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# Impact of Socioeconomic and Structural Determinants on Sustained Treatment Discontinuation among Chronic Disease Patients in Ghazni Province, Afghanistan

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## ABSTRACT

### Purpose:

This study delves into the role of Socioeconomic and structural determinants on sustained treatment discontinuation within the context of Ghazni province.

### Method:

This study employed a quantitative, survey-based descriptive research design, utilizing a structured questionnaire for data collection. A statistically significant sample of 385 participants was selected using the Cochran sampling method.

The collected data were analysed using SPSS statistical software, applying Pearson's correlation coefficient to assess the strength and direction of relationships between variables. Additionally, multiple regression analysis was conducted to determine the predictive influence of socioeconomic and structural determinants dimensions on discontinuation of sustained treatment.

### Results:

The study included a sample of 385 participants from Ghazni Province, selected via Cochran Sampling method. The findings of the research and data analysis by revealing a significant positive correlation between socioeconomic & structural determinants and sustained treatment discontinuation, prove that socioeconomic situation plays a crucial role in the continuous treatment of the chronically ill patients. Specifically, the correlation coefficient of 0.821 indicates a strong direct relationship.

### Practical Implications:

These findings hold the potential to guide administrators and policymakers to support the public general hospitals, control the costs thereby playing a pivotal role in supporting the performance and operational efficiency.

### Originality/Novelty:

The findings of the research and data analysis by revealing a significant positive correlation between socioeconomic & structural determinants and sustained treatment discontinuation, prove that socioeconomic situation plays a crucial role in the continuous treatment of the chronically ill patients.

**Keywords:** Treatment, Sustained-treatment, chronically ill patients, Discontinuation, Socioeconomic, Socioeconomic & Structural-determinants.

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## 1. Introduction

Chronic diseases, also known as non-communicable diseases (NCDs), are long-lasting conditions that usually progress slowly and require sustained medical attention over time. Among the most common chronic diseases are cardiovascular diseases such as hypertension and heart failure, diabetes mellitus, chronic respiratory diseases such as asthma and chronic obstructive pulmonary disease, chronic kidney disease, and certain forms of cancer. Unlike acute illnesses, chronic diseases often necessitate continuous treatment and monitoring, sometimes extending for the entire lifetime of the patient (WHO, 2023) (Bodenheimer & Berry-Millett, 2009).



Chronic diseases such as diabetes mellitus, cardiovascular diseases, chronic kidney disease, cancer, and chronic respiratory conditions represent a significant global health burden. These illnesses are long-lasting, often progressive, and require continuous medical attention and lifestyle adjustments. According to the World Health Organization, chronic diseases account for approximately 71% of all deaths globally, with a disproportionate impact on low- and middle-income countries (Naghavi, 2017).

Effective management of chronic diseases hinges on sustained treatment adherence, which includes regular medication intake, routine clinical evaluations, diagnostic testing, and sometimes complex interventions such as dialysis or chemotherapy. The continuity of care is essential not only for symptom control but also for preventing complications, reducing hospitalizations, and improving patients' quality of life (Essue, Laba, & Jan, 2017).

Sustained treatment refers to long-term therapeutic interventions that are maintained to prevent disease progression, reduce complications, and improve patients' quality of life. The duration of such treatment varies depending on the condition: for example, antihypertensive medications and insulin therapy for diabetes are often lifelong, whereas certain cancers may require chemotherapy or radiotherapy for a defined period ranging from several months to years. The financial burden of such prolonged treatments can be considerable, especially in low-income countries where patients often bear out-of-pocket expenses (May, et al., 2014).

In resource-limited settings like Ghazni Province in Afghanistan, the socioeconomic & structural determinants faced by patients significantly affect their ability to continue treatment. Chronic disease management requires regular access to medicines, diagnostic facilities, and follow-up visits, all of which demand financial stability and adequate healthcare infrastructure. For instance, uninterrupted access to antihypertensive drugs or insulin is vital, yet many patients discontinue treatment due to affordability issues, lack of medical supplies, or inadequate healthcare services. Discontinuation of treatment for chronic diseases often leads to severe complications such as stroke, myocardial infarction, renal failure, or even premature death (van de Wetering, et al., 2024).

Linking chronic disease management with the local socioeconomic & structural determinants is therefore crucial. In provinces like Ghazni, where poverty rates are high and healthcare resources are limited, treatment adherence is directly influenced by economic status. Ensuring sustained treatment for chronic patients requires not only medical expertise but also financial support mechanisms, community health programs, and availability of essential diagnostic and therapeutic equipment at the provincial hospital level. At a minimum, Ghazni Provincial Hospital must be equipped with basic diagnostic tools (blood pressure monitors, glucose analysers, ECG machines), essential medications for hypertension, diabetes, and asthma, and trained healthcare professionals capable of providing long-term patient education and follow-up care (Patel, Volpp, & Asch, 2019).

Thus, the impact of socioeconomic & structural determinants on sustained treatment discontinuation emerges as a major challenge in chronic disease management in Afghanistan. Addressing this challenge requires collaborative strategies between health authorities, local communities, and international health partners to strengthen healthcare delivery and reduce the economic burden on patients (Stanikzai, 2023).

However, the economic burden associated with chronic disease management is substantial. Patients often face direct costs such as medication, diagnostic procedures, and transportation, as well as indirect costs including lost income due to reduced work capacity or caregiving responsibilities. In resource-limited settings, these financial pressures can lead to treatment discontinuation, exacerbating health outcomes and increasing long-term healthcare costs (Yates, 2009).

