that respond to the needs of PLWHA during healthcare emergencies in a differentiated service delivery approach, and facilitate the development of a policy rooted in the circumstances of PLWHA patients with local policy-makers. For further studies, a larger sample can be taken to see how the country is faring in terms of meeting the needs of PLWHA, examine the transferability or adoption of the policy to other settings, explore other variables that may have an association with QoL, and conduct a study centered on DSD to measure its utilization in the Philippine setting. Additionally, the study can be expanded to include HIV treatment facility, rural setting, and perspectives from healthcare workers and health systems assessment.

Compliance with ethical standards

Statement of informed consent

Informed Consent was sought from all the respondents.

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Authors short biography

Dr. Joseph Michael D. Manlutac, PhD, MPH, RN, FRIN, FRSPH is a consistent academic achiever graduating High School as Valedictorian at St. Mary's Academy of Guagua, Pampanga. He is a graduate of a Bachelor of Science in Nursing (Magna Cum Laude) and a Master's in Public Health at the Angeles University Foundation. He also obtained his Doctor of Philosophy in Development Administration major in Public Governance at Philippine Christian University in 2022. Currently, he is the Program Manager at the Department of Health-Central Luzon Center for Health Development for various infectious diseases and the head of the Research Development Unit.