Impact Of Education And Marital Status On Quality Of Life Of HIV-Infected And Non-HIV Individuals

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Abstract - **Background:** Education, marital status, and Quality of Life (QOL) are significant aspects of life, particularly in the context of HIV. Evidence shows that behavioural factors that are highly likely to put an individual at risk of HIV are strongly associated with unawareness about HIV infection. This study examines how education and marital status influence the quality of life among asymptomatic HIV-infected and non-HIV individuals. **Methods:** The study involved 100 male participants aged 18–45 years from Kishanganj and Patna, including 50 HIV-infected individuals and 50 non-HIV individuals. All participants had at least primary-level education. Data was collected using the Client Interview Schedule (CIS) and World Health Organization Quality of Life-BRIEF (WHOQOL BREF), which assesses physical health, psychological, social relationships, and environment domains. Statistical analyses employed the t-test and the Chi-square (χ^2) test. **Results & Discussion:** The results revealed significant differences between two groups in education, marital status, and the psychological and social relationship domains of the Quality-of-Life scale. The findings indicate that individuals with lower levels of education often have underdeveloped ethical and social value systems. They may face difficulties in decision-making, fail to pay regard marital relationships, and frequently engage in extramarital affairs. Their unprotected sexual behaviour, or opportunistic relationships may increase susceptibility to HIV infection. **Conclusion:** These findings emphasize the need for targeted psychological, social, and educational interventions for HIV-infected individuals. The success of HIV awareness campaigns in raising public knowledge demonstrates how focused efforts can drive positive changes. Similarly, educational initiatives that foster ethical and social values can help reduce risky behaviour, prevent HIV transmission, and improve overall well-being.

Index Terms - Education, Marital Status, Quality of Life, HIV-Infected individual, Non-HIV Individuals.

I. INTRODUCTION

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) have posed significant global public health challenges for over three decades. As of 2023, approximately 39.9 million people worldwide were living with HIV, with 1.3 million new infections and 630,000 AIDS-related deaths reported [1]. In India, the adult HIV prevalence rate was estimated at 0.22% in 2019, with a notable regional burden in states like Bihar. According to NACO [2], Bihar ranks third nationally for new HIV infections. The epidemic's persistence underscores the urgent need for effective, multidimensional interventions, particularly in regions with high transmission rates and systemic barriers to healthcare.

HIV infection affects people across various dimensions, including sexual, financial, physical, and psychological aspects. Quality of life (QOL) can be significantly impacted by the disease in these areas. Factors such as age, educational level and marital status influence the extent of its impact [3]. Behavioural mode (sexual intercourse) of transmission is known as the major root of transmission accounting for 46.5% of HIV cases. Considering this fact, the integration of information and communication technology is crucial to improving prevention efforts and promoting positive behavioural changes [4].

QOL is a critical determinant of health, particularly for HIV infected individuals. Several factors, including education and marital status, play significant roles in shaping health behaviour and overall well-being. Education is widely acknowledged as a transformative factor that influences health outcomes. It enhances health literacy, promotes informed decision-making, and reduces the stigma associated with chronic illnesses like HIV. Education empowers individuals to adhere to treatment protocols, engage in safer behaviour, and access healthcare services, improving their overall quality of life [5]. For instance, studies have shown that higher levels of education are associated with reduced engagement in high-risk behaviour, such as unprotected sex with multiple partners, which contribute to the spread of HIV [6].

Marital status is also crucial in determining health outcomes, acting both as a protective factor and as a risk factor, particularly in the context of HIV. The marriage system in India controls freedom of sexual affairs and provides emotional bonding which helps in reducing high risk behaviour. Similarly, Cowdery and Pesa [7] emphasized that demographic factors, including marital status and educational attainment, contribute to variations in health-related QOL outcomes, particularly among women living with HIV.

This study explores the impact of education and marital status on the QOL of HIV-infected individuals compared to non-HIV individuals. By assessing QOL across the domains of physical health, psychological well-being, social relationships, and the over-all environment, the research seeks to identify key disparities and highlight the role of these factors in influencing health outcomes. The study findings may contribute to a deeper understanding of how education and marital support systems can improve the QOL of individuals living with HIV and how prevalence of HIV can be limited in sexually active populations, to enhance the well-being of the society.

