P-ISSN: 2790-6795	Annals of Human and Social Sciences	Jan-March 2025,Vol. 6, No. 1
O-ISSN:2790-6809	http://doi.org/10.35484/ahss.2025(6-I)14	[153-160]

Annals of Human and Social Sciences
www.ahss.org.pk

RESEARCH PAPER

Role of Illness Perception towards Medicine Adherence in Tuberculosis Patients

[1]Sadia Bibi *, [2]Amina and [3]Dr. Kalim Ullah

1. Post RN Student, Department of Nursing, Superior university Lahore, Punjab, Pakistan
2. Post RN Student, Department of Nursing, Superior university Lahore, Punjab, Pakistan
3. Associate Professor, Department of Nursing, Superior University & Head, Department of Pharmacy, Minhaj University Lahore , Punjab, Pakistan

Corresponding Author Sadiaabdulghani055@gmail.com

ABSTRACT

This study assess illness perception and medication adherence among tuberculosis (TB) patients and evaluate their relationship. Illness perception influences coping behaviors and medication adherence, impacting self-care and recovery.A descriptive cross-sectional study was conducted at Jinnah Hospital, Lahore, from March to June 2024, involving 133 TB patients aged 18 years or older on anti-TB treatment for at least one month. Data were collected using the Brief Illness Perception Questionnaire (BIPQ) and Morisky Medication Adherence Scale (MMAS-8) and analyzed using SPSS v25. Participants were predominantly aged 30–39 years (49.6%), single (67.7%), and had moderate illness perception (77.4%). High medication adherence was observed in 64.7%. No significant association was found between illness perception and medication adherence ($p = 0.298$). Despite high medication adherence, illness perception had no significant impact, indicating a need for targeted strategies to enhance adherence further.

Keywords: Illness Perception; Medication Adherence; Tuberculosis; TB Treatment

Introduction

Illness perception plays a vital role in shaping patients' coping behaviors, medication adherence, and recovery (Ali et al., 2020). This illustrates that individuals perceive their circumstances as shaped by personal beliefs, cultural values, and socioeconomic factors (Atif et al., 2022). Self-care and patients' participation in compliance of medication can positively influence the overall quality of life (Parums, 2021). Healthcare practitioners may rectify misconceptions by using good communication, fostering trust, and engaging in collaborative decision-making, thereby enhancing results and patient motivation (Chen et al., 2020).

Tuberculosis (TB) is a significant global health concern, particularly in underdeveloped countries such as Pakistan, which has the fifth highest prevalence of TB (Hassan et al., 2021). There are many challenges that patients face during medication adherence (Organization, 2022). These challenges can be overcome by providing patient centered care and education (Kwame & Petrucka, 2021) early diagnosis of TB is important to address the adverse consequences (Zumla et al., 2021). TB causes social isolation of patients and it compromised the overall health of patients (Myburgh et al., 2023).

Psychological support also plays an important role in adherence to medication as majority of tb patients face depression due to taking continuous medications (Chakaya et al., 2021). It is evident from research that positive handling of emotional distress and stigma can improve the treatment adherence of patients (Nidoi et al., 2021). It can be improved by educating patients and removing the barriers to health care facilities (Chong et al., 2020). Therefore, it is vital to identify the role of illness perception in medication adherence of patients (Datiko et al., 2020).

Literature Review

Illness perception is very important for patients as it helps the patients to follow their treatment (Marchetti & Sawrikar, 2024). It is reported in a research study that about 10 million new cases of TB reported in 2019 (Chakaya et al., 2021). Adherence to treatment is vital to the feat of TB cure (Pan et al., 2020). A study of 390 pulmonary tuberculosis patients in China revealed a mean Brief Illness Perception Questionnaire (BIPQ) score of 31.6 ± 13.2, which correlated with clinical TB scores. Patients expressed concerns but predominantly trusted the prescribed therapy, acknowledging an inadequate diet as a significant factor in their condition. Higher BIPQ scores correlated with prolonged coughing, alarming symptoms, and medication non-compliance. (Min et al., 2019). In the province of Limpopo, a cross-sectional research evaluated 292 patients' views, beliefs, and knowledge on tuberculosis. Results showed 93.25% learned of their TB after diagnosis, 75% visited faith healers, and 2% visited traditional healers. Additionally, 76% strongly believed in their culture and religion, emphasizing the need for health education to improve TB awareness and dispel misconceptions (Matakanye et al., 2021).

A literature review in Ethiopia examined factors affecting TB treatment adherence, including 29 studies from 276 screened. Seven key themes emerged: patient-centered, social, economic, health system, therapy, lifestyle, and geographic access factors, with non-adherence and loss to follow-up being major concerns (Nezenega et al., 2020).

Material and Methods

This descriptive cross-sectional study was conducted at Jinnah Hospital Lahore over four months (March to June 2024) to assess the role of illness perception in medication adherence among tuberculosis (TB) patients. A sample of 133 patients was selected using a convenient sampling technique, with inclusion criteria encompassing clinically diagnosed TB patients aged 18 or older, on anti-TB medication for at least one month, mentally capable of understanding the study, and providing informed consent. Patients with serious co-existing conditions, severe mental disorders, or prior participation in similar studies were excluded. Ethical considerations included written informed consent, anonymity, and confidentiality. Data were collected using a demographic questionnaire, the Brief Illness Perception Questionnaire (BIPQ), and the Morisky Medication Adherence Scale (MMAS-8). Illness perception scores ranged from 1 to 125, categorized as low (1–42), moderate (43–83), and high (84–125), while medication adherence scores ranged from 8 to 16, classified as poor (0–8), moderate (9–12), and high (13–16). Data analysis was performed using SPSS 25, with frequencies, percentages, and chi-square tests to examine relationships between variables.

Results and Discussion

Table 1
Demographic Characteristics of Participants

Variable	Category	Frequency	Percent
Age in Year	<20 Year	30	22.6
	20-29 Year	37	27.8
	30-39 Year	66	49.6
Marital Status	Married	43	32.3
	Single	90	67.7
Religion	Christian	37	27.8
	Muslim	96	72.2
Educational level of Respondent	No formal education	6	4.5
	Primary	10	7.5
	Middle	53	39.8
	High School	34	25.6
	University Level	30	22.6

Table 1 presents the demographic characteristics of the study participants. The majority of participants (49.6%) were aged 30–39 years, followed by 27.8% aged 20–29 years, and 22.6% under 20 years. Regarding marital status, most participants were single (67.7%), while 32.3% were married. The majority identified as Muslims (72.2%), with 27.8% being Christians. In terms of education, 39.8% had a middle school education, 25.6% completed high school, and 22.6% had a university-level education. A smaller proportion had primary education (7.5%), and 4.5% reported no formal education. This distribution highlights the diverse demographic profile of the participants in the study.

Table 2
Overall Illness Perception of TB Patients

Level of Illness Perception	Frequency	Percent
Moderate Illness Perception	103	77.4
High Illness Perception	30	22.6

Table 2 shows that 77.4% of TB patients had moderate illness perception, while 22.6% exhibited high perception, indicating varied awareness levels of the illness's impact and severity.

Table 3
Medication Adherence of participants

SN	Statement	Yes F (%)	No F (%)
1	Do you sometimes forget to take your TB medication(s)?	84(63.2%)	49(36.8%)
2	Sometimes miss taking their medications for reasons other than forgetting. Thinking over the past two weeks, were there any days when you did not take your TB medication(s)?	43(32.3%)	90(67.7%)
3	Have you ever cut back or stopped taking your medication without telling your doctor, because you felt worse when you took it?	82(61.7%)	51(38.3%)
4	When you travel or leave home, do you sometimes forget to bring along your TB medication?	48(36.1%)	85(63.9%)
5	Did you take your TB medication yesterday?	21(15.8%)	112(84.2%)
6	When you feel sick, do you sometimes stop taking your medication?	59(44.4%)	74(55.6%)
7	Taking medication every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your TB treatment plan?	47(35.3%)	86(64.7%)
8	How often do you have difficulty remembering to take all your medication?	45(33.8%)	88(66.2%)

Table 3 shows that a significant number of participants (63.2%) reported sometimes forgetting to take their TB medications, while 36.8% claimed they did not forget. Additionally, 32.3% admitted to missing their medication in the past two weeks for reasons other than forgetting. Furthermore, 61.7% have cut back or stopped taking their medication without consulting their doctor due to feeling worse when medicated. When traveling, 36.1% occasionally forget to bring their TB medication. Only 15.8% of participants reported taking their medication the day before the survey, while 84.2% did not.

Table 4
Overall Medication Adherence of TB Patients

Level of Medication Adherence	Frequency	Percent
Poor Medication Adherence	0	0
Moderate Medication Adherence	47	35.3
High Medication Adherence	86	64.7

Table 4 presents the overall medication adherence levels among TB patients. Out of the 133 participants, none exhibited poor medication adherence. A notable 35.3% of participants demonstrated moderate medication adherence, while the majority, 64.7%, showed high adherence to their TB medication regimen. This distribution highlights that although a significant proportion of patients maintain high adherence, there is still a considerable number with moderate adherence, indicating room for improvement in ensuring consistent medication practices.

Table 5
Associations Between Illness Perception and Adherence Level

Illness Perception Level	Medication Adherence		P- Value
	Moderate Medication Adherence	High Medication Adherence	
Moderate Illness Perception	34	69	0.298
High Illness Perception	13	17	

Table 4.5 shows that there is no statistically significant association between illness perception levels and medication adherence as p-value of 0.298.

Discussion

This study explored the role of illness perception in influencing medication adherence among tuberculosis (TB) patients. The findings of illness perceptions reveals a spectrum of attitudes among participants. A large proportion agreed that they expect to live with their illness for life. This finding is consistent with a previous study that shows that chronic illness can impact medication adherence negatively (McMaughan et al., 2020). Participants also stated varying degrees of confidence about treatment efficiency. This is supported by a study that showed same findings (Nezenega et al., 2020).

A prominent fraction of participants sometimes forget to take their medications. These findings are consistent with previous research, which identifies forgetfulness and inconvenience as common barriers to adherence (Myburgh et al., 2023) high rate of missed doses (84.2% reported missing medication the previous day) and the substantial proportion stopping medication when feeling unwell (44.4%) further underscore the need for strategies to improve adherence. The fact that none of the participants were categorized as having poor adherence, with 64.7% showing high adherence, suggests that while most patients adhere well, there remains a considerable portion with moderate adherence.

The findings of this study are consistent with several previous studies on TB and medication adherence. For example, the moderate to high level of medication adherence observed here is similar to the results of studies in other regions, which also found that a significant proportion of TB patients exhibit moderate to high adherence (Ali et al., 2020).However, the challenges identified, such as forgetfulness and the impact of illness perception, align with other research indicating that patients' beliefs about their illness significantly affect their medication-taking behavior (Chen et al., 2020).

The current study showed significant association between illness perception and medication adherence among tuberculosis patients. This finding agrees with study that highpoints a notable association between illness perception and medicine adherence (Hassan et al., 2021). A study reveals a distinguished relationship between illness perception and medicine adherence (Min et al., 2019).

Conclusion

The study concluded that majority of participants had moderate level of illness perception and some participants were aware about their illness. Most of the participants were adhere to their treatment. Majority of participants reported that inconvenience in treatment and forgetting to take medicine were major barriers to their treatment. Medication adherence has significant association with their illness perception

Recommendations

1. Educational programmed should be initiate to aware the people about importance of treatment adherence to properly cure the disease.

2. Healthcare providers should guide about disease that it is not stigma, it should be checked and treated immediately as it is curable and can improve their quality of life.

