



ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE

**The magnitude of cluster c personality disorders and associated
factors among psychiatric outpatients at Saint Paul's Hospital
Millennium Medical College, Addis Ababa, Ethiopia**

By: Mahelet Berhanu Menkir

January, 2024

Addis Ababa, Ethiopia

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The magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia

Investigator: Mahelet Berhanu (MD)

Advisors: Selamawit Alemayehu (MD, MPH, Assistant Professor)

Asrat Habtegiorgis (MD, Assistant Professor)

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Addis Ababa, Ethiopia

Declaration

I, Mahelet Berhanu, do hereby certify that the contents of this research work are the results of my own original work and that they have never been presented for any other degree in any other institution, and that all sources of materials used for the thesis have been duly acknowledged.

Name of the Student: _____

Signature: _____

Date: _____

Place: Department of Psychiatry

Saint Paul's Hospital Millennium Medical College

Approval of Advisors

Name of Advisor: _____

Signature: _____

Date: _____

Name of co-advisor: _____

Signature: _____

Date: _____

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Abstract

Background: Personality disorders (PDs) are complex sets of mental disorders and are characterized by pervasive and enduring patterns of thinking and behaviours. Personality disorders are generally common, with cluster C personality disorders being more prevalent than other clusters in some clinical settings. Cluster C personality disorders are shown to be as severe as cluster B personality disorders in terms of comorbidity, suicidality, and functional impairment. However, information regarding their prevalence and associated factors among psychiatric patients remains limited.

Objectives: To assess the magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, 2023

Methods: An institution-based, cross-sectional study was conducted from October 1st to November 30th, 2023 among 422 patients selected via systematic random sampling technique. Cluster C personality disorders were assessed using the Personality Diagnostic Questionnaire-4+. Data were entered and analyzed using Statistical Package for Social Sciences version 26. Binary and multiple logistic regression analyses were employed to identify factors associated with personality disorders. Odds ratios (OR) with 95% confidence interval (CI) were computed, and a p-value <0.05 was considered significant.

Results: A total of 412 outpatients participated in this study, giving a response rate of 97.6%. Males had slight preponderance, constituting 53.6% of all. Patients' age ranged from 18 to 60 with a median age (interquartile range) of 30 (24–36.75) years. The overall magnitude of cluster C personality disorder was 35.4% (95%CI=30.8–40.1%). Avoidant PD was the most common (100/68.5%) of the cluster C personality disorders. Obsessive-compulsive PD and dependent PD occurred in 62 (42.5%) and 39 (26.7%) of the patients, respectively. Multiple regression analysis showed that being female [AOR=95%CI= 1.67(1.03,2.72)], having higher educational status [AOR(95%CI)= 3.57(1.18,10.79)], being unemployed [AOR(95%CI) =1.90(1.20,3.01)], having positive family history of mental illness [AOR(95%CI) = 2.24(1.31,3.83)]. and poor social support [AOR(95%CI) = 1.84(1.05,3.23)] were associated with cluster C personality disorder among patients.

Conclusion and Recommendation: More than one-third (35.4%) of outpatients had cluster C personality disorders, which were associated with female sex, higher educational status, unemployment, positive family history of mental illness, and poor social support. Thus, efforts should be exerted at different levels to screen for these disorders to tailor individualized therapy, thereby improving overall outcomes.

Keywords: Cluster C personality disorder, Avoidant personality disorder, Obsessive compulsive personality disorder, Dependent personality disorder, Mental illness, Outpatients, SPHMMC, Ethiopia

Acronyms /Abbreviations

BD	Bipolar disorder
CCPD	Cluster C Personality Disorders
DSM	Diagnostic and Statistical Manual on Mental Disorder
OSSS	Oslo Social Support Scale
PD	Personality Disorder
PDQ-4+	Personality Diagnostic Questionnaire Fourth Edition Plus
SCID	Structured Clinical Interview for DSM-III-R Axis-II Disorders
SPHMMC	St. Paul's Hospital Millennium Medical College
SPSS	Statistical Package for Social Sciences
SUD	Substance Use Disorder

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1. Introduction

1.1 Background

A personality disorder (PD) is a complex mental disorder that is defined by the Diagnostic and Statistical Manual on Mental Disorders Fifth Edition Text Revised (DSM-5 TR) as an enduring pattern of inner experience and conduct that significantly deviates from the cultural expectations of the person, starts in adolescence or early adulthood, is pervasive and rigid, is stable over time, and causes distress or impairment (1). The DSM-5 TR classifies into three clusters, namely A, B, and C with an additional category, which represents other personality disorders (1). Moreover, PD is defined by the International Classification of Diseases (ICD-11) as a major disruption in an individual's characterological constitution and behavioral tendencies, typically involving multiple dimensions and almost always linked to significant personal and social disruption(2).

Cluster A consists of strange and eccentric features and includes paranoid, schizoid, and schizotypal personality disorders. Cluster B is characterized by personalities that are dramatically emotional and unstable; antisocial, borderline, histrionic, and narcissistic personality disorders are included in this category. Cluster C personality disorders include avoidant, dependent, and obsessive-compulsive personality disorders (OCPD), which are frequently characterized by anxious and apprehensive personalities (1). According to DSM 5 TR, avoidant personality disorder represents a pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation, dependent personality disorder is defined as a pattern of clinging behavior and submissiveness related to an excessive need to be taken care of and obsessive-compulsive personality disorder is defined as a pattern of preoccupation with perfectionism, orderliness, and control (3).

PDs are linked to an increase in psychiatric morbidity and social dysfunction and are significant clinical entities (3). PDs represent a significant public health concern in terms of functional impairment and widespread use of mental and general health care (4,5). They are among the most common mental disorders in the general population, with reported prevalence in Western societies largely varied from 6.1% in the general population (6) to as much as 43% in psychiatric patients (7). The magnitude of personality disorders among psychiatric patients was also observed to vary from 31.4% to 45.5% (8). In Ethiopia, the corresponding prevalence of cluster B personality disorders of psychiatric outpatients was high, standing at 23.19% (9).

Cluster C Personality disorders (CCPDs), including avoidant PD, dependent PD, and obsessive-compulsive PD, are marked by anxiety and fear behaviors, and are grouped because of common patterns in symptomatology and shared genetic and environmental liability factors (10). Cluster C personality disorders are common in certain settings, affecting 17.5% of the female population (11) and 6% of the general population, which was higher than that of other clusters (5.7% for Cluster A and 1.5% for Cluster B) (12).