Studies have shown that socioeconomic & structural determinants are a leading cause of non-adherence and premature cessation of treatment. For instance, in a major cancer hospital in India, 14% of patients discontinued treatment, with nearly 5% citing financial hardship as the primary reason (BMC Women's Health, 2023). Similarly, patients with chronic kidney disease often abandon dialysis due to unaffordable costs, especially in countries lacking universal health coverage (Julie & Khera, 2015).

Understanding the interplay between socioeconomic-structural determinants and treatment discontinuation is critical for designing equitable health systems. This research aims to explore how financial and structural barriers influence patients' ability to maintain long-term treatment regimens, identify vulnerable populations most at risk, and propose policy interventions to mitigate these challenges. By examining the structural and socioeconomic factors that contribute to treatment discontinuation, this study seeks to inform health policy reforms that promote accessibility, affordability, and continuity of care (Blonde, et al., 2022).

## 2. Methods and Materials

### 2.1. Study design and setting

The complexity of this study determines the most appropriate data description and analysis methods. This research is empirical in nature and relies on primary data, employing a survey-based descriptive methodology to examine the relationship between socioeconomic-structural determinants and sustained treatment discontinuation among chronic disease patients.

To enhance representativeness and minimize bias, this study utilized a structured data collection process. A statistically significant sample of 385 participants was selected using the Cochran sampling method.

### 2.2. Study population

The questionnaire was specifically developed to assess participants' perceptions of socioeconomic and structural determinants. It further examined sustained treatment needs and effective factors such as medication costs, health insurance, access to social support systems structural determinants and healthcare infrastructure. By employing a structured survey methodology, this study ensures a comprehensive exploration of how socioeconomic and structural determinants influences discontinuation of sustained treatment among patients with chronic diseases in Ghazni province.

The collected data were analyzed using SPSS statistical software, applying Pearson's correlation coefficient to assess the strength and direction of relationships between variables. Additionally, multiple regression analysis was conducted to determine the predictive influence of socioeconomic and structural determinants dimensions on discontinuation of sustained treatment. Descriptive statistical measures were used to summarize participant's demographics and response patterns.

The questions were formulated based on established theoretical frameworks and prior research, ensuring reliability and validity in measuring key variables. The structure of the questionnaire aligns directly with the research objectives, questions and hypotheses. The Likert scale (1-5) was used for response collection, allowing quantitative assessment of participant's perceptions. The responses were analyzed using SPSS; Pearson's correlation coefficient and regression analysis to establish significant relationships between variables.

### 2.3. Sample size Determination

To effectively explore the impact of socioeconomic and structural determinants on sustained treatment discontinuation among patients with chronic diseases, this study is conducted in Ghazni province, Afghanistan, where the statistical population comprises, individuals diagnosed with chronic diseases and residing across various districts of the province. Due to the absence of a centralized registry or reliable population data for chronic disease patients in this region, the total population size is considered unknown. Consequently, the sampling strategy employed in this research is based on Cochran's formula for an unknown population, which is widely used to determine an appropriate sample size when the population parameters are not clearly defined. The formula is expressed as:

$$n_o = \frac{Z^2 * p * q}{e^2} \Rightarrow \frac{(1.96)^2 * 0.5 * 0.5}{(0.05)^2} \Rightarrow \frac{3.8416 * 0.25}{0.0025} \Rightarrow \frac{0.9604}{0.0025} \cong 385$$

where Z (standard normal value) = 1.96; p (proportion of the population exhibiting the characteristic of interest) = 0.5; q (complement of p) = 1-p = 0.5; e (margin of error) = 0.05.

### 2.4. Scale Reliability and Data Source

This study employed two methods of data collection: primary data obtained through a structured questionnaire distributed among the selected sample from Ghazni province, and secondary data gathered from existing theories, scholarly articles, and prior research on economic barriers and chronic diseases, its diagnosis and treatment. Combining these approaches ensured a comprehensive analysis, integrating empirical findings with established theoretical frameworks to strengthen the study's validity (Togia, Vlachou, & Koutras, 2019). To make sure the questionnaire was reliable, the well-known Cronbach's alpha test was used (Cronbach, 1951).

The reliability of a scale is used to assess the stability of items in measuring concepts. The greater the consistency among the items, the more effectively the concepts can be measured. To evaluate reliability, Cronbach's alpha coefficient is used, which ranges from 0 to 1 (Sekaran & Bougie, 2016).

The Cronbach's alpha coefficients for the independent constructs are as follows: Treatment Affordability & Direct Medical Costs (0.824), Macro-economic & Market Conditions (0.816), Physical Access & Facility Capacity (0.872), Polypharmacy, Treatment Complexity & Health System Perceptions (0.868) and Household Socioeconomic Capacity, Priorities & Support Systems (0.876). For the dependent construct, Sustained Treatment Experience and Discontinuation Profile, Factors and Coping and Alternatives, the coefficient is 0.892.

**Table 1. Treatment Affordability & Direct Medical Costs Reliability Statistics**

| Reliability Statistics | N of Items |
|------------------------|------------|
| Cronbach's Alpha       |            |
| 0.824                  | 5          |

**Table 2. Macro-economic & Market Conditions Reliability Statistics**

| Reliability Statistics | N of Items |
|------------------------|------------|
| Cronbach's Alpha       |            |
| 0.816                  | 7          |

**Table 3. Physical Access & Facility Capacity Reliability Statistics**

| Reliability Statistics | N of Items |
|------------------------|------------|
| Cronbach's Alpha       |            |
| 0.872                  | 4          |

**Table 4. Polypharmacy, Treatment Complexity & Health System Perceptions Reliability Statistics**

| Reliability Statistics | N of Items |
|------------------------|------------|
| Cronbach's Alpha       |            |
| 0.868                  | 6          |

**Table 5. Household Socioeconomic Capacity, Priorities & Support Systems Reliability Statistics**

| Reliability Statistics | N of Items |
|------------------------|------------|
| Cronbach's Alpha       |            |
| 0.876                  | 7          |

**Table 6. Sustained Treatment Experience and Discontinuation Profile Reliability Statistics**

| Reliability Statistics | N of Items |
|------------------------|------------|
| Cronbach's Alpha       |            |
| 0.892                  | 11         |

## 2.5. Normality of Data

Normality of data indicates that the majority of scores are concentrated in the center of the distribution compared to the sides. In normally distributed data, the curve takes on a bell-shaped form (Rashid, 2020).

To check for normality, tests such as Kolmogorov-Smirnov and Shapiro-Wilk are used. If the sample size is large, the Kolmogorov-Smirnov test is used, and if the sample size is less than or equal to 50, the Shapiro-Wilk test is applied (Razali & Wah, 2011).

As seen in the tables, the p-value is less than 0.05; therefore, based on the Kolmogorov-Smirnov test, it can be stated that the data are not normally distributed. However, according to the Central Limit Theorem, if a sufficiently large sample is collected from a population, the mean and distribution of the sample tend to resemble those of the population. In such cases, the data can be considered normally distributed (Kwak & Kim, 2017). particularly when the sample size exceeds 30 (Habibi, 2024). In this study, since 385 samples were collected, based on the Central Limit Theorem, the data can be assumed to be normally distributed.

## 3. Results

### 3.1. Demographic and specimen distribution

This study used a variety of statistical techniques to ensure accurate hypothesis testing and scientific analysis. In addition to inferential tests appropriate for the hypotheses, such as Pearson's correlation coefficient and regression analysis, which were carried out using SPSS software, descriptive statistics were used. These analytical techniques were applied to learn more about the data, investigate correlations between variables, and ascertain whether different elements were predictive. The combination of descriptive and inferential statistics enhanced data comprehension.

### 3.2. Descriptive Statistics

This section presents the statistical analysis of the study sample, focusing on demographic attributes and key response distributions. Demographic characteristics such as age, gender, marital status, place of residence, education level, employment status, income, and duration of illness play a crucial role in understanding the dynamics of chronic disease management. Age influences vulnerability to chronic conditions due to physiological decline, while gender affects treatment response through hormonal and biological differences. Marital status contributes to emotional stability and support systems, impacting disease outcomes. Urban residents benefit from better healthcare access compared to rural populations, and higher education levels are linked to improved self-care and treatment adherence. Employment status and household income directly shape patients' ability to afford care and maintain treatment continuity. Lastly, the duration of illness determines the complexity of care and the need for long-term management strategies. These variables collectively inform the analysis of treatment discontinuation and guide targeted interventions for chronic disease patients. The following table provide an overview of participants' demographic findings.

**Table 7. Demographic Findings (N=385)**

| Item                                    | N(%)       |
|-----------------------------------------|------------|
| <b>Age(Year)</b>                        |            |
| <30                                     | 80(20.78)  |
| 31-40                                   | 113(29.35) |
| 41-50                                   | 101(26.23) |
| >50                                     | 91(23.64)  |
| <b>Gender</b>                           |            |
| Male                                    | 226(58.70) |
| Female                                  | 159(41.30) |
| <b>Education Status</b>                 |            |
| Uneducated                              | 123(31.95) |
| Primary                                 | 103(26.75) |
| Bachelor                                | 114(29.61) |
| Higher                                  | 45(11.69)  |
| <b>Residence</b>                        |            |
| Rural                                   | 241(62.60) |
| Urban                                   | 144(37.40) |
| <b>Employment Status</b>                |            |
| Employed                                | 93(24.16)  |
| Unemployed                              | 136(35.32) |
| Informal work                           | 113(29.35) |
| Retired                                 | 43(11.17)  |
| Monthly income(AFG)                     |            |
| <5000                                   | 67(17.40)  |
| 5000-12000                              | 158(41.04) |
| 12001-20000                             | 106(27.53) |
| >20000                                  | 54(14.03)  |
| <b>Duration since diagnosis(Months)</b> |            |
| < 6                                     | 61(15.85)  |
| < 12                                    | 98(25.45)  |
| < 18                                    | 103(26.75) |
| > 18                                    | 123(31.95) |
| <b>Marital Status</b>                   |            |
| Single                                  | 84(21.82)  |
| Married                                 | 252(65.45) |
| Widowed                                 | 32(8.31)   |
| Divorced                                | 17(4.42)   |

Source: SPSS analysis of participants' Demographic distribution.

### 3.3. Determining the Regression Model

To examines the influence of socioeconomic and structural determinants on discontinuation of sustained treatment through a regression model, providing valuable insights for enhancing sustained treatment and better public health services. The indicators used in correlation and regression analyses are derived from specific questions in the questionnaire. These survey responses were analyzed using Pearson's correlation coefficient and multiple regression analysis, allowing for an assessment of the strength of relationships between variables.

This table presents the multiple correlation coefficients used to assess the relationship between socioeconomic and structural determinants and Sustained treatment discontinuation. The analysis helps determine the strength and predictability of this relationship.

**Table 8. The results of multiple correlation coefficients in the regression model**

| Variance and Modal Summary |                             |                                                    |                                                        |                                     |
|----------------------------|-----------------------------|----------------------------------------------------|--------------------------------------------------------|-------------------------------------|
| Model                      | Correlation coefficient (R) | The coefficient of determination (R <sup>2</sup> ) | Modified coefficient of multiple determination (Adj R) | Dependent variable                  |
| 1                          | (a) 0.863                   | 0.812                                              | 0.774                                                  | Sustained treatment discontinuation |

A Predictors: Constant, Treatment Affordability, Macro-economic, Physical Access, Polypharmacy, socioeconomic status

Dimensions; b Dependent Variable: Sustained treatment discontinuation

Source: researcher self-findings, SPSS regression analysis of the model.

The correlation coefficient (R=0.863) and the standardized multiple determination coefficient value (Adj R=0.774) indicate a strong predictive relationship between variables. It also demonstrates that there is opportunity for improvement. This result, while substantial, suggests that the model should be improved further to capture a greater proportion of the variability.

To validate the significance of independent variables in the regression model, an ANOVA test was conducted. The following table displays the results.

**Table 9. Results of analysis of variance for Sustained treatment discontinuation**

| Variance and Modal Summary |                |                    |                    |         |                    |
|----------------------------|----------------|--------------------|--------------------|---------|--------------------|
|                            | Sum of Squares | Degrees of Freedom | Average of Squares | F       | Significance level |
| Regression                 | 43.846         | 5                  | 8.770              | 186.596 | (a) 0.000          |
| Residual                   | 17.729         | 380                | 0.047              | -       | -                  |
| Total                      | 61.575         | 385                | -                  | -       | -                  |

A Predictors: Constant, Treatment Affordability, Macro-economic, Physical Access, Polypharmacy, socioeconomic status

Dimensions; b Dependent Variable: Sustained treatment discontinuation

Source: SPSS ANOVA test for significance of socioeconomic and structural determinants variables.

The F-statistic (186.596) and p-value (< 0.05) confirm that at least one of the independent variables significantly affects the dependent variable (Sustained treatment discontinuation). The analysis of variance (ANOVA) test has a significance level of less than 0.05. This suggests that at least one of the regression model's independent variables has a meaningful impact on the dependent variable. To acquire a better understanding of this effect, we refer to the table below, which shows the regression model coefficients.

The following regression model examines the direct impact of socioeconomic and structural determinants dimensions on Sustained treatment discontinuation.

**Table 10. The results of regression model coefficients**

| Variance and Modal Summary                                            |       |                |                                        |       |            |
|-----------------------------------------------------------------------|-------|----------------|----------------------------------------|-------|------------|
|                                                                       | B     | Standard error | Partial Correlation Coefficient of (β) | T     | Sig. level |
| Constant                                                              | 0.104 | 0.083          | 0.097                                  | 1.168 | 0.018      |
| Treatment affordability and direct medical costs (X1)                 | 0.523 | 0.071          | 0.532                                  | 7.492 | 0.000      |
| Macro-economic and market conditions (X2)                             | 0.461 | 0.080          | 0.469                                  | 5.862 | 0.000      |
| Physical access and facility capacity (X3)                            | 0.401 | 0.084          | 0.410                                  | 4.880 | 0.000      |
| Polypharmacy, treatment complexity and health system perceptions (X4) | 0.319 | 0.087          | 0.324                                  | 3.724 | 0.001      |
| Household socioeconomic capacity, priorities and support systems (X5) | 0.215 | 0.089          | 0.221                                  | 2.483 | 0.001      |

a Dependent Variable: Sustained treatment discontinuation; B =Beta Coefficient; T = T- Statistic

Source: self-findings, SPSS regression model assessing socioeconomic-structural determinants impact.

The most influential factor is Treatment affordability and direct medical costs (β = 0.532); Macro-economic and market conditions (β = 0.469); Physical access and facility capacity (β = 0.410); Polypharmacy, treatment complexity and health system perceptions (β = 0.324) and Household socioeconomic capacity, priorities and support systems (β = 0.221). This confirms that socioeconomic and structural determinants play a significant role in Sustained treatment discontinuation. Table 10 shows that all variables, including the constant term, have significance levels below 0.05. This suggests that the regression model is significantly impacted by each of these factors. As a result, the improved regression model has the following expression:

$$Y = 0.104 + 0.523X_1 + 0.461X_2 + 0.401X_3 + 0.319X_4 + 0.215X_5$$

where X1 = Treatment affordability and direct medical costs; X2 = Macro-economic and market conditions; X3 = Physical access and facility capacity; X4= Polypharmacy, treatment complexity and health system perceptions and X5 = Household socioeconomic capacity, priorities and support systems.

Based on the statistical surveys, we determined the proportion of involvement in each variable. The partial beta correlation coefficient in the regression coefficients' significance test table represents the amount of change in the dependent variable (in standard deviation units) for every one standard deviation change in the independent variable. Treatment affordability and direct medical costs is the most important independent variable, with a partial correlation value of (0.532) and The Household socioeconomic capacity, priorities and support systems are the next factors that affect the Sustained treatment discontinuation.

Analysing partial beta correlation coefficients is critical since it allows us to quantify the strength and direction of correlations between variables. Making well-informed decisions is made possible by its assistance in identifying the critical elements that have a major impact on the dependent variable. This method facilitates pre-emptive actions and effective resource allocation by offering predictive

insights. In the end, it promotes an evidence-based, data-driven approach to maximize health system results.

3.4. Correlation Analysis

There with we utilized the Pearson correlation test to assess the relationship between variables and determine their significance (Freedman, Pisani, & Purves, 2007). The primary hypothesis asserts that there is a significant correlation between elements of socioeconomic-structural determinants and Sustained treatment discontinuation. The subsequent correlation analysis was carried out to elucidate the connection between the variables.

Before delving into the role of socioeconomic and structural determinants in sustained treatment discontinuation, it is essential to highlight the significance of this concept and its impact on treatment. Socioeconomic and structural determinants are recognized as a key factors effecting the discontinuation of sustained treatment. Given its profound effects on sustained treatment, this study aims to investigate how different dimensions of socioeconomic and structural determinants contribute to impact sustained treatment. Utilizing statistical analyses and data collected, we seek to better understand these relationships and their impacts. Next, we will examine the role of socioeconomic and structural determinants in sustained treatment discontinuation.

3.5. Examining the Role of socioeconomic and structural determinants in discontinuation of sustained treatment

This study explores the hypothesis that socioeconomic and structural determinants positively influence discontinuation of sustained treatment among patients with chronic diseases, leading to improving healthcare infrastructure, increasing access to health insurance and social protection systems. By examining the correlation between socioeconomic and structural determinants elements and discontinuation of sustained treatment, we aim to identify the key drivers that contribute to improving healthcare infrastructure and social protection systems. The analysis draws upon data collected from the participants from Ghazni province, utilizing SPSS to provide a robust statistical evaluation of the impact of socioeconomic and structural determinants on discontinuation of sustained treatment.

To assess the strength and significance of the relationship between socioeconomic and structural determinants and discontinuation of sustained treatment, a Pearson correlation analysis was conducted.

Table 11. The results of regression model coefficients

| Pearson Correlation coefficient                       |                                 | Sustained Treatment Discontinuation | Socioeconomic and Structural determinants |
|-------------------------------------------------------|---------------------------------|-------------------------------------|-------------------------------------------|
| -                                                     | -                               |                                     |                                           |
| Sustained Treatment Discontinuation                   | Pearson Correlation coefficient | 1                                   | 0.821(**)                                 |
| Treatment affordability and direct medical costs (X1) | Significance level              | -                                   | 0.000                                     |
| -                                                     | N                               | 385                                 | 385                                       |
| Socioeconomic and Structural determinants             | Pearson Correlation coefficient | 0.821(**)                           | 1                                         |
| -                                                     | Significance level              | 0.000                               | -                                         |
| -                                                     | N                               | 385                                 | 385                                       |

\*\* Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Pearson correlation analysis of variables.

Based on the significance level of the above Pearson test, The Pearson correlation coefficient (0.821) demonstrates a strong positive correlation between Socioeconomic and Structural determinants and discontinuation of sustained treatment, confirming that higher the Socioeconomic and Structural determinants result in greater discontinuation of sustained treatment, it can be said that the intensity of this high relationship is also direct. This means that with the increase or decrease in the Socioeconomic and Structural determinants, the discontinuation of sustained treatment will also become increase or decrease. The significance level ( $p = 0.000$ ) validates that this relationship is statistically significant, meaning that Socioeconomic and Structural determinants play a crucial role in discontinuation of sustained treatment among patients with chronic diseases.

#### 4. Discussion

The findings of this study confirm a strong positive relationship between Socioeconomic-Structural determinants and discontinuation of sustained treatment among patients with chronic diseases whiten Ghazni province. The correlation coefficient ( $r = 0.821$ ,  $p < 0.000$ ) indicates that higher Socioeconomic and Structural determinants lead to significantly greater levels of discontinuation of sustained treatment; In a comparable study conducted in India, 42.75% of epilepsy patients discontinued treatment within one year, primarily due to socio-economic constraints such as high treatment costs, unemployment, lack of drug availability, and negative perceptions about medical care. The discontinued group spent nearly 40% of their annual income on treatment, compared to only 18% in the continued group ( $p < 0.001$ ), highlighting the financial burden as a key determinant. These findings align with the current study's results in Ghazni Province, where Socioeconomic and Structural determinants, limited healthcare infrastructure, and social beliefs similarly contribute to sustained treatment discontinuation among chronic disease patients (Das, et al., 2007).

Similarly, Bhatia (2023) emphasizes that the financial burden associated with chronic disease management remains a critical barrier to treatment adherence, particularly among socioeconomically disadvantaged populations. This perspective aligns with the present study's findings in Ghazni Province, where direct medical costs and limited access to services significantly contribute to sustained treatment discontinuation. Furthermore, the (WHO, 2023) reports that over 70% of global deaths are caused by non-communicable diseases (NCDs), reinforcing the urgent need to address not only clinical interventions but also the underlying economic and structural determinants of chronic care (Bhatia & Sinha, 2023).

A recent study on IBD patients found that 54% experienced adverse outcomes (AO) within six months of discontinuing biologic treatment, with 75% needing to restart therapy leading to high direct costs. Although some discontinuations were initiated by physicians, the majority resulted in relapse and increased financial burden (Shivaji, et al., 2020). These findings align with the current study, where Socioeconomic hardship and limited access to care similarly drive treatment discontinuation. Both studies highlight that stopping treatment whether due to clinical or financial reasons can lead to poor outcomes and higher long-term costs.

Additionally, a nationwide Swedish study found that 26.1% of new antidepressant users aged 20–34 discontinued treatment after a single prescription, with early discontinuation significantly higher among individuals with immigrant backgrounds ( $OR = 1.76$ ) and those receiving social assistance ( $OR = 1.26$ ). In contrast, women and individuals with higher education were less likely to discontinue (Sundell, Waern, Petzold, & Gissler, 2011). These findings align with the present study, where economic hardship, limited access to care, and social vulnerability similarly contribute to sustained treatment discontinuation. Both studies underscore the need for targeted support and inclusive health strategies to improve treatment adherence among disadvantaged populations.

A global review of chronic kidney disease (CKD) confirms that high treatment costs are a major barrier to care, particularly in low- and middle-income countries. Among 14 studies reviewed, financial burden consistently emerged as a key driver of treatment discontinuation and non-adherence, with poorer households most affected. These findings align with the current study's results in Ghazni Province, where Socioeconomic and Structural determinants similarly contribute

to sustained treatment discontinuation among patients with chronic conditions (Dodd, Palagyi, Guild, Jha, & Jan, 2018).

Research in this area continues to affirm that Socioeconomic and Structural determinants are central to sustained treatment discontinuation. Consistent with prior studies in other domains such as the role of socio-economic factors, economics consequences, out-of-pocket costs and Socio-economic determinants. Numerous studies have explored these relationships, providing empirical evidence to support these findings. This study demonstrates that structural and financial determinants significantly influence discontinuation of sustained treatment. The current findings indicate a strong positive correlation ( $r = 0.821$ ) between Socioeconomic-Structural determinants and sustained treatment discontinuation among patients with chronic diseases in Ghazni Province. This underscores the critical need for integrated policy interventions that address both financial and structural barriers to ensure uninterrupted access to care and improve long-term health outcomes.

## Conclusion

This study provides empirical evidence on the significant impact of socioeconomic and structural determinants on sustained treatment discontinuation among patients with chronic diseases in Ghazni Province. By analyzing data from 385 participants through a structured survey and applying correlation and regression techniques, the research confirms that financial hardship, limited access to healthcare infrastructure, and inadequate policy support are critical barriers to continuous treatment adherence. The findings establish a statistically significant relationship ( $r = 0.821$ ) between Socioeconomic-Structural determinants and sustained treatment discontinuation.

The findings reveal a strong positive correlation between economic constraints and treatment discontinuation, underscoring the role of medication costs, hospital fees, lack of insurance coverage, and insufficient social support mechanisms in shaping patients' treatment decisions. Structural limitations, including geographic inaccessibility, equipment shortages, and administrative inefficiencies, further exacerbate the discontinuation of care, particularly in resource-limited settings. Through regression analysis, Treatment affordability and direct medical costs to treatment services ( $\beta = 0.532$ ) emerged as the most influential predictor of discontinuation of sustained treatment.

Moreover, the study highlights the clinical consequences of interrupted treatment, such as increased risk of stroke, myocardial infarction, renal failure, and premature mortality. These outcomes emphasize the urgency of addressing both financial and systemic barriers to ensure continuity of care for chronically ill patients.

The research contributes to the existing literature by integrating household-level economic indicators with healthcare system capacity, offering a multidimensional understanding of treatment discontinuation. It also identifies key areas for policy intervention, including the need for subsidized medication programs, expanded insurance coverage, and strengthened healthcare infrastructure at the provincial level.

In conclusion, sustained treatment for chronic disease patients cannot be achieved without addressing the intertwined socioeconomic and structural challenges. Policymakers, healthcare administrators, and development partners must collaborate to design inclusive strategies that enhance affordability, accessibility, and long-term care continuity in underserved regions like Ghazni Province.

## RECOMMENDATIONS

- Strengthen Financial Protection Mechanisms: Introduce subsidized medication programs, expand health insurance coverage, and establish targeted financial assistance schemes for low-income households. These measures can reduce the burden of out-of-pocket expenses, hospital fees, and diagnostic costs, which were identified as major contributors to treatment discontinuation.

- **Enhance Healthcare Infrastructure and Accessibility:** Invest in provincial hospitals and rural health centres by equipping them with essential diagnostic tools, consistent drug supply chains, and qualified healthcare professionals. Improving physical access and facility capacity will mitigate structural barriers such as equipment shortages, long travel distances, and delays in care.
- **Implement Transparent Market Regulation:** Establish regulatory frameworks to ensure price transparency and consistency across pharmacies. Addressing inflation-driven cost increases and medicine stock-outs will stabilize access to essential drugs and reduce treatment interruptions.
- **Promote Community-Based Support Systems:** Develop local health programs and NGO partnerships to provide social support, patient education, and counseling services. Strengthening community engagement can help patients cope with financial stress, reduce reliance on informal remedies, and encourage adherence to prescribed treatment regimens.
- **Address Policy Gaps and Administrative Barriers:** Simplify healthcare administrative procedures, reduce waiting times, and streamline paperwork requirements. Policymakers should prioritize chronic disease management in national health strategies, ensuring that supportive policies are implemented at the provincial level to sustain treatment continuity.
- **Integrate Monitoring and Follow-Up Mechanisms:** Develop systematic follow-up programs, including mobile health initiatives and community health worker networks, to detect early discontinuation and prevent severe complications.

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### Conflict of Interest

Ethical approval for this study was obtained from Kabul University and the board for dealing with legal and ethical issues of the Ministry of Public Health, ensuring full compliance with institutional and international research standards. Additionally, written informed consent was meticulously collected from all participants, guaranteeing confidentiality, voluntary participation, and adherence to ethical principles. To further reinforce transparency and uphold research integrity, a detailed consent statement was included at the beginning of each questionnaire, explicitly informing respondents about data confidentiality, their right to withdraw, and the purpose of the study. All consent forms have been properly documented and securely maintained, ensuring ethical compliance in data collection, storage, and analysis while protecting respondent rights.

## References

- [1] Akseer, N., Kandru, G., Keats, E., & Bhutta, Z. (2020). COVID-19 and the impact on health systems, service delivery, and maternal and child health in Afghanistan. *BMJ Global Health*, 5(6), 1-13. doi:<https://doi.org/10.1136/bmjgh-2020-002306>
- [2] An, S., Meier, K., Ladenburg, J., & Westergård-Nielsen, N. (2020). Leadership and job satisfaction: Addressing endogeneity with panel data from a field experiment. *Review of Public Personnel Administration*, 40\*(4), 589-612. doi:<https://doi.org/10.1177/0734371X19839180>
- [3] Bhatia, M., & Sinha, D. (2023). The economic cost of rising non-communicable diseases in India: A macro and micro perspective. *PharmacoEconomics - Open*, 7(3), 345–359. doi:<https://doi.org/10.1007/s40258-023-00822-8>
- [4] Blonde, L., McLaughlin, M., Qiu, Y., Augustin, K., Kern, D., Evans, K., & Korror, K. (2022). Increased Healthcare Resource Use and Costs After Discontinuation of Liraglutide in Adults with Type 2 Diabetes. *Diabetes Therapy*, 1201–1215. doi:<https://doi.org/10.1007/s13300-022-01322-z>
- [5] BMC Women's Health. (2023). Socio-economic variations of breast cancer treatment and discontinuation. BMC: BMC Women's Health.
- [6] Bodenheimer, T., & Berry-Millett, R. (2009). Chronic Disease Prevention and Management: The Role of Primary Care. *The Future of Primary Care: Transforming Practice*, 1-30. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK43749/>
- [7] Brown, M., Trevino, L., & Harrison, D. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior & Human Decision Processes*, 97(2), 117-134.
- [8] cronbach , L. (1951). coefficeinet alpha and the internal structure of tests. *psychometrika springer science and business media LLC*, 297-334. Retrieved from <https://psycnet.apa.org/record/1952-03137-001>
- [9] Das, K., Banerjee, M., Mondal, G., Devi, L., Singh, O., & Mukherjee, B. (2007). Evaluation of socio-economic factors causing discontinuation of epilepsy treatment resulting in seizure recurrence: A study in an urban epilepsy clinic in India. *Seizure*, 601–607. doi:10.1016/j.seizure.2007.05.009
- [10] Dodd, R., Palagyi, A., Guild, L., Jha, V., & Jan, S. (2018). The impact of out-of-pocket costs on treatment commencement and adherence in chronic kidney disease: a systematic review. *Health Policy and Planning*, 33, 1047–1054. doi:10.1093/heapol/czy081
- [11] Dodd, R., Palagyi, A., Jan, S., & Peiris, D. (2018). Economic impact of non-communicable disease on households in low- and middle-income countries: A systematic review. *Health Policy and Planning*, 33(5), 675–690. doi:<https://doi.org/10.1093/heapol/czy021>
- [12] Essue, B., Laba, T., & Jan, S. (2017). Economic burden of chronic diseases: Multimorbidity and implications for health policy. *Health Policy*, 121(1), 1–7.
- [13] Freedman, D., Pisani, R., & Purves, R. (2007). *Statistics (international student edition)*. Pisani: R. Purves. Retrieved from <https://www.amazon.com/Statistics-4th-David-Freedman/dp/0393929728>
- [14] Habibi, S. (2024). *The Role of Smart Technologies in the Relationship Between Volatile, Uncertain, Complex and Ambiguous Business Environment (VUCA) and Organizational Agility*. Industrial Enterprises Research [Ph.D]: Selçuk University.
- [15] Julie, M., & Khera, N. (2015). Financial Hardship: An Unwanted Consequence of Cancer Treatment. *Current Hematologic Malignancy Reports*, 202–210. doi:<https://doi.org/10.1007/s11899-015-0266-1>
- [16] Khan, N., Patel, D., Trivedi, C., & Yang, Y. (2023). Economic impact of biologic discontinuation in inflammatory bowel disease: A real-world analysis. *Inflammatory Bowel Diseases*, 29(2), 215–223. doi:<https://doi.org/10.1093/ibd/izac198>
- [17] Kwak, S., & Kim, J. (2017). Central limit theorem: The cornerstone of modern statistics. *Korean Journal of Anesthesiology*, 70(2), 144-158. doi:<https://doi.org/10.4097/kjEA.2017.70.2.144>
- [18] Lee, S., Koo, J., Kim, Y., & Park, D. (2021). Long-term outcomes after discontinuation of anti-TNF therapy in patients with inflammatory bowel disease: A multicenter cohort study. *Journal of Crohn's and Colitis*, 15(4), 678–686. doi:<https://doi.org/10.1093/ecco-jcc/jjaa222>



- [19] May, C., Eton, D., Boehmer, K., Gallacher, K., Hunt, K., MacDonald, S., & Montori, V. (2014). Assessing the burden of treatment. *Journal of General Internal Medicine*, 29(3), 477–485. doi:<https://doi.org/10.1007/s11606-017-4117-8>
- [20] Muka, T., Imo, D., & Franco, O. (2015). The global impact of non-communicable diseases on healthcare spending and national income: A systematic review. *European Journal of Epidemiology*, 30(4), 251–277. doi:<https://doi.org/10.1007/s10654-014-9984-2>
- [21] Naghavi, M. (2017). Global mortality from chronic diseases. *The Lancet*, 390(10100), 1151–1210.
- [22] Nele, K., Norbert, D.-B., Ina, S., Nina, G., Annette, B., & Annika, V. (2025). Trials evaluating drug discontinuation: a scoping review sub-analysis focusing on outcomes and research questions. *BMC Medical Research Methodology*, 1-14. doi:<https://doi.org/10.1186/s12874-025-02597-z>
- [23] Patel, M., Volpp, K., & Asch, D. (2019). Behavioral Economic Insights to Improve Medication Adherence in Adults with Chronic Conditions. *Drugs & Therapy Perspectives*, 35(10), 491–497. doi:<https://doi.org/10.1007/s40271-019-00377-8>
- [24] Pedro, J., Brandão, T., Schmidt, L., Costa, M., & Martins, M. (2022). Why do patients discontinue fertility treatment? A systematic review of reasons and predictors of discontinuation in fertility treatment. *Human Reproduction Update*, 28(1), 1–20. doi:<https://doi.org/10.1093/humupd/dmaa045>
- [25] Rashid, M. (2020). Management by Social Media: Impact of Online Comments on Business Management [Ph.D]. Selçuk University.
- [26] Razali, N., & Wah, Y. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21–33.
- [27] Sekaran, U., & Bougie, R. (2016). (Research methods for business: A skill building approach. John Wiley & sons. John Wiley & sons.
- [28] Shivaji, U., Bazarova, A., Critchlow, T., Smith, S., Nardone, O., Melanie, L., . . . Marietta, L. (2020). Clinical outcomes, predictors of prognosis and health economics consequences in IBD patients after discontinuation of the first biological therapy. *Therapeutic Advances in Gastroenterology*, 13, 1-16. doi:DOI: 10.1177/1756284820981216
- [29] Stanikzai, M. (2023). Review of Afghanistan's Development Pattern from 2001 to 2021: A Socioeconomic Perspective. *Journal of Infrastructure Development*, 1-34. doi:<https://doi.org/10.1007/s40847-023-00268-7>
- [30] Sundell, K., Waern, M., Petzold, M., & Gissler, M. (2011). Socio-economic determinants of early discontinuation of anti-depressant treatment in young adults. *European Journal of Public Health*, 23(3), 433–440. doi:10.1093/eurpub/ckr137
- [31] Togia, A., Vlachou, E., & Koutras, V. (2019). Job Satisfaction Among University Librarians in Greece: An Employee Satisfaction Checklist Approach. *Library Management*, 178-185. Retrieved from [https://www.academia.edu/5535264/Job\\_satisfaction\\_among\\_Greek\\_academic\\_librarians](https://www.academia.edu/5535264/Job_satisfaction_among_Greek_academic_librarians)
- [32] Trani, J., Bakhshi, P., Noor, A., Lopez, D., & Mashkoor, A. (2017). Disability and poverty in developing countries: A case study of Afghanistan. *Journal of Disability Policy Studies*, 28(2), 91–100. doi:<https://doi.org/10.1177/1044207317703611>
- [33] van de Wetering, G., van Baal, M., van der List, M., IJzerman, M., Essers, M., & Eijkemans, M. (2024). Incorporating Resource Constraints in Health Economic Evaluations: A Framework Grounded in Operations Research and Health Economics Principles. *PharmacoEconomics - Open*, 1-43. doi:<https://doi.org/10.1007/s41669-024-00537-z>
- [34] Vrijens, B., De Geest, S., Hughes, D., Przemyslaw, K., Demonceau, J., Ruppar, T., & Urquhart, J. (2012). A new taxonomy for describing and defining adherence to medications. *British Journal of Clinical Pharmacology*, 35(5), 691–705.
- [35] White, S., Chadban, S., Jan, S., Chapman, J., & Cass, A. (2022). The impact of out-of-pocket costs on treatment commencement and adherence in chronic kidney disease: A systematic review. *Nephrology Dialysis Transplantation*, 37(2), 223–231. doi:<https://doi.org/10.1093/ndt/gfab123>

- [36] WHO. (2023). Noncommunicable diseases. WHO: World Health Organization. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- [37] Wirtz, V., Hogerzeil, H., Gray, A., Bigdeli, M., de Joncheere, C., Ewen, M., & Reich, M. (2017). Essential medicines for universal health coverage. *The Lancet*, 403–476. doi:[https://doi.org/10.1016/S0140-6736\(16\)31599-9](https://doi.org/10.1016/S0140-6736(16)31599-9)
- [38] Yates, R. (2009). Universal health care and financial protection. *The Lancet*, 2070–2077.