3. Patients' beliefs about treatment should also be addressed to improve the compliance

References

Ali, S., Khan, M. T., Khan, A. S., Mohammad, N., Khan, M. M., Ahmad, S., Noor, S., Jabbar, A., Daire, C., & Hassan, F. (2020). Prevalence of multi-drug resistant Mycobacterium tuberculosis in Khyber Pakhtunkhwa–a high tuberculosis endemic area of Pakistan. *Polish journal of microbiology, 69*(2), 133-137.

Atif, M., Munir, K., Malik, I., Al-Worafi, Y. M., Mushtaq, I., & Ahmad, N. (2022). Perceptions of healthcare professionals and patients on the role of the pharmacist in TB management in Pakistan: A qualitative study. *Frontiers in Pharmacology, 13*, 965806.

Bea, S., Lee, H., Kim, J. H., Jang, S. H., Son, H., Kwon, J.-W., & Shin, J.-Y. (2021). Adherence and associated factors of treatment regimen in drug-susceptible tuberculosis patients. *Frontiers in pharmacology, 12*, 625078.

Broadbent, E., Ellis, C. J., Gamble, G., & Petrie, K. J. (2006). The role of illness perceptions in predicting treatment adherence in asthma. *Psychology & Health, 21*(5), 655-665.

Chakaya, J., Khan, M., Ntoumi, F., Aklillu, E., Fatima, R., Mwaba, P., Kapata, N., Mfinanga, S., Hasnain, S. E., & Katoto, P. D. (2021). Global Tuberculosis Report 2020–Reflections on the Global TB burden, treatment and prevention efforts. *International journal of infectious diseases, 113*, S7-S12.

Chen, X., Du, L., Wu, R., Xu, J., Ji, H., Zhang, Y., Zhu, X., & Zhou, L. (2020). The effects of family, society and national policy support on treatment adherence among newly diagnosed tuberculosis patients: a cross-sectional study. *BMC infectious diseases, 20*, 1-11.

Chong, Y. Y., Chien, W. T., Cheng, H. Y., Chow, K. M., Kassianos, A. P., Karekla, M., & Gloster, A. (2020). The role of illness perceptions, coping, and self-efficacy on adherence to precautionary measures for COVID-19. *International journal of environmental research and public health, 17*(18), 6540.

Datiko, D. G., Jerene, D., & Suarez, P. (2020). Stigma matters in ending tuberculosis: Nationwide survey of stigma in Ethiopia. *BMC Public Health, 20*(1), 190.

Hassan, T. A., Sáenz, J. E., Ducinskiene, D., Cook, J. P., Imperato, J. S., & Zou, K. H. (2021). New strategies to improve patient adherence to medications for noncommunicable diseases during and after the COVID-19 era identified via a literature review. *Journal of Multidisciplinary Healthcare*, 2453-2465.

Kvarnström, K., Westerholm, A., Airaksinen, M., & Liira, H. (2021). Factors contributing to medication adherence in patients with a chronic condition: a scoping review of qualitative research. *Pharmaceutics, 13*(7), 1100.

Kwame, A., & Petrucka, P. M. (2021). A literature-based study of patient-centered care and communication in nurse-patient interactions: barriers, facilitators, and the way forward. *BMC nursing, 20*(1), 158.

Leventhal, H., Nerenz, D. R., & Steele, D. J. (1984). Illness representations and coping with health threats. In A. Baum & J. E. Singer (Eds.), *Handbook of Psychology and Health* (pp. 219-252). Erlbaum.

Marchetti, D., & Sawrikar, V. (2024). Parents' illness representations of their child with anorexia nervosa: A systematic review of qualitative studies using the common-sense model. *International Journal of Eating Disorders, 57*(5), 1049-1068.

Matakanye, H., Tshitangano, T. G., Mabunda, J. T., & Maluleke, T. X. (2021). Knowledge, beliefs, and perceptions of TB and its treatment amongst TB patients in the Limpopo Province, South Africa. *International journal of environmental research and public health, 18*(19), 10404.

McMaughan, D. J., Oloruntoba, O., & Smith, M. L. (2020). Socioeconomic status and access to healthcare: interrelated drivers for healthy aging. *Frontiers in public health, 8*, 512143.