Diagnosing co-existing personality disorders in psychiatric patients is clinically beneficial because of the association of PDs with the clinical course and overall prognosis of the index mental problem (13). However, the implementation of routine screening has remained inconsistent, and the therapeutic approach lacks focus on factors that influence the magnitude of personality disorders. This was largely because of a lack of adequate information on the determinants of this particular PDs from Ethiopian context.

1.2 Statement of the problem

Personality disorders represent a significant public health concern as they cause serious functional impairment and widespread use of health care services (4,5). PDs are among the most frequent mental disorders (6). The magnitude of the personality disorders among psychiatric patients was also observed to vary from 31.4% to 45.5% (8). Cluster C personality disorders are common in certain settings, affecting 17.5% of the female population (11) and 6% of the general population, which was higher than that of other clusters (5.7% for Cluster A and for 1.5% Cluster B) (12).

Individuals with personality disorders often face difficulties in their relationships with their social environment and have a high tendency to engage in suicidal attempts and harmful behaviours. As a result, individuals with personality disorders are prone to premature deaths (14). Specifically, CCPDs were shown to be associated with delayed response to short-term and long-term treatment as well as an unfavorable outcome among psychiatric patients (15,16). Additionally, they compromise the health-related quality of life among the patients in addition to the substantially higher resource utilization and healthcare costs (17). CCPDs are associated with high rates of comorbidity, suicidality, childhood traumatization, and functional impairment (18). This can even be assumed to be worrisome among patients with CCPDs, which has been observed to worsen over time if they are not handled appropriately (19). Despite the documented importance of diagnosing these groups of disorders, adequate attention is not being paid by practitioners in their daily activities, and clinicians are

sometimes reluctant to screen them, especially in developing countries (20,21). Moreover, owing to the ego-syntonic nature of personality disorder (that is, it may not be considered problematic by the individual) (1), patients usually do not complain about the underlying PDs during clinical visits. And such under-management substantially adds to a multidimensional negative impact, which would overshadow the underlying psychopathology.

Cluster C personality disorders such as avoidant personality disorder (APD) are often overlooked variants of personality disorders (22,23). Partially due to the widely-held assumption that cluster c is milder than other clusters, most scholars have centered on cluster B PDs (especially borderline PD) (18). However, it has been indicated in previous literatures that cluster C PDs are as severe as cluster B PDs in terms of severity measures, including comorbidity, suicidality, childhood traumatization, and functional impairment (18). Besides, cluster C PDs were incriminated to adversely impact treatment outcomes for binge eating disorder and attrition rates for anorexia nervosa (24).

The application of modern form of counseling and psychotherapy including dialectical behavior therapy and cognitive-behavioral therapy as a treatment of personality disorders has not been widely used in Ethiopia (25). Thus, unsurprisingly, personality disorder screening is not yet the standard of care at psychiatric clinics in the current study setting and presents operational challenges that need to be addressed. These caveats reinforce the need to capture the contextual magnitude of personality disorders among patients seeking psychiatric care on top of the insufficiently described epidemiology of personality disorders and the markedly heterogeneous report (26). So, the purpose of this study is to assess the magnitude of personality disorders (particularly CCPD) and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia.

1.3 Significance of the study

The fact that diagnosing personality disorders among patients with psychiatric problems helps in the proper management and treatment of the patient's mental health issues, this study is hoped to be of great importance. Therefore, the findings of this study will help the beneficiaries for early identification and strict follow-up of mental health issues and maximize attention to the disorders. It will also help concerned stakeholders such as psychiatrists and psychologists to devise some tailored psychotherapeutic interventions, considerate of the pervasive PDs in their treatment plan. Moreover, it will serve other local health policymakers to have a contextual picture regarding the prevalence of cluster C

personality disorders and associated factors among psychiatric patients and to integrate user-friendly screening modalities into the existing guidelines and therapeutic programs. Finally, the findings of this study could serve as an additional database for future research undertakings focusing on the subject matter.

2. Literature Review

2.1 Prevalence of personality disorders among psychiatric outpatients

Comorbidity of personality disorders (PDs) including CCPDs and other psychiatric disorders is common in clinical practice as indicated by previous literatures. For instance, a cross-sectional epidemiological study was conducted by Casadio et al. among 320 Italian outpatients, using SCID-II (Structured Clinical Interview for DSM-IV Axis II PDs) and SOGS (South Oaks Gambling Screen). In these group of patients, the authors documented a high percentage (62.2%) of PDs (27).

Wang and coworkers in Shanghai, China, carried out a cross-sectional investigation with 1,497 patients. The Chinese authors used the Personality Diagnostic Questionnaire, Fourth Edition Plus (PDQ-4+) to screen for PDs, while using the SCID-II to interview patients. In this investigation, patients with psychotic disorders who were well over one-third (37%) of the total population met the requirements for at least one PD. On the other hand, nearly half (46%) of patients with non-psychotic illnesses met at least one PD (28).

As a continuation of the Thai Study of Affective Disorder (THAISAD) research, Wongpakaran et al. attempted to investigate the personality disorders (PDs) diagnosed in patients with depressive disorders. Out of the 85 individuals studied cross-sectionally, 40% had one, 77% had at least one PD, and 60% had two or more PDs (mixed cluster). Borderline PD (20%) and obsessive-compulsive PD (10.6%) were the most commonly identified PDs. In contrast, avoidant PD was less prevalent. When compared to the results of earlier, comparable investigations, Cluster A and Cluster C made up the common mix in the mixed cluster (29).

In Norway, Langås et al. sampled 61 consecutively admitted patients with substance use disorders (SUDs), with no previous history of specialized treatment. The authors assessed the patients with the Structured Clinical Interview for DSM-IV Axis II Personality Disorders. Forty-six percent of the SUD patients had at least one PD (16% antisocial; 13% borderline; and 8% paranoid, avoidant, and obsessive-compulsive, respectively). Cluster C disorders were as prevalent as Cluster B disorders (30).

Sanderson et al. studied a total of 347 patients with an anxiety disorder as their primary diagnosis. The authors discovered that 35% of all patients had at least one personality disorder in their medical records. More precisely, personality disorders were most frequently found in people with social phobia (61%), followed by generalized anxiety disorder (49%).

Only 12% of patients with simple phobias had a personality disorder identified (27). A cross-sectional observational study including 100 mental patients with alcohol abuse was carried out in South India, where 48 (48%) of the individuals had PDs of some kind (31).

In Canada, Zikos et al. studied 165 patients with alcohol use disorders using Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Personality Disorder (SCID-II). The authors observed cluster B PD among 32% and other PD among 27% of the patients (32). On the other hand, Haw and others identified personality in 45.9% of British patients with deliberate self-harm (33).