II. STATEMENT OF THE PROBLEM

Aim: The aim of the present research is to assess the impact of education and marital status on the quality of life (QOL) of HIV-infected individuals compare to non-HIV individuals.

Objectives

1. To assess and compare the impact of education on the quality of life of HIV-infected and non-HIV individuals
2. To assess and compare the impact of marital status on the quality of life of HIV-infected and non-HIV individuals.
3. To compare the responses of HIV-infected and non-HIV individuals on the WHO- Quality of Life Scale-BRIEF (WHOQOL BREF), focusing on the physical health, psychological, social relationships, and environment domains of QOL.

Methodology

To achieve above mentioned objectives, an appropriate methodology was carefully planned and followed meticulously.

Study Design

The study adopts a comparative research design to explore the relationship between education, marital status, and all domains of quality of life, comparing HIV-infected and non-HIV individuals.

Study Sample and Location

A purposive sampling method was used to select 100 male participants aged 18–45 years from Integrated Counselling & Testing Centers (ICTC) in the Kishanganj and Patna districts of Bihar. The sample included 50 HIV-infected individuals and 50 healthy non-HIV individuals, all of whom had at least a primary-level education. Data collection took place at the Integrated Counselling and Testing Centers (ICTCs) in Kishanganj and Patna, Bihar.

Inclusion Criteria

1. HIV-infected individuals (Experimental group)
2. Healthy non-HIV individuals without a history of sexually transmitted infections (STI) (Control group)

Data Collection Tools

1. **Client Interview Schedule (CIS):** A self-prepared Client Interview Schedule (CIS) was used to collect socio-demographic details, including education level, marital status, and risk-taking behaviour related to unsafe sexual practices, from participants in both groups.
2. **WHO-Quality of Life-BREF (QOL):** The WHOQOL-BREF was employed to assess the subjects' present life conditions, with responses based on their experiences over the past two weeks. The QOL scale is a comprehensive, multidimensional measurement tool reflecting personal priorities, goals, mental health, and functional status. This self-administered screening test identifies multidimensional patterns and subjective experiences through 26 items. The scale comprises four domains:

Domains and Facets of QOL

The World Health Organization [8] defines QoL 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." The WHO identifies key domains and facets of QOL that are particularly relevant for individuals living with HIV. QOL reflects the holistic impact of the disease, encompassing physical, psychological, social, and environmental dimensions [9]. These domains and their respective facets are outlined in Table 1:

Table 1: Overview Of Domain Structure

Domains	Facets incorporated within Domains	Items No.
Physical Health (Domain 1)	Activities of daily living, dependence on medication, energy, mobility, pain, sleep, rest and work capacity	03, 04, 10, 15, 16, 17, 18
Psychological (Domain 2)	Bodily image, negative/positive feelings, self-esteem, spirituality, thinking, learning, and memory	05, 06, 07, 11, 19, 26
Social Relationships (Domain 3)	Personal relationships, social support, and sexual activity	20, 21, 22
Environment (Domain 4)	Financial resources, safety, health care, home environment, recreation, and transport	08, 09, 12, 13, 14, 23, 24, 25

Procedure

To examine the differences between the HIV-infected and non-HIV individual groups, written consent was obtained from each selected participant who attended an ICTC setup for counselling and testing purposes. Relevant data were collected using the Client Interview Schedule (CIS) and the WHOQOL-BREF.

Statistical Analysis

Statistical analysis of obtained scores were processed by using the t-test for comparing means of QOL domains and Chi-square (χ^2) test to compare percentages in terms of education levels and marital statuses of HIV-infected and non-HIV individuals.

III. RESULTS AND DISCUSSION

Education and Quality of Life

Education serves as a foundation for knowledge and human development. It enhances linguistic and abstract abilities, facilitating an individual's socialization, which influences a person's thoughts, behaviour, and personality. To explore the relationship between education and quality of life, education levels were categorized as up to primary, middle to intermediate, graduate, and postgraduate. The table given below compares the education levels of HIV-infected and non-HIV individuals.