Min, J., Chung, C., Jung, S. S., Park, H. K., Lee, S.-S., & Lee, K. M. (2019). Understanding illness perception in pulmonary tuberculosis patients: One step towards patient-centered care. *Plos one, 14*(6), e0218106.

Myburgh, H., Baloyi, D., Loveday, M., Meehan, S.-A., Osman, M., Wademan, D., Hesseling, A., & Hoddinott, G. (2023). A scoping review of patient-centred tuberculosis care interventions: gaps and opportunities. *PLOS Global Public Health, 3*(2), e0001357.

Nezenega, Z. S., Perimal-Lewis, L., & Maeder, A. J. (2020). Factors influencing patient adherence to tuberculosis treatment in Ethiopia: a literature review. *International journal of environmental research and public health, 17*(15), 5626.

Nidoi, J., Muttamba, W., Walusimbi, S., Imoko, J. F., Lochoro, P., Ictho, J., Mugenyi, L., Sekibira, R., Turyahabwe, S., & Byaruhanga, R. (2021). Impact of socio-economic factors on Tuberculosis treatment outcomes in north-eastern Uganda: a mixed methods study. *BMC Public Health, 21*, 1-16.

Organization, W. H. (2020). *Global tuberculosis report 2020*. World Health Organization.

Organization, W. H. (2022). *Global tuberculosis report 2021: supplementary material*. World Health Organization.

Ozumba, L. N., Dienye, P., & Ndukwu, G. (2023). Role of Illness Perception and Medication Beliefs in Medication Adherence among Hypertensive Patients. *Anatolian Journal of Family Medicine, 6*(1).

Pan, Z., Zhang, J., Bu, Q., He, H., Bai, L., Yang, J., Liu, Q., & Lyu, J. (2020). The gap between global tuberculosis incidence and the first milestone of the WHO end tuberculosis strategy: an analysis based on the global burden of disease 2017 database. *Infection and Drug Resistance*, 1281-1286.

Parums, D. V. (2021). updates from the World Health Organization (WHO) on global treatment recommendations for drug-susceptible and multidrug-resistant tuberculosis. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 27*, e934292-934291.

Shringarpure, K., Gurumurthy, M., Sagili, K. D., Taylor, M., Garner, P., Tonsing, J., Rao, R., & Sachdeva, K. S. (2023). Patient adherence to tuberculosis treatment in the Indian subcontinent: systematic review and meta-synthesis of qualitative research. *BMJ open, 13*(5), e063926.

Stagg, H. R., Abubakar, I., Campbell, C. N., Copas, A., Darvell, M., Horne, R., Kielmann, K., Kunst, H., Mandelbaum, M., & Pickett, E. (2019). IMPACT study on intervening with a manualised package to achieve treatment adherence in people with tuberculosis: protocol paper for a mixed-methods study, including a pilot randomised controlled trial. *BMJ open, 9*(12), e032760.

Tan, X., Patel, I., & Chang, J. (2014). Review of the four item Morisky medication adherence scale (MMAS-4) and eight item Morisky medication adherence scale (MMAS-8). *INNOVATIONS in pharmacy, 5*(3), 5.

Turen, S., Yilmaz, R. A., & Gundogdu, S. (2021). The relationship with acceptance of illness and medication adherence in type 2 diabetes mellitus patients. *International Journal of Caring Sciences, 14*(3), 1824-1832.

van den Bos, J. M., ten Klooster, P. M., Taal, E., & van de Laar, M. A. (2018). The relationship between illness perceptions and adherence to medication in rheumatoid arthritis patients. *Clinical Rheumatology, 37*(5), 1217-1224.

Zumla, A., Chakaya, J., Khan, M., Fatima, R., Wejse, C., Al-Abri, S., Fox, G. J., Nachega, J., Kapata, N., & Knipper, M. (2021). World Tuberculosis Day 2021 Theme—'The Clock is Ticking'—and the world is running out of time to deliver the United Nations General Assembly commitments to End TB due to the COVID-19 pandemic. *International journal of infectious diseases, 113*, S1-S6.