In a sample of 62 (out of 115) adolescents treated for personality disorders, Hauber et al., did an assessment pre- and post-treatment using the Structured Clinical Interview for DSM personality disorders and the Symptom Check List 90. During pre-treatment, 91.8% of the patients had one or more personality disorders while only 35.4% had the same at post-treatment phase (34).

Saini et al. carried out a cross-sectional study on personality traits in psychiatric patients of a tertiary hospital in an over one-year period. Among the 525 subjects included, the prevalence of PD traits and PDs was 56.3% and 4.2%, respectively. The severity of personality pathology was highest for mixed cluster and among those with neurotic disorders. Cluster-wise prevalence was cluster C > B > mixed > A (47.1%, 25.2%, 16.7%, and 11.4%). Among subtypes, anankastic (18.1%) and mixed (16.7%) had the highest prevalence (35).

Tamam et al. attempted to evaluate the prevalence rate of comorbid personality disorder in 74 bipolar I disorder cases who were in remission using SCID-II. In this study, 62% of bipolar I patients had at least one comorbid axis II disorder. The most common comorbid cluster of personality disorder was cluster C (48.6%), followed by cluster A (25.7%) and cluster B (20.3%) personality disorders (36).

In 2023, Sletved et al. studied 204 patients with newly diagnosed bipolar disorder (BD), 109 of their unaffected first-degree relatives and 188 healthy control individuals. Using SCID-II-interview, the authors observed that more than a quarter (25.5%; n=52) of the patients with newly diagnosed bipolar disorder fulfilled criteria for a comorbid PD, already at the time of the diagnosis with BD (37).

Bezerra-Filho et al. tried to assess the frequency of comorbid personality disorders (PDs) among euthymic bipolar patients. Of the 376 euthymic bipolar patients analyzed, 155

(41.2%) had at least one comorbid PD. The researchers discovered that 25 (6.6%) belonged to cluster A, 87 (23.1%) to cluster B, and 55 (14.6%) to cluster C. The particular frequencies for PD subtypes were Borderline, 29 (7.7%), histrionic, 28 (7.4%), obsessive-compulsive, dependent, 19, (5%), narcissistic, 17 (4.5%), schizoid, schizotypal, and avoidant, 11 patients each (2.95%), paranoid, five (1.3%), and antisocial, three (0.79%) (38).

A cross-sectional study was conducted in six rehabilitation centers in Kenya, involving a sample of 207 patients. Out of 207 patients enrolled in the study, 115 (55.7%) were found to have at least one personality disorder. Of these 16.9% were found to have more than one personality disorder. The most common personality disorder was a Cluster C personality disorder (37.7%), followed by Cluster B (19.8%) and Cluster A (12.8%). More specifically, the most frequently identified personality disorder was avoidant personality disorder (21.3%), followed by obsessive-compulsive PD (14%), paranoid PD (10%), and antisocial PD (8.7%) (39).

In the case of Ethiopia, recently, Jemal et al. carried out an institution-based cross-sectional study among 410 patients with mental illnesses in southwest Ethiopia. The authors used personality disorder questionnaire four (PDQ-4) to assess the prevalence of cluster B personality disorders, and they found that about a quarter 23.19%, $n = 93$) had cluster B personality disorders (9).

2.2 Factors associated with the prevalence of personality disorders

Various factors that affect the prevalence of personality disorders in one way or another were indicated in previous literatures. Casadio et al. showed that PDs to be positively associated with placement in an addiction treatment community, having received lifetime treatment at the mental health center or having attempted suicide (27). In Italian setting, Barzega et al. found that females were disproportionately affected by cluster C PD, particularly dependent personality disorder diagnoses (40).

Tamam et al. also revealed that bipolar patients with comorbid personality disorder were mainly female, had multiple affective episodes, and had attempted suicide more often than patients without personality disorder (36). Ongeru showed those patients who were younger, unmarried unemployed were more likely to have a personality disorder (39). Wang et al. observed that patients with non-psychotic disorders were more likely to meet the criteria of borderline and obsessive-compulsive PD diagnoses compared to those with psychotic disorders (28). Childhood emotional abuse, emotional/physical neglect, physical/sexual

abuse, and adversities in general emerge as robust risk factor for personality disorders in an umbrella review of meta-analysis by Solmi et al (41).

On the other hand, Jemal et al. in their aforementioned study, found that unable to read and write, unemployment, diagnosis of depressive and bipolar-I disorders, longer duration of illness, multiple relapses, history of family mental illnesses, recent cannabis use, recent use of alcohol, starting to use substance at earlier age, and suicidal attempt were the factors that were significantly associated with cluster B personality disorders (9). On the contrary, DaCosta noticed that compulsive personality traits were positively associated with the attainment of higher education (42).

2.3 Conceptual framework

In order to inform our analysis, the principal investigator used a customized conceptual framework to understand the factors associated with personality disorders among psychiatric outpatients, which builds on existing literatures (9,28,36,43) on factors associated with the presence of PD. The investigator hypothesizes that factors associated with treatment outcomes operate in different patterns. In this framework, the principal investigator considers the sociodemographic factors, clinical details, and management-related factors as the main potential factors associated with the presence of PDs among psychiatric patients seeking outpatient care. Thus, this framework is believed to support the study entitled as “*The magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, 2023*”.

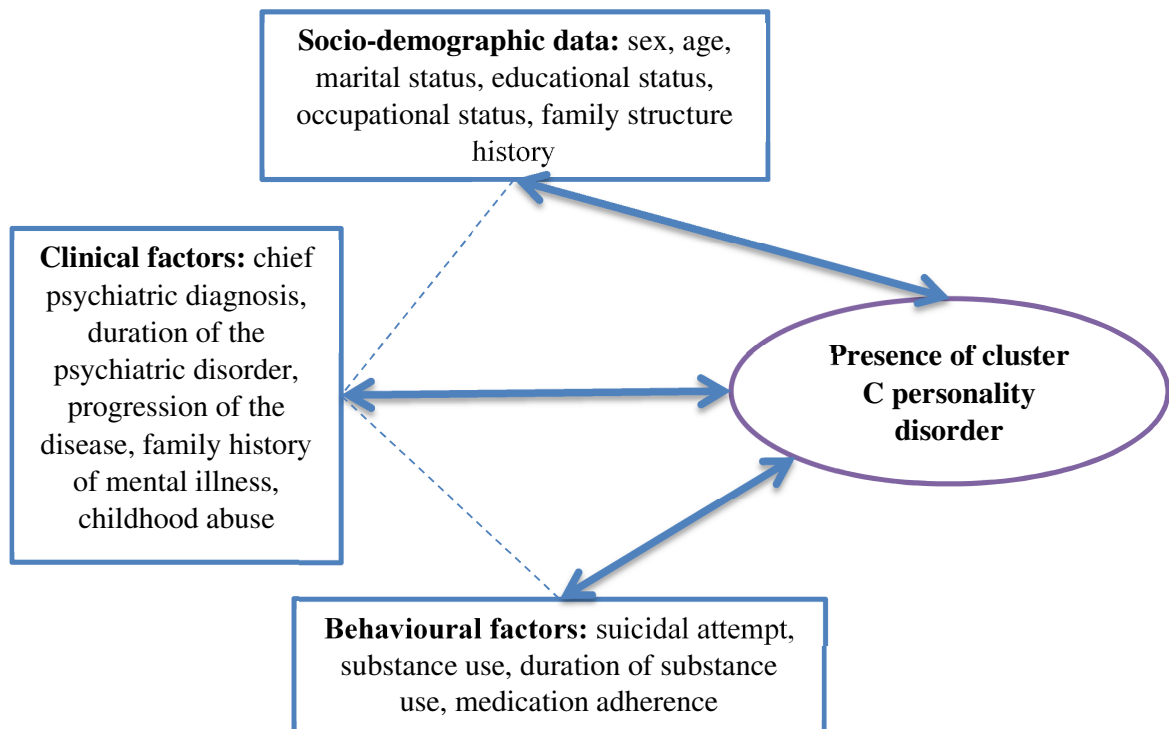


Figure 1. The conceptual framework for this study reveals factors associated with the presence of cluster C personality disorder (9,28,36,43)

3. Objectives

3.1 General objective

- To assess the magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia.

3.2 Specific objectives

- To assess the magnitude of cluster C personality disorders among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia.
- To identify factors associated with cluster C personality disorders among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia.

4. Methods and Materials

4.1 Study area and period

The study was conducted at St. Paul's Hospital Millennium Medical College (SPHMMC), one of the largest government hospitals located in Addis Ababa, the capital city of Ethiopia. The college has more than 2800 clinical, academic and administrative, and supporting staff that provide medical specialty service to patients who are referred from all over the country. Built in 1969, the hospital serves about 200,000 patients annually on average, with a catchment population of more than 5 million. The hospital has more than 700 beds dedicated to inpatient service. On top of this, this referral hospital is an academic center for both undergraduate and postgraduate health science students.

Currently, the Psychiatry Department of the hospital provides inpatient and outpatient services. It has a total of 27 beds dedicated to inpatient service that encompasses the acute ward, recovery ward, and substance ward. The outpatient unit is subdivided into regular, geriatric, substance, lithium, and pediatric outlets. Together, the outpatient department delivers a range of psychiatric care to more than 18,000 patients with psychiatric problems having varying follow-up intervals. The service is delivered by ten clinical psychiatry specialists, a neuropsychopharmacologist, thirty-two specializing residents, four psychologists, and eleven trained nurses stationed at each dedicated office (44). The study period was October 1 to November 30, 2023 G.C.

4.2 Study design

An institution-based cross-sectional quantitative study was conducted.

4.3 Population

4.3.1 Source population

The source population for this study was all patients with mental illnesses visiting psychiatry outpatient at SPHMMC, Addis Ababa, Ethiopia.

4.3.2 Study population

The study population for this study was adult patients (selected via systematic random sampling technique and who fulfilled the eligibility criteria) with mental illnesses visiting psychiatry outpatient department at SPHMMC, Addis Ababa, Ethiopia during the study period.

4.4 Eligibility criteria

4.4.1 Inclusion criteria

- Individuals with diagnosed mental illnesses aged 18 or older
- Patients who were at least seen once by a psychiatrist
- Those who can give consent

4.4.2 Exclusion criteria

- Those who are acutely disturbed during the time of interview
- Those with gross communication problems
- Those who are not willing to participate

4.5 Sample size determination

The sample size for this study is calculated using a single population proportion formula. Taking the prevalence of cluster c personality disorders among psychiatric as 50% as there were no prevalence estimates in the study setting, and assuming 95% confidence level, 5% margin error and 10% nonresponse rate the sample size is estimated as follows:-

$$n = \frac{z^2 p(1 - p)}{e^2}$$

n = the required sample size

p = the proportion of patients with cluster c personality disorders – 50%

$Z_{\alpha/2}$ = the critical value at 95% confidence level = 1.96

e = precision (margin of error) = 5%

Accordingly,

$$n = \frac{(1.96)^2 * 0.50(1 - 0.50)}{0.05^2}$$

$$n = \frac{(1.96)^2 * 0.50(0.50)}{0.05^2}$$

$$n = 384$$

Hence, adding 10% non-response rate to the calculated sample size (384), the final sample size required for this study becomes 422.

4.6 Sampling procedure

The total number of clients who attended the psychiatric outpatient department over the six months preceding the time of data collection was reviewed to get the average number of adult outpatients that are seen per month. Accordingly, the approximate average number of monthly patients is 1050. As the study was designed to be done over two months, a total of 2100 patients are expected to be seen. Hence, $K=2100/422 \approx 5$. Then, a systematic random sampling method was employed to approach every fifth patient for interview. The first sample in the hospital was chosen randomly via a lottery method. In cases where the fifth patient was not willing to interview, the next patient was approached.

4.7 Variables in the study

4.7.1 Dependent variable

- Presence of cluster C personality disorder

4.7.2 Independent variables

- Socio-demographic characteristics such as sex, age, marital status, educational status, occupational status, parenting history
- Behavioural characteristics of the patient such as suicidal attempt, substance use, duration of substance use, medication adherence
- Clinical profile of the patient including chief psychiatric diagnosis, duration of the psychiatric disorder, progression of the disease, family history of mental illness, childhood abuse

4.8 Data collection tools and techniques

Data were collected using a structured, pre-tested data collection questionnaire, and face-to-face interviews were carried out to record data by means of Google Form. An Amharic version questionnaire was used to collect data. The tool contains both closed and open-ended questions specifically designed for the study and is adopted from previous similar studies. The questionnaire is prepared by reviewing relevant related studies (9,45,46) and studies done in other countries and tries to assess socio-demographic factors, adherence level, and social support level among study participant. Additionally, it contains items assessing cluster C from the Personality Diagnostic Questionnaire-4+ (47).

The PDQ-4+ is a self-report that evaluates ten distinct PDs in addition to two PDs suggested in the DSM-IV. One DSM-IV diagnostic criterion is literally reflected in each of these 99 true-false questions. The overall PDQ-4+ self-report score serves as an indicator of overall personality disturbance; PD is disregarded for scores under 20, scores between 20 and 30, further evaluation is necessary, and scores over 30 suggest a probable PD diagnosis. The PDQ-4+ has demonstrated adequate psychometric properties in both its original form and in versions that have been translated into other languages and cultures, as well as in clinical and nonclinical samples (47,48).

The eight-item Morisky's Medication Adherence Scale (MMAS-8) was also used to measure medication adherence. For the first seven items, the scoring system is "Yes" = 0 and "No" = 1, with the exception of item number five, where the values of "Yes" and "No" are reversed. For the final item, a five-point Likert response is used, with the options "never", "once in a while", "sometimes", "usually", and "always". The following are the potential answers for item 8: 0 indicates "difficulty remembering always;" 0.25 indicates "difficulty remembering usually;" 0.5 indicates "difficulty remembering sometimes;" 0.75 indicates "difficulty remembering once in a while;" and 1 indicates "no difficulty remembering." (5,40). The MMAS-8 has a total score range of 0 to 8, with scores of 8 indicating high adherence, 7 or 6 indicating medium adherence, and below 6 indicating low adherence (46).

Again, social support was assessed by a 14-point Oslo Social Support Scale (OSSS-3). The OSS-3 is a brief and economic instrument to assess the level of social support. Poor social support constitutes scores between 3 and 8, moderate social support represented by score of 9 to 11, and strong social support means score from 12 to 14 (45).

The medical records of participating patients were reviewed whenever the need arises. Two professional healthcare workers were recruited and trained on data collection procedures. For data collectors and supervisors, relevant one-day training was given by the investigator to make them familiar with the data collection tool and the procedures of the study. Data were collected after obtaining informed written consent from the study participants by interviewers.

4.9 Operational definitions

- **Social support:** psychosocial resource that is accessible in the context of interpersonal contacts, and one's social network, as measured by OSSS-3. Patients were categorized to have poor social support if they score 3–8, moderate social

support if they score 9–11, and strong social support in cases when the score ranges from 12 to 14 (45).

- **Medication adherence:** category of adherence as measured by MMAS-8 such that patients were considered to have high adherence if they score 8, while those who score 6 to 7 and <6 were categorized as having medium adherence and low adherence (46).
- **Cluster C Personality disorder:** pervasive, disruptive patterns of thinking and behavior as measured by PDQ 4+. The presence of personality disorder was declared at 4 positive responses out of 7 items for avoidant PD; 5 out of 8 eight possible responses for dependent PD; and 4 out of the 8 obsessive-compulsive PD items (49).
- **Psychiatric patient:** any patient seeking care for a documented psychiatric illness such as schizophrenia spectrum disorder, depressive disorder, anxiety disorder, bipolar disorder, substance use disorder, and/or others which was diagnosed by a practicing physician in accordance with DSM 5 TR.

4.10 Data quality management

The questionnaire used to collect data was prepared by the principal investigator in English version and translated into Amharic version and back to English version. Brief training for the data collectors (two general practitioners) about the process of data collection was given before the process of data collection. Close supervision was preserved during data collection and questionnaires were double-checked daily for consistency and completeness by data collectors and the principal investigator. The questionnaire was pretested in 32 patients out of the study population, and a Cronbach's alpha (reliability index) of 0.885 was obtained for the PDQ+ scale. Pretesting was done to minimize ambiguity of words and also for comprehensibility, appropriateness of language, sensitivity of questions, and average duration of administration. The feedback received after this process was used to modify and finalize the tool.

Additionally, with pilot study, each of the scales' face validity was found to be satisfactory with only a few minor modifications necessary. Face validity of the tool was ensured through structuring the instrument into five parts. Content validity was ensured through assessment by experts in Counselling Psychology and Psychiatry to assess whether all contents to be measured are included. Construct validity was ensured by checking items in the data collection instruments against study objectives to ensure all construct under study were measured.

4.11 Methods of data analysis

Data were entered, coded, and cleaned using Google Form and statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 26. Frequency and cross-tabulation were used to check for missed value and variables. The demographic and clinical characteristics were computed using descriptive statistics such as mean $\pm$ standard deviation and median + interquartile range for continuous variables while percentage and frequencies for categorical ones. Binary and multiple logistic regressions were used to identify factors associated with the outcome variable – the presence of cluster C personality disorder.

Bivariable logistic regression analysis was used to check variables associated with the dependent variable individually. Variables yielding p-value <0.25 in the binary regression analysis were then exported into multiple logistic regression model for further analysis to compute odds ratio with corresponding 95% confidence intervals. A p-value was considered significant at the level of <0.05 . The Hosmer-Lemeshow Goodness of Fit test was used to check whether the model adequately fits the data in this study. The Hosmer-Lemeshow Goodness of Fit test showed a chi square of 11.9 with p-value of 0.156, both suggesting fitness of the model. Finally, the study finding was presented using texts, diagrams, tables, and figures.

4.12 Ethical considerations

Ethical clearance was obtained from the Institutional Review Board of SPHMMC (Reference number: pm23/173). A support letter was submitted to the outpatient coordinator from the department to proceed with data collection. This was followed by the introduction and familiarization of the data collectors with the onsite practitioners. Before interviewing clients, the purpose of the study was explained in plain language until it was well grasped and informed written consent was obtained. During data collection, the study participants were informed that the information collected would be kept anonymous, confidential, and that the data collected would be utilized only for this study. Finally, participants who would have grossly overt PDs up on assessment were reported to their respective clinicians for a possible in-depth assessment and appropriate intervention. If a participant is found to have an organized suicidal plan during the interview, it was meant to urgently communicate with the treating physician for immediate interventions.

4.13 Dissemination of the study findings

The findings of this study will be submitted to the Department of Psychiatry, Saint Paul's Hospital Millennium Medical College in Partial Fulfillment of the Requirements for Specialty Certificate in Psychiatry. The outcome of this study will be presented to higher officials of the study hospital. It will also be presented and disseminated to other concerned stakeholders through presentations in different professional forums. Additionally, as the results are expected to contribute to health policymakers, effort will be exerted to inform the Federal Ministry of Health of the overall picture of the findings. Finally, the manuscript will be submitted to a reputable peer-reviewed journal for possible publication.

5. Results

5.1 Sociodemographic characteristics

For this study, 422 patients with mental illnesses visiting psychiatry outpatient clinics at SPHMMC, Addis Ababa, Ethiopia. were approached, and of these, 412 patients were successfully included, giving a response rate of 97.6%. Males had slight predominance, with a male-to-female ratio of 1.16:1. Patients' age ranged from 18 to 60 with a median age (interquartile range) of 30 (24–36.75) years. About two-fifths of all respondents (164;39.8%) belonged to the age group that spanned from 25 to 34 years. Most, 323 (78.4%), of the study participants had attended up to high school or beyond. Majority (160;38.8%) of the respondents were unemployed while more than a quarter were private employees (106;25.7%) (Table 1).

With regard to marital status, the majority (292;70.9% were unmarried, with only 102 (24.8%) being married. In relation to household income category (wealth index quintile), close to half (168;40.7%) reported to have a family income of ≤ 6000 ETB a month whereas one hundred fifty-six (37.9%) reported to have a monthly household income of more than 9000 ETB (Table 1).

The majority, 296 (71.8%) stated to have been raised by both parents during childhood. Most (339;82.3%) reported to have at least two biological siblings. Approximately one-fourth (97;23.5%) reported to experience parental loss during childhood. Close to half (190;46.1%) declared to have enrolled in the available community-based health insurance system (Table 1).

5.2 Clinical characteristics of patients

Table 1. Socio-demographic characteristics of patients with mental illnesses visiting psychiatry outpatient clinics at SPHMMC, Addis Ababa, Ethiopia from October 1st to November 30th, 2023

Variable	Frequency	Percent (%)
Sex		
Male	221	53.6
Female	191	46.4
Age group		
18–24 years	109	26.5
25–34 years	164	39.8
35–60 years	139	33.7
Educational status		
No formal education	24	5.8
Primary school	65	15.8
High school	160	38.8
College diploma +	163	39.6
Job category		
Merchant	19	4.6
Housewife	26	6.3
Student	50	12.1
Civil servant	51	12.4
Private employee	106	25.7
Jobless	160	38.8
Marital status		
Unmarried	292	70.9
Married	102	24.8
Separated/divorced	14	3.3
Widowed	4	1.0
Household income quintile		
≤4000 ETB	92	22.3
4001–6000 ETB	76	18.4
6001–9000 ETB	88	21.4
90001–13940 ETB	74	18.0
>13940 ETB	82	19.9
Mode of childhood growth		
Both parents	296	71.8
Only mother	54	13.1
Only father	4	1.0
Other	58	14.1
Number of siblings		
None	26	6.3
One	47	11.4
≥Two	339	82.3
History of parental loss		
Yes	97	23.5
No	315	76.5
Community based health insurance enrollment		
Yes	190	46.1
No	222	53.9

Schizophrenia spectrum disorders (153;37.1%), depressive disorder (127;30.8%) and anxiety disorder (49;11.9%) were the three leading psychiatric diagnoses among the study population, respectively. More than half (215;52.2%) of the interviewed patients were within one to five years following diagnosis of the index psychiatric disorder. While 174 (42.2%) patients had no relapse episodes over the preceding two years, the majority (238;57.8%) patients had at least a single episode of relapse over the same period (Table 2).

Eighty-eight (21.4%) had a positive family history of mental illness whereas 45 (10.9%) had a history of physical abuse. Only fourteen (3.4%) reported to have a history of sexual abuse. The majority (247;60%) were on monotherapy while 142 (34.5%) were taking more than one pharmacological agent regularly. One hundred and fifty-two (36.9%) were taking some form of illicit substance. Tobacco products, alcoholic beverages, and khat were the most frequently mentioned substances, as they were reported by 83 (54.6%), 68 (44.7%), and 42 (27.6%) of the total study population, respectively. Half of the patients using substances had a duration of less than 5.5 years. However, majority (64;42.1%) claimed not to have used any of the substances over the last three months prior to the time of interview. Suicidal attempt was reported by 107 (26%) of the patients (Table 2).

Table 2. Clinical characteristics of patients with mental illnesses visiting psychiatry outpatient clinics at SPHMMC, Addis Ababa, Ethiopia from October 1st to November 30th, 2023

Variable	Frequency	Percent (%)
Diagnosis		
Schizophrenia spectrum disorders	153	37.1
Depressive disorder	127	30.8
Anxiety disorder	49	11.9
Bipolar disorder	35	8.5
Substance use disorder	27	6.6
Other	21	5.1
Illness duration		
<1 year	67	16.3
1–5 years	215	52.2
5.1–10 years	89	21.6
>10 years	41	10.0
Episodes of relapse		
None	174	42.2
One	121	29.4
Two	51	12.4
>2	66	16.0
Family history of mental illness		
Present	88	21.4
Absent	324	78.6
History of physical abuse		
Present	45	10.9
Absent	367	89.1
History of sexual abuse		
Present	14	3.4
Absent	398	96.6
Number of regular medications		
None	23	5.6
One	247	60.0
≥Two	142	34.5
Type of substance used (n=152)		
Tobacco products	83	54.6
Alcoholic beverages	68	44.7
Amphetamine-type stimulants	42	27.6
Sedatives	20	13.2
Cannabis	17	11.2
Cocaine	1	0.6
Duration of substance use (n=152)		
<5.5 years	76	50.0
≥5.5 years	76	50.0
Recent frequency of using substances in the last 3 months (n=152)		
Never	64	42.1
1 to 2 times	12	7.9
Monthly	21	13.8

Weekly	19	12.5
Daily or almost daily	36	23.7
Suicidal attempt		
Yes	107	26.0
No	305	74.0

*Number of episodes of relapse over the preceding 2 years

5.3 Social support and medication adherence characteristics of respondents

Regarding social support, approximately one-third (131;31.8%) had poor social support. The remaining 33.5% (n=138) and 34.7% (n=143) were shown to have moderate and strong social support based on their OSSS-3 scores (see Figure 2). Further, most (97.6%;402) of the respondents were found to have low adherence whereas the remaining (2.4%;10) had moderate adherence levels to their prescribed medications based on their scores on MMAS-8.

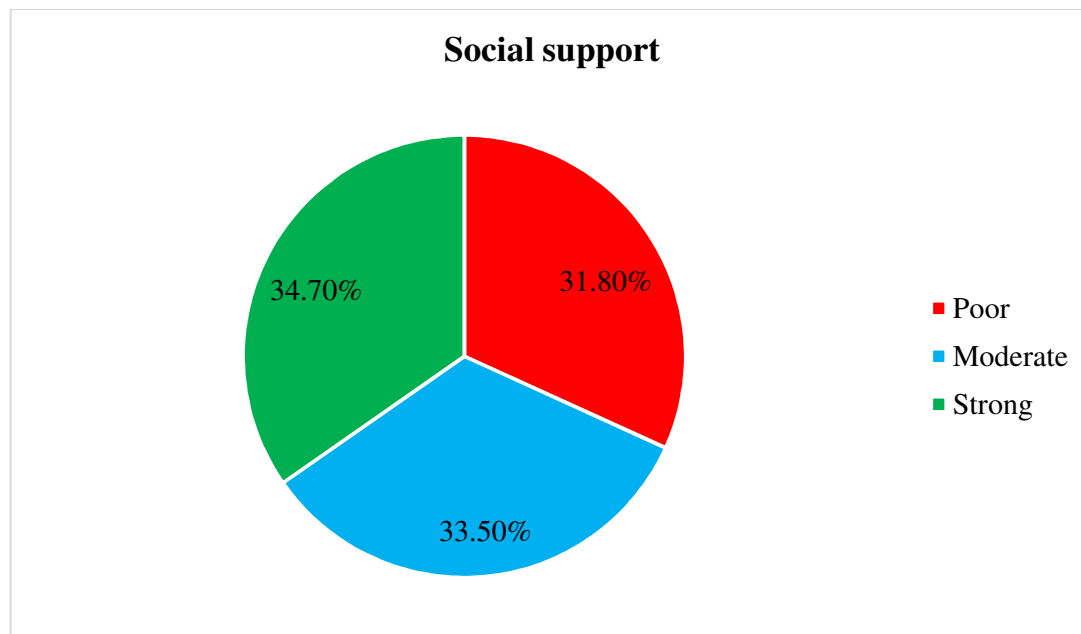


Figure 2. Social support profile (measured using Oslo social support scale-3) of patients with mental illnesses visiting psychiatry outpatient clinics at SPHMMC, Addis Ababa, Ethiopia from October 1st to November 30th, 2023

5.4 Personality disorders among respondents

One hundred forty-six (35.4%;95%CI=30.8–40.1%) patients fulfilled the criteria for a comorbid cluster C PD. Avoidant PD was the most common (100;68.5%) of the cluster C PDs. Further, obsessive-compulsive PD and dependent PD occurred in 62 (42.5%) and 39 (26.7%) of the patients, respectively. Ninety-nine (67.8%) of all patients had a single subtype of CCPD while 39 (26.7%) and 8 (5.5%) had two or three of the CCPDs (Table 3).

Table 3. Personality disorder and adherence profile of patients with mental illnesses visiting psychiatry outpatient clinics at SPHMMC, Addis Ababa, Ethiopia from October 1st to November 30th, 2023

Variable	Frequency	Percent (%)
Medication adherence level		
Low	402	97.6
Moderate	10	2.4
High	0	0
Cluster C personality disorder		
No	266	64.6
Yes	146	35.4
Subtype of Cluster C PD (n=146)		
Avoidant PD	100	68.5
Obsessive compulsive PD	62	42.5
Dependent PD	39	26.7
Number of Cluster C PD (n=146)		
One	99	67.8
Two	39	26.7
Three	8	5.5

PD: Personality disorder

5.5 Factors associated with cluster c personality disorder

Initially, twenty-one different variables such as age, sex, educational status, marital status, occupational category, family structure, household monthly income, enrollment in CBHI, sibship size, type of illness, disease duration, family history of mental illness, history of sexual abuse, physical abuse, parental loss, substance use status, number of episodes, suicidal attempt, social support, number of regular medications and medication adherence were considered for bivariable analysis. In the bivariable analysis, the following variables showed p-values less than 0.25 and were taken and analyzed together using a multivariable logistic regression model. These variables included sex, educational status, occupational category, family structure, family history of mental illness, history of sexual abuse, physical abuse, substance use status, number of episodes, suicidal attempt, social support, and medication adherence.

The Omnibus test showed a chi square of 59.15 with p-value of <0.001, suggesting adequate fitness of the model. The Nagelkerke R square value was 0.184, suggesting that the predictors included in the model explain 18.4% of the variance in the outcome variable. Regarding

multicollinearity, correlation test was run for each predictor variable before including the multivariable model, with each of them having rho value less than 0.7.

After controlling for the effects of potentially confounding variables using a multivariable logistic regression model, sex, educational status, occupational category, family history of mental illness, and social support were found to be statistically significant factors associated with cluster C PD. More precisely, this study showed that, when compared to males, females were about two times more likely to have cluster C PD, with AOR of 1.67 (95%CI: 1.03,2.72). Furthermore, the odds of participants with CCPD are 3.57 times higher in those who attained a tertiary level education than those with no formal education [AOR(95%CI) = 3.57(1.18,10.79)]. Compared to employed patients, unemployed individuals were about two times more likely to have cluster C PD, with AOR of 1.90 (95%CI: 1.20,3.01). Patients with positive family history of mental illness were more than twice more likely to have CCPD when compared to those with no family history of mental illness [AOR(95%CI) = 2.24(1.31,3.83)]. Finally, patients with low social support had about two times more likelihood of having CCPD in reference to those with strong social support [AOR(95%CI) = 1.84(1.05,3.23)] (see Table 4).

Table 4. Factors associated with cluster c personality disorder among patients with mental illnesses visiting psychiatry outpatient clinics at SPHMMC, Addis Ababa, Ethiopia

Variable	Cluster c personality disorder		COR (95%CI)	AOR (95%CI)	P value
	Yes (%)	No (%)			
Sex					
Male	70(31.7)	151(68.3)	1	1	-
Female	76(39.8)	115(60.2)	1.43(0.95,2.14)	1.67(1.03,2.72)	0.038*
Educational status					
No formal education	5(20.8)	19(79.2)	1	1	-
Primary school	18(27.7)	47(72.3)	1.46(0.47,4.48)	1.59(0.49,5.21)	0.442
High school	48(30.0)	112(70.0)	1.63(0.58,4.62)	1.66(0.55,4.99)	0.369
College diploma +	75(46.0)	88(54.0)	3.24(1.15,9.09)	3.57(1.18,10.79)	0.024*
Occupational category					
Employed	52(29.6)	124(70.4)	1	1	
Unemployed	94(39.8)	142(60.2)	1.58(1.04,2.39)	1.90(1.20,3.01)	0.007*
Mode of childhood growth					
Both parents	95(35.7)	201(64.3)	1	1	-
Either of parents	26(44.8)	32(55.2)	1.72(0.97,3.05)	1.36(0.72,2.55)	0.347
Others	25(43.1)	33(56.9)	1.60(0.90,2.85)	1.24(0.65,2.34)	0.515
Episodes of relapse					
None	50(28.7)	124(71.3)	1	1	-
One	46(38.0)	75(62.0)	1.52(0.93,2.49)	1.40(0.82,2.39)	0.225
Two	22(43.1)	29(56.9)	1.88(0.99,3.58)	1.52(0.74,3.14)	0.253
>2	28(42.4)	38(57.6)	1.83(1.02,3.29)	1.35(0.70,2.60)	0.374
Family history of mental illness					
Present	47(53.4)	41(46.6)	2.61(1.61,4.21)	2.24(1.31,3.83)	0.003*
Absent	99(30.6)	225(69.4)	1	1	-
History of physical abuse					
Present	25(55.6)	20(44.4)	2.54(1.36,4.76)	1.17(0.56,2.55)	0.695
Absent	121(33.5)	246(66.5)	1	1	-
History of sexual abuse					
Present	9(64.3)	5(35.7)	3.43(1.13,10.43)	1.98(0.56,7.02)	0.289
Absent	137(34.4)	261(65.6)	1	1	-
Suicidal attempt					
Yes	50(46.7)	57(53.3)	1.91(1.22,3.00)	1.26(0.75,2.13)	0.380
No	96(31.5)	209(68.5)	1	1	-
Substance use					
No	84(32.3)	176(67.7)	1	1	-
Yes	62(40.8)	90(59.2)	1.44(0.95,2.19)	1.18(0.71,1.97)	0.520
Social support					
Poor	60(45.8)	71(54.2)	1.90(1.16,3.12)	1.84(1.05,3.23)	0.034*
Moderate	42(30.4)	96(69.6)	0.98(0.59,1.64)	1.15(0.67,1.99)	0.611
Strong	40(28.8)	99(71.2)	1	1	-

Adherence level					
Low	140(34.8)	262(65.2)	1	1	-
≥Moderate	6(60.0)	4(40.0)	2.81(0.78,10.11)	1.87(0.45,7.74)	0.387

Only variables with p value <0.25 in the bivariable regression are depicted here;
1: Reference category; *: statistically significant factors

6. Discussion

This study was carried out to quantify the magnitude of cluster C personality disorders and identify associated factors among psychiatric outpatients visiting Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia. Thus, the study showed that more than one-third (35.4%) of the studied patients had cluster C personality disorders. Additionally, it was identified that being female, having higher educational status, unemployment, positive family history of mental illness, and poor social support were the independent factors that were associated with the presence of cluster C personality disorders among these patients.

More precisely, this study demonstrated that more than one-third (35.4%) of the studied outpatients had cluster C personality disorders as a comorbidity. This finding corroborates with the finding of Hauber et al., who documented that 35.4% of post-treatment psychiatric patients met the criteria for a personality disorder (34). The findings are also comparable to the study conducted in Kenya where the prevalence of CCPD was 37.7% (39). Additionally, the finding was in agreement with the prevalence of personality disorders obtained by Sanderson and coauthors among patients with anxiety disorders (35%) (43). The magnitude of comorbid PD was comparable to the study conducted in Canada and Norway, where the corresponding prevalence of PDs were 32% and 31%, respectively (30,32).

On the contrary, the present finding was comparatively higher than the figure (21.8% obtained by Zimmerman et al. among US patients (8) and the estimated global prevalence of these CCPD (5%) (50). The current magnitude of PD was lower than the magnitude obtained by Haw and others, who identified personality disorder in 45.9% of British patients with deliberate self-harm (out of which 12.6% had dependent PD) (33). Apart from this, the present figure was different from what was observed in the previous Ethiopian study, in which only 23.2% of patients were found to have cluster B personality disorders (9). The discrepancy in the magnitude can probably be attributed to the varying diagnostic criteria, assessment tools used, the subtype of PD assessed, and populations studied (8,33,35).

More specifically, the previous American study used DSM-IV criteria to assess personality disorder while the British study used personality assessment schedule in contrast to the current study, which used the PDQ-4+ that rendered a reliability index of 0.859 for the whole dataset (8,33). Further, the previous Ethiopian study focused on cluster B PDs whereas this one targeted at cluster C PDs. In fact, the higher prevalence of cluster C PD obtained in this study compared to the previous Ethiopian study is in keeping with the work of Saini et al.

(35), who observed a higher proportion of cluster C PD versus cluster B PD (47.1% vs 25.2%) among patients with major psychiatric disorders in India (35).

Among the multiple reasons for the high prevalence of comorbid PDs among psychiatric patients could be a shared genetic basis of these two groups of disorders. In fact, the personality disorder itself may be a predisposing factor for developing psychiatric illnesses such as anxiety disorders and depression, increasing its likelihood of prevalence among such individuals (18,51).

Female patients were more likely to have cluster C PD compared to their male counterparts. This is in line with the work of Barzega et al., who found that females were disproportionately affected by cluster C PD, particularly dependent personality disorders in comparison to males (40). This particularly can be explained by expectations relating to gender roles on top of genetic factors (52).

Interestingly, this study showed that individuals with higher academic performance were more likely to be diagnosed with cluster C PD, particularly obsessive-compulsive PD. This is consistent with the report of DaCosta, who noticed that compulsive personality traits were associated with the attainment of higher education among doctoral students (42). This finding highlights the complex effects of PDs on academic achievement, partly as a function of the degree of the symptomology of the PD. However, the present finding generally can be attributed to the high degree of conscientiousness, specifically workaholism and doggedness, and grit that can be observed among individuals with compulsive personality traits (42).

Additionally, this study demonstrated that unemployed individuals were more likely to have cluster C PD in comparison to those with any form of employment. This finding is expected as the presence of personality dysfunction can have substantial deleterious and wide-ranging influence on work functioning. Indeed, such an effect can be modulated by the nature of symptoms and the challenges these individuals face in the workplace, which can be coupled with difficulties in social situations, relationships, and poorer job performance (53,54).

In this study, patients with a positive family-level history of a mental disorder were more likely to have cluster C personality disorders. This finding also confirms the heritable tendency of PDs (10). The additional justification for this increased probability can be the fact that family history of mental illness can play a key role in the development of personality disorders in that if a family member possesses a psychiatric disorder, it may create a hostile

environment (disrupts family functioning) in which the patient experiences increased anxiety and fear, leading to the development of these disorders (55).

Finally, social support was negatively associated with cluster C personality disorders such that individuals with lower self-rated perceived social support were more likely to have these PDs than their counterparts with as strong social support. People with cluster C personality disorders may have trouble forming and maintaining healthy relationships due to their unjustified fear of rejection or criticism, clinginess to others, or inflexibility depending on the specific disorder (6,12).

For example, individuals with avoidant PD may have limited interpersonal interactions with others including significant others, family, and friends because they are afraid of being rejected or criticized, while those with dependent PD, owing to their desire to preserve a significant bond, may frequently seek care and attention from others, resulting in relationships characterized by imbalance or distortