

Social Support Experiences of Patients with TB and HIV Co-infection Attending Tertiary Hospitals in Imo State, Nigeria

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ABSTRACT

Co-infection of Tuberculosis (TB) and Human Immunodeficiency Virus (HIV) remains a huge public health challenge in Nigeria with affected persons typically suffering great emotional, economic and health-related difficulties. Social support is of critical importance in boosting quality of life and encouraging positive health outcomes in patients with TB/HIV co-infection. The study investigated the social support experiences of patients with TB and HIV co-infection attending tertiary institutions in Imo State, Nigeria. The study was led by five research questions and five hypotheses. The research design was a cross sectional descriptive, and correlational. The investigation took place at the Federal Teaching Hospital, Owerri and Imo State University Teaching Hospital, Orlu. A total of 344 TB/HIV co-infected patients were recruited by Consecutive Sampling technique. Data were collected using a standardised and validated questionnaire with the Cronbach alpha reliability coefficient of 0.88. Descriptive statistics (frequencies and percentages) and Bivariable logistic regression were utilised for data analysis at 0.05 level of significance. Results indicated that family members were the major source of social support, with 47.4% of respondents indicating they received regular financial support from relatives. Respondents also received informational and emotional support from health care providers and support organisations, with varying levels of help reported. More respondents (40.7%) experienced stigma and discrimination from healthcare workers. The study also revealed that social support was linked to increased treatment adherence and improved health outcomes. Most of the respondents (84.9%) reported that their health status had improved compared to the period of first diagnosis while 75.0% reported CD4 counts over 200 cells/mm³ while on treatment. Informal interview with respondents, revealed that the financial assistance offered to them in the TB clinics encouraged regular TB clinic attendance. The study concluded that social support is a factor in TB/HIV co-infection management. There is therefore need to strengthen family, community and institutional support systems to address stigma and discrimination, that will eventually improve treatment outcomes for the patients.

Key words: Social-support, Tuberculosis/HIV, Co-infection, Stigma, Tertiary-hospitals, Nigeria.

Original Research Article

Article History

Received: 30-06-2026

Accepted: 24-08-2026

Published: 03-09-2026

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INTRODUCTION

Co-infection of Tuberculosis (TB) and Human Immunodeficiency Virus (HIV) remains one of the major public health challenges worldwide, especially in low-and-middle-income countries. The synergy between TB and HIV is a major cause of morbidity, mortality and health care burden particularly in sub-Saharan Africa where both illnesses are largely endemic. Nigeria is one of the countries with the highest burden of TB and HIV co-infection worldwide with thousands of new cases per year, despite continuous prevention and treatment efforts (National Tuberculosis and Leprosy Control Programme [1]. The simultaneous existence of multiple diseases generates complicated medical, social, economic and psychological problems that extend beyond the

immediate consequences of the infections themselves [2]. Tuberculosis is an infection caused by the bacteria *Mycobacterium tuberculosis*. It typically affects the lungs, but can also affect other organs and tissues. The disease is transmitted via aerosolised droplets which are emitted when infected patients cough, sneeze or speak. TB is preventable and curable, but is nevertheless one of the top causes of death from infectious diseases globally (World Health Organization [3].

Conversely, the Human Immunodeficiency Virus (HIV) infects and slowly destroys the immune system, rendering infected persons especially susceptible to opportunistic diseases, including tuberculosis. The most important known risk factor for the development of latent TB infection to active illness is HIV infection.

Thus, people living with HIV have a more than 20-fold increased risk of developing active TB compared to those without HIV infection [4]. The double burden of TB and HIV has serious repercussions for the sufferers. TB/HIV co-infected individuals not only suffer from the physical signs of disease, but also often face emotional suffering, financial difficulties, social isolation, stigma and discrimination. These barriers often impact healthcare-seeking behaviour, treatment adherence and overall health results. The long period of TB treatment, along with lifelong antiretroviral treatment for HIV, is a heavy burden for patients and their families. Therefore, social support has been recognised as an important component of holistic therapy for those with TB/HIV co-infection [5]. Social support is the provision of emotional, informational, material and companionship assistance by family, friends, health care professionals, community groups and social networks. Social support, as defined by the World Health Organization, is the feeling that one is cared for, has value, and is part of a helpful social network. This includes emotional support that improves self-esteem and mental health, informational support that increases knowledge about the management of the disease, material support such as financial and material assistance, and companionship support that relieves loneliness and social exclusion [6].

Evidence shows that effective social support greatly improves treatment adherence, retention in care, mental health outcomes and quality of life for those living with chronic illnesses including TB and HIV. Patients with good family and social support are more likely to take their medication, attend clinic sessions and complete treatment successfully. Conversely, poor social support may contribute to treatment stoppage, poor adherence, depression, social disengagement and higher risk of illness progression. A systematic review and meta-analysis found that social support treatments, especially material and emotional assistance, significantly increased treatment success rates and reduced loss to follow-up among TB/HIV patients [7]. Social support is important yet stigma and discrimination are still experienced by many people living with TB/HIV co-infection in families, workplaces, health care settings and communities. The combined stigma of both TB and HIV often leads to secrecy, fear of revelation, social rejection and pain. Such experiences can deter affected individuals from seeking timely healthcare and following treatment recommendations. Moreover, social and economic problems such as poverty, unemployment and low education may limit access to relevant support systems and severely affect health [8].

The World Health Organization and international development partners are increasingly advocating for patient-centred approaches to TB/HIV management that combine psychosocial and social support services alongside medical treatment. These methods understand that successful illness control is not only about pharmaceutical treatment but also dealing

with the social determinants of health that affect the welfare of patients. Social support interventions, such as counselling, peer support groups, financial help, community-based care, and family involvement, are essential methods for enhancing treatment results among TB/HIV co-infected individuals [9]. In Nigeria, research on TB/HIV co-infection has focused mostly on prevalence, risk factors, treatment outcomes and clinical care. However, little focus has been made to researching the social support experiences of patients living with the dual burden of TB and HIV, particularly in specific geographical locations such as Imo State. It is important to understand patients' experiences with emotional, informational, material, and social support in order to develop intervention strategies that address their psychological needs and improve overall treatment outcomes [10].

Imo state, like many states in Nigeria, is not left out of the burden of TB-HIV co-infection. Patients presenting to tertiary health care facilities need a spectrum of support from family members, health care providers, religious organisations, community groups and government programs to face the challenges of their condition. But the scale, adequacy and usefulness of these support systems is seldom established. Hence the necessity to generate empirical research on the social support experiences of patients with TB and HIV co-infection in the state. Thus, this study was conducted to evaluate the social support experiences of patients with co-infection of TB and HIV attending tertiary hospitals in Imo State, Nigeria. Specifically, the study aims to ascertain the awareness of TB/HIV co-infection status by members of social networks, evaluate the types of social support received from members of social networks, ascertain the usefulness of support groups, ascertain source of the experience of stigma and discrimination by TB/ HIV co-infected patients and provide evidence-based recommendations for improving patient-centred care and health outcomes among TB/HIV co-infected individuals.

MATERIALS AND METHODS

Research Design

This study adopted a cross-sectional descriptive survey and correlational design. The descriptive survey design was considered appropriate because it enabled the researcher to obtain information on the social support experiences of patients with TB and HIV co-infection attending tertiary hospitals in Imo State.

Area of the Study

The study was conducted at Federal Teaching Hospital (FTH), Owerri and Imo State University Teaching Hospital (IMSUTH), Orlu, both located in Imo State, Nigeria. These hospitals serve as major referral centres for TB and HIV treatment and provide specialized services through their Chest Clinics and Heart-to-Heart Centres. They receive patients from different parts of Imo State and neighbouring states,

making them appropriate settings for investigating social support experiences among patients with TB/HIV co-infection.

Study Population

The study population consisted of all adult patients (18 years and above) diagnosed with TB and HIV co-infection and receiving treatment at the Chest Clinics and Heart-to-Heart Centres of Federal Teaching Hospital, Owerri, and Imo State University Teaching Hospital, Orlu.

Sample Size

The sample size was 344. The sample size was determined using Cochran's formula for estimating proportions in cross-sectional studies. The calculated sample size was 344 participants. Therefore, a total of 344 TB/HIV co-infected patients were recruited for the study.

Sampling Technique

A consecutive sampling technique was employed. All eligible TB/HIV co-infected patients who attended the selected clinics during the study period and met the inclusion criteria were consecutively recruited until the required sample size of 344 was achieved. This method ensured adequate representation of the study population and minimized selection bias.

Inclusion Criteria

Participants included in the study were:

1. Patients aged 18 years and above.
2. Patients diagnosed with both tuberculosis and HIV infection.
3. Patients receiving treatment at the Heart-to-Heart Centre or Chest Clinic of the selected hospitals.
4. Patients who provided informed consent to participate.

Exclusion Criteria

The following patients were excluded:

1. Patients who declined participation.
2. Patients who were critically ill and unable to respond to the questionnaire.
3. Patients with cognitive impairment that prevented effective communication.

Instrument for Data Collection

Data were collected using a structured questionnaire titled "Social Support Experiences among TB/HIV Co-infected Patients Questionnaire (SSETHCPQ)" developed by the researcher based on relevant literature and the study objectives.

The questionnaire consisted of four sections,

Section A: Awareness Of TB/HIV Co-Infection Status by Members of Social Networks. This section ascertained the awareness of TB/HIV co-infection status by family members, religious institutions and friends.

Section B: Types of Social Support Received from Members of Social Networks. This section evaluated the types of social support received by respondents from family and Healthcare workers. It assessed the respondents' experiences regarding emotional, informational, material, and companionship support

Section C: Usefulness of Support Groups. This section ascertained the usefulness of TB and HIV support groups.

Section D: Experience of Stigma and Discrimination. This section assessed the sources of stigma and discrimination experience of the respondents from friends, schoolmates and healthcare workers.

Validity of the Instrument

Face and content validity of the instrument were established by three experts: two lecturers in Public Health and one specialist in Measurement and Evaluation from Imo State University. The experts reviewed the questionnaire for clarity, relevance, appropriateness, comprehensiveness, and alignment with the objectives of the study. Their observations and recommendations were incorporated into the final version of the instrument.

Reliability of the Instrument

The instrument was pretested. To test the reliability of the instrument, twenty (20) copies of the questionnaire were administered to twenty (20) TB/HIV co-infected patients attending a tertiary healthcare facility outside the study area. Reliability of the instrument was established using Cronbach's Alpha reliability test. The instrument was reliable with $r = 0.88$.

Ethical Considerations

Ethical approval for the study was obtained from the Health Research Ethics Committees of Federal Teaching Hospital, Owerri, and Imo State University Teaching Hospital, Orlu.

Permission to conduct the study was also obtained from the management of both hospitals. Participation was voluntary, and informed consent was obtained from all respondents before data collection. Confidentiality and anonymity were maintained throughout the study. No identifying information was collected, and all data were used strictly for research purposes. Participants were informed of their right to withdraw from the study at any stage without any consequences to their treatment or care.

Method of Data Collection

Data were collected through a face-to-face questionnaire administration method. Six trained research assistants (three from each hospital) assisted in the administration of the questionnaires. The research assistants were trained on the objectives of the study,

ethical considerations, confidentiality, and procedures for administering the instrument.

Eligible patients attending clinic appointments were approached, informed about the study, and invited to participate. Written informed consent was obtained before questionnaire administration. Respondents who could not complete the questionnaire independently were assisted by trained research assistants. Completed questionnaires were collected immediately after completion to ensure a high response rate and completeness of data.

Method of Data Analysis

Data collected were coded, entered, and analysed using Statistical Package for Social Sciences (SPSS) version 25.0. Descriptive statistics, including frequencies and percentages and Bivariable logistic regression analysis were used to summarize respondents' social support experiences. Statistical significance was set at 0.05.

RESULTS

Awareness of TB/HIV Co-Infection Status by Members of Social Networks

Table 1: Distribution of respondents by awareness of TB/HIV co-infection status by family members

S/N	Awareness of TB/HIV co-infection status by family members	Frequency	%	Valid %	CF %
1.	Family members aware of TB status				
	Yes	221	64.2%	64.2%	64.2
	No	123	35.8%	35.8%	100.0
	Total	344	100%	100%	100.0
2.	Family members who are aware of patient's TB status				
	Mother	34	9.9%	9.9%	9.9
	Father	18	5.2%	5.2%	15.1
	Spouse	83	24.1%	24.1%	39.2
	Sibling	35	10.2%	10.2%	49.4
	Others	174	50.6%	50.6%	100.0
	Total	344	100%	100%	100.0
3.	Family members aware of HIV status				
	Yes	61	17.7%	17.7%	17.7
	No	202	58.7%	58.7%	76.5
	I don't know	81	23.5%	23.5%	100
	Total	344	100%	100%	100.0
4.	Family members who are aware of patient's HIV status				
	Mother	56	16.3%	16.3%	16.3
	Father	89	25.9%	25.9%	42.2
	Spouse	97	28.2%	28.2%	70.4
	Sibling	37	10.7%	10.7%	81.1
	Others	65	18.9%	18.9%	100.0
	Total	344	100%	100%	100.0

Table 1 showed the distribution of respondents by awareness of TB/HIV co-infection status by family members. It reveals that a majority of patients (64.2%) reported that their family members were aware of their TB status, with spouses (24.1%), Siblings (10.2) and mothers (9.9%) being the most informed. In contrast,

disclosure of HIV status was significantly lower, with only (17.7%) reporting family awareness. Among those who disclosed, spouses (28.2%) and fathers (25.9%) were the most informed. However, disclosure of HIV status remains limited, suggesting stigma and fear of discrimination within households.

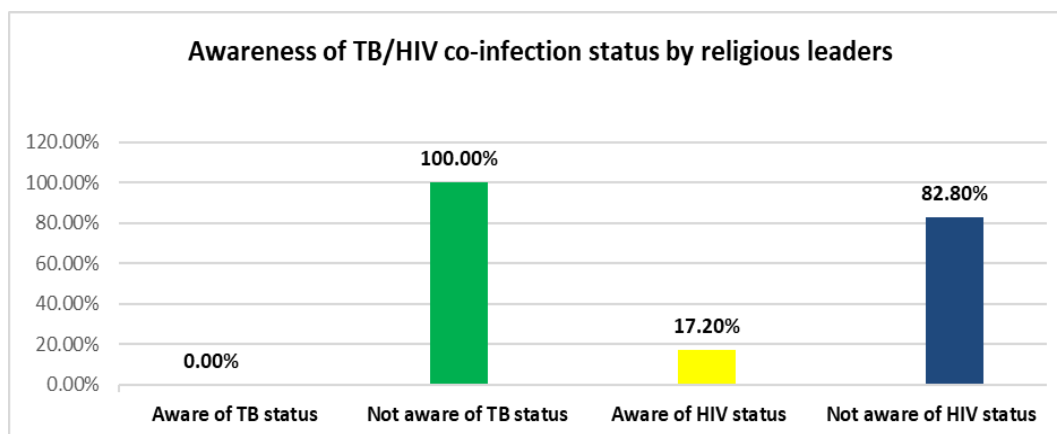


Figure 1: Awareness of TB/HIV co-infection status by religious leaders

Figure 1 showed the awareness of TB/HIV co-infection status by religious leaders. It reveals that none of the religious leaders were aware of patients' TB status,

while only 17.2% were aware of HIV status. This indicated minimal involvement of religious institutions in TB/HIV support.

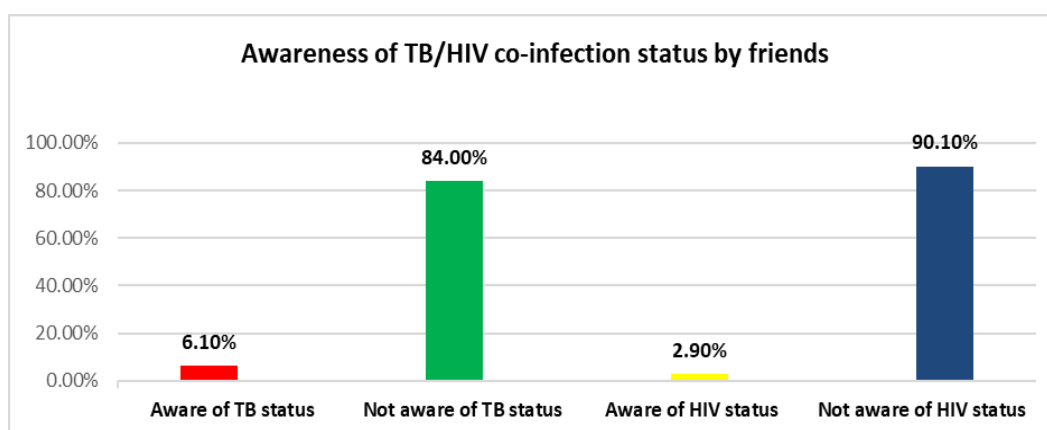


Figure 2: Awareness of TB/HIV co-infection status by friends

Figure 2 showed the awareness of TB/HIV co-infection status by Friends. It reveals that Awareness by Friends was low for both TB (6.1%) and HIV (2.9%), reflecting patients' reluctance to disclose their status to their peers, likely due to stigma. This revealed that religious and peer networks are underutilized sources of

support, constrained by secrecy and fear of social rejection.

Type of Social Support Received from Members of Social Networks

Table 2: Distribution of respondents by type of social support received from members of social networks

S/N.	Type of Social Support	Frequency	%	Valid %	CF %
1	Family members encourage hope, confidence and reassurance				
	Always	117	34.0%	34.0%	34.0
	Sometimes	177	51.5%	51.5%	85.5
	Never	50	14.5%	14.5%	100.0
	Total	344	100%	100%	100.0
2	Family members offer financial help				
	Always	163	47.4%	47.4%	47.4
	Sometimes	113	32.8%	32.8%	80.2
	Never	68	19.8%	19.8%	100.0
	Total	344	100%	100%	100.0
3	Family members assists with household chores.				
	Always	155	45.0%	45.0%	45.0
	Sometimes	109	31.7%	31.7%	76.7

S/N.	Type of Social Support	Frequency	%	Valid %	CF %
	Never	80	23.3%	23.3%	100.0
	Total	344	100%	100%	100.0
4	Family members assists with getting tasks done.				
	Always	148	43.0%	43.0%	43.0
	Sometimes	128	37.2%	37.2%	80.2
	Never	68	19.8%	19.8%	100.0
	Total	344	100%	100%	100.0
5.	The type of support received from the healthcare personnel				
	Provisions of clear information about health condition and treatment	110	32.0%	32.0%	32.0
	Listen to concerns and answer questions	29	8.4%	8.4%	40.4
	Respectful and non-judgmental	23	6.7%	6.7%	47.1
	Help manage side effects	33	9.6%	9.6%	57.7
	Remind about appointment	25	7.3%	7.3%	64
	Provide emotional encouragement	10	2.9%	2.9%	66.9
	Refer patient to other services	102	29.7%	29.7%	96.6
	Others (home visits and nutritional support)	12	3.4%	3.4%	100.0
	Total	344	100%	100%	100.0

Table 2 showed the distribution of respondents by type of Social Support received from Social Networks. It reveals that patients reported diverse forms of support, forms of family support included, Emotional encouragement which was frequent, with 34% reporting (always) and 51.5% (sometimes) receiving reassurance. Financial support was relatively strong, with 47.4% (always) and 32.8% (sometimes) receiving assistance. Practical support (household chores and tasks outside the home) was also notable, with 45.1% and 43.0% respectively reporting (always) receiving help. This implies that Families constitute the primary support system, offering emotional, financial, and practical

assistance. From healthcare workers, they provide clear information about patient's condition and treatment (32.0%) and referrals to other services (29.7%) were the most common. Practical assistance such as managing side effects (9.6%) and appointment reminders (7.3%) were less frequent. Respectful and non-judgmental attitudes were acknowledged by 6.7% of the patients. This implies that Healthcare workers provide critical psychosocial and informational support, though the relatively low percentages in practical care suggest gaps in patient-centered service delivery.

Usefulness of Support Groups

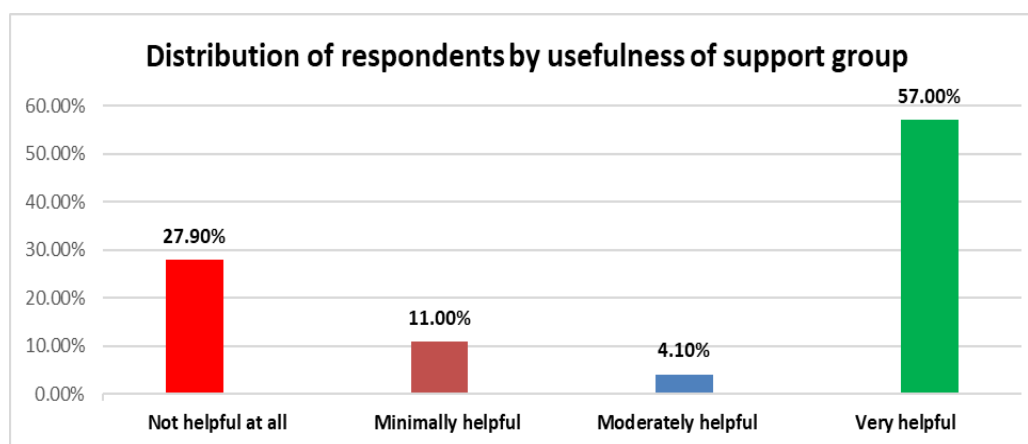


Figure 3: Distribution of respondents by usefulness of support group

Results in Figure 3 showed the distribution of respondents by usefulness of Support group. It revealed that 57.0% of patients found TB/HIV support groups (very helpful) while 27.9% found them (not helpful at all). This polarization suggests variability in group

effectiveness, possibly influenced by facilitation quality, group cohesion, or stigma the patients has experienced within the groups themselves. Support groups were valuable for many but not universally effective.

Experience of Stigma and Discrimination

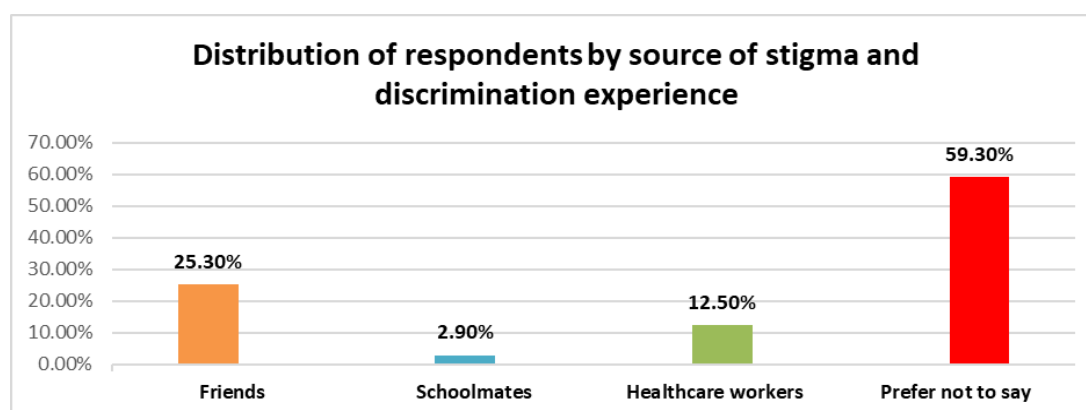


Figure 4: Distribution of respondents by source of stigma and discrimination experience

Figure 4 showed the distribution of respondents by source of stigma and discrimination experience. It revealed that 25.3% of the TB/HIV patients experienced stigma from friends, 12.5% from healthcare workers, and 2.9% from schools. Worryingly, 59.3% preferred not to disclose experiences of stigma, underscoring the sensitivity of the issue and the pervasive fear of

judgment. Based on the findings, the level and nature of social support for TB/HIV comorbid patients in Imo State is heterogeneous, strong familial support exists in emotional, financial, and practical domains, but disclosure of HIV status is limited. Stigma remains a significant barrier, shaping disclosure patterns and limiting broader social support.

Table 3: Bivariable logistic regression of social support experiences among patients with TB and HIV co-infection attending tertiary hospitals in Imo State receive

S/N	Factor	Category		β Coefficient	Odds Ratio (OR)	95% CI	P-value
1.	Family members awareness of TB status	Yes or No		2.84	2.15	1.45-3.18	0.801
2.	The family member who are aware of a patient's TB status	Yes or No		0.98	0.42	0.21-0.83	0.012
3.	Religious leader (Priest & Pastor) aware of the patient's TB status	Yes or No		0.74	0.58	0.29-1.12	0.098
4.	Friends aware of TB status	Yes or No		0.80	0.31	0.14-0.69	0.004
5.	Family members aware of HIV status	Yes or No		1.33	1.32	0.88-1.97	0.176
6.	Family member who are aware of a patient's HIV status	Always vs. Never		2.81	2.74	1.65-4.55	<0.001
7.	Religious leader (Priest & Pastor) awareness of the patients HIV status	Always vs. Never		1.88	1.89	1.12-3.18	0.016
8.	Friends aware of HIV status	Always vs. Never		1.79	1.65	1.01-2.69	0.045
9.	Family members encourage hope, confidence and reassurance	Encouragement vs. None		1.54	1.72	1.08-2.74	0.052
10.	Family members offer financial help	Very vs. Not		2.88	3.12	2.01-4.85	<0.001
11.	Family members assistance with household chores	Always vs. Never		2.05	2.48	1.65-3.95	<0.001
12.	Family members assistance by getting tasks done	Yes or No		2.91	1.94	1.21-3.11	0.050
13.	Usefulness of the support groups	Always vs. Never		0.81	2.00	2.05-3.22	<0.001
14.	The type of support received from the healthcare in managing TB/HIV patients	Support vs. None		1.80	1.89	1.71-3.22	0.001
15.	TB/HIV patients experience of any form of stigma or discrimination.	Experience vs. None		1.90	1.87	1.21-2.14	0.003

Table 3 showed the bivariable logistic regression analysis of social support experiences and patients with TB and HIV co-infection attending tertiary hospitals in Imo State receive. Odds Ratios (OR) > 1 indicated increased likelihood of disclosure/awareness with that factor while p-values < 0.05 showed statistically significant associations. However, the family members who are aware of a patients' HIV status, family member's financial help, family member's assistance with household chores and useful support from HIV/TB patients group indicated the highest risk factor of TB/HIV co-infection, with a strong association between social support experience factors and TB/HIV co-infection management and control (OR = 4.1, and p-value = <0.001). Also, the type of support received from the healthcare in managing TB/HIV patients and the TB/HIV patients' experiences of forms of stigma or discrimination were strongly associated with higher odds of TB/HIV co-infection treatment. Religious leader (Priest & Pastor) aware of the patients TB status and family members aware of your TB/HIV status indicated no significance association. The family members who encourage hope, confidence and reassurance do not significantly reduce risk compared to family member's assistance by getting tasks done. Therefore, based on the highlighted findings, there is a strong association between social support experiences and patients with TB and HIV co-infection attending tertiary hospitals in Imo State receive.

DISCUSSION

The findings revealed that the social support for patients with TB/HIV co-infection was heterogeneous. Family members constituted the primary support system, providing emotional, financial, and practical assistance. However, disclosure of HIV status remains limited compared to TB, reflecting persistent stigma and fear of discrimination. Religious leaders and peer networks were minimally involved, while healthcare workers provide critical informational and psychosocial support, though practical assistance was less frequent. Support groups show polarized effectiveness, as some of the patients found support groups very helpful while others did not. Family members were therefore the most important source of social support to patients with TB/HIV co-infection though some failed to disclose their HIV status to their family.

The results also highlighted the importance of the family in giving emotional, material and practical assistance to patients with the combined burden of TB and HIV infection. Family support is expected to reduce stress, promote psychological well-being, and facilitate adherence to treatment, ultimately leading to better health outcome. This suggests that while families are central to patient care, stigma within households continues to constrain openness. The minimal involvement of religious leaders and peers highlights underutilized opportunity for community-based support, which could be leveraged to reduce isolation and stigma.

Healthcare workers, though vital, also appear underutilized in providing practical assistance, pointing to gaps in patient-centered care delivery. The polarized perception of support groups suggests that their effectiveness depends heavily on facilitation quality and group dynamics, which should be standardized to maximize impact.

The regression analysis further strengthens the argument that social support is not merely ancillary but central to TB/HIV management. Family financial support, assistance with household chores, and useful support from patient groups were strongly associated with improved management outcomes (OR = 4.1, p < 0.001). This aligns with global evidence that social determinants and support systems significantly shape TB/HIV outcomes. These findings were expected and they resonate with prior studies. In this study, reassurance did not significantly reduce risk when compared to practical support which aligns with an earlier study that emphasized the role of social support in chronic disease management and noted that emotional encouragement alone may not suffice without tangible assistance [11]. Healthcare workers were found to be main sources of informational support, highlighting the important role of health care professionals in empowering patients through health education, counselling and guidance. Good information helps the patient to better comprehend the illness, comply with the treatment plan, and make educated decisions regarding health [12]. Also the World Health Organization's suggested that complete informational assistance should be offered in patient-centered care to improve treatment outcomes among people with chronic diseases including TB and HIV.

Psychosocial support has been found to be essential for improving disease outcomes[13]. Findings also pointed to support groups and religious organisations as key providers of psychosocial help. More than half of the respondents stated that TB/HIV support groups were extremely helpful in addressing their needs. Likewise, some of the respondents said that the clergy always offered prayers, counselling, encouragement and visitation. Religious support may increase hope, resilience and emotional well-being for those affected, which underscore the necessity of community-based support systems to supplement formal healthcare services [14]. This study also revealed that stigma remains a major social barrier for persons living with TB and HIV co-infection. Experiences of stigma and discrimination can have a negative impact on self-esteem, social relationships, treatment adherence and healthcare-seeking behaviours [15]. Existence of stigma implies that there is need for more vigorous public health education, community sensitisation campaigns and anti-stigma interventions targeted at fostering acceptance and decreasing misconceptions surrounding TB and HIV infections [15]. Similarly, certain social determinants, and socioeconomic factors were found to be critical

barriers to effective management of TB/HIV [16]. Strong relationships were also found with family awareness of HIV status, financial support from family members, help with household duties, engagement in support groups and good management of TB/HIV co-infection [16,17]. This study thus adds to the growing evidence that social support is an indispensable component of comprehensive TB/HIV care [18,19,20,21].

CONCLUSION

This study demonstrated that social support is a factor in TB/HIV co-infection management. Patients with TB and HIV co-infection attending tertiary hospitals in Imo State received moderate social support. Families provided substantial assistance, but stigma limited disclosure, particularly of HIV status. Religious and peer networks remained underutilized, while healthcare workers and support groups offered mixed levels of support. There is urgent need for interventions that reduce stigma, expand community involvement, and enhance patient-centered care.

RECOMMENDATION

Healthcare institutions and governments need to increase social support interventions for patients with TB/HIV co-infection. This can be achieved by expanding patient support groups, improving family-centred care programmes, provision of psychosocial counselling services, community-based anti-stigma campaigns and financial aid programmes for economically disadvantaged patients. Such treatments would lead to improved treatment adherence, improved quality of life and improved health outcomes for those living with TB and HIV co-infection.

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