Table 2: Comparison of Education between HIV-infected and Non-HIV Individuals

Education Level	HIV-infected individuals (N=50)	Non-HIV individuals (N=50)	χ^2	df	p
Up to Primary	18 (36%)	0 (0%)	41.92*	3	0.00
Middle to Intermediate	30 (60%)	22 (44%)			
Graduate	2 (4%)	21 (42%)			
Post-graduate	0 (0%)	7 (14%)			

*$p < 0.01$

Table 2 highlights a significant link in education and quality of life between the two groups. Among HIV infected individuals, 96% had only primary or intermediate level education, with 4% completing graduation and none pursuing postgraduate studies. In contrast, non-HIV individuals had higher educational attainment, with 56% being graduates and post-graduates. The Chi square value ($\chi^2 = 41.92$, $p < 0.01$) underscores a significant difference, indicating that lower education levels may reduce quality of life and increase HIV vulnerability.

Researches support these findings, showing higher education correlates with better HIV awareness, safer sexual practices, and greater prevention program engagement [10, 11, 12]. Lower education levels are linked to high-risk behaviours, such as unsafe sex, due to limited health information [13, 14]. Lack of education often correlates with unsafe sexual practices, poor adherence to medical protocols, and limited access to healthcare

[15]. Additionally, education reduces stigma and promotes preventive behaviours, while lower education fosters misinformation and risk-taking [16, 17, 18].

Marital Status and Quality of Life

Societal norms often consider marriage as a factor that leads to responsible and healthy sexual behaviour. To examine the effect of marital status on Quality of Life, three types of marital statuses—married, unmarried, and widowed— subjects were included in this study. The following table compares the marital status of HIV-infected and non-HIV individuals.

Table 3: Comparison of Marital Status between HIV-infected and Non-HIV Individuals

Marital Status	HIV-infected individuals (N=50)	Non-HIV individuals (N=50)	χ^2	df	*p*
Married	34 (68%)	33 (66%)	07.83*	2	0.02
Unmarried	10 (20%)	17 (34%)			
Widower	06 (12%)	-			

*p < 0.05

Table 3 shows a significant difference in marital status of two groups. Among HIV-infected individuals, 68% were married, 20% unmarried, and 12% widowers, compared to 66% married and 34% unmarried among non-HIV individuals, with no widowers. The Chi-square value ($\chi^2 = 7.83$, $p < 0.05$) highlights a notable difference.
A higher proportion of married HIV-infected individuals suggests links to factors like extramarital relationships and a desire for multiple partners, which may reduce quality of life and increase HIV vulnerability. Smith et al. [19] highlight that marital instability and extramarital behaviour significantly contribute to HIV spread, particularly in settings where stigma and limited awareness hinder prevention efforts. These behaviours not only heighten HIV risk but also negatively impact mental health and overall quality of life, aligning with the patterns observed in this study.

Impact of Education and Marital Status on QOL Domains

Physical Health (Domain 01): The results and discussion on physical health domain of quality of life is presented below:

Table 4: **Comparison of Physical Health between HIV-infected and Non-HIV Individuals**

Group	Mean ± SD	t	df	p-value
HIV-infected individuals HIV (N=50)	22.78 ± 4.60	0.65	98	NS
Non-HIV individuals (N=50)	23.28 ± 4.00			

NS=non-significant

Table 4 reveals a non-significant difference in physical health quality-of-life between HIV-infected and non-HIV individuals. The mean score for HIV-infected individuals was 22.78 ± 4.60, whereas the mean score for non-HIV individuals was 23.28 ± 4.00. The t-value was 0.65, and the difference between the two mean scores was 0.50. This result suggests that physical health remains relatively stable, particularly during the asymptomatic phage or early stage of HIV infection. This finding aligns with previous research [20] which indicates that asymptomatic HIV patients typically report fewer physical health issues in the initial phase of the infection.

Psychological Well-being (Domain 2): The results and discussion on psychological domain of quality of life is presented below:

Table 5: **Comparison of Psychological Well-being between HIV-infected and Non-HIV Individuals**

Group	Mean ± SD	t	df	p-value
HIV-infected Individuals (N=50)	18.06 ± 3.56	1.19*	98	0.00
Non-HIV individuals (N=50)	19.28 ± 6.30			

*P < 0.01

Table 5 shows statistically significant differences in psychological QOL between the two groups in which HIV-infected individuals exhibited notable lower scores (18.06±3.56) compared to non-HIV individuals (19.28 ± 6.30), with a t-value of 1.19 ($p < 0.01$) and a mean disparity of 01.22 indicating a decline in psychological well-being, likely due to the emotional and mental stress associated with the HIV diagnosis.

These findings are consistent with Snyder et al. [21], who emphasized the psychological burden associated with HIV diagnosis. Upon diagnosis, individuals often experience psychological shock, including fear of disease progression to AIDS, which is commonly perceived as fatal. This uncertainty regarding survival can lead to both psychological and physical deterioration. Moskowitz et al. [22] note that individuals with HIV face unique psychological challenges such as stigma, fear of disease progression, and future uncertainty, which profoundly affect their mental health and quality of life. Moreover, HIV-related stigma—associated with feelings of shame, anxiety, and depression—has been shown to significantly diminish psychological quality of life [23]. In contrast, non-HIV individuals generally report better QoL scores due to fewer health-related challenges and more robust support networks [24].

Social Relationships (Domain 3): The results and discussion on social relationships domain of quality of life is presented below:

Table 6: **Comparison of Social Relationships between HIV-infected and Non-HIV Individuals**

Group	Mean ± SD	t	df	p-value
HIV-infected Individuals (N=50)	10.02 ± 2.94	1.89*	98	0.00
Non-HIV individuals (N=50)	10.94 ± 1.75			

*P < 0.01

Table 6 presents statistically significant differences in social relationships domain of QOL between the two groups. The scores were notably lower in HIV-infected individuals (10.02± 2.94) compared to non-HIV individuals (10.94±1.75, with a t-value of 1.89 ($p < 0.01$) and a mean disparity of 0.92, indicating a considerable impairment.

The reduction in social relationships may be attributed to the emotional stress, stigma, and fear of social rejection that often follow an HIV diagnosis. Upon receiving the diagnosis, individuals may begin to distance themselves from family and society. This behaviour, often triggered by the shock of the diagnosis, leads to self-isolation. Over time, others begin to notice these changes, and when it is later revealed that the person is HIV-positive, fear causes further distancing due to the stigma and discrimination associated with the disease. Charles et al. [25] found that social relationships were most significantly impacted in their study of people living with HIV. Study findings is also supported by Mishra et al. [26], regarding the stigma faced by HIV-infected individuals, especially in Indian society. Cultural and social challenges exacerbate issues of social exclusion, leading to increased depression and suicidal ideation. Global research supports this, indicating that the lack of social support and exclusion from family and community networks significantly reduces the quality of life for individuals living with HIV [27].

Environment (Domain 4): The result and discussion on environment domain of QOL is summarized below:

Table 7: **Comparison of Environment between HIV-infected and Non-HIV Individuals**

Group	Mean ± SD	t	df	p-value
HIV-infected Individuals (N=50)	24.20 ± 3.79	0.76	98	NS
Non-HIV individuals (N=50)	23.50 ± 5.21			

NS=non-significant

Table 7 shows non- significant differences in environment domain of QOL between the two groups. The obtained scores of HIV-infected individuals (24.20± 3.79) were found slightly high in compared to non-HIV individuals (23.50±5.21, with a t-value of 0.76 (NS) and a mean disparity of 0.70, possibly because individuals in the early stages of HIV infection have not yet experienced a substantial impact on their living conditions or environment. This lack of significant differences in environmental conditions may be attributed to the relatively stable living conditions of asymptomatic HIV infected individuals during the early stages of HIV infection.

IV. CONCLUSIONS

The results of this study revealed significant differences between HIV infected and non-HIV individuals in relation to education levels, marital status, and disparities in the psychological and social relationships domains of quality of life (QOL). The findings of the present study are consistent with the study of Vidya et al. [28] in which HIV-infected individuals scored lower on psychological and social relationship domains of the WHOQOL-BREF scale compared to their non-HIV counterparts. These findings indicate clearly the lower-level education, undeveloped ethical and social values about marital relations influence quality of life

negatively which leads unprotected sex with others and make vulnerable to get HIV infection. In contrast, higher levels of education and strong marital relationship contribute to better quality of life and inhibits for extra- marital relations and unprotected sexual interactions with others which minimise getting the chances of HIV through unsafe sexual practices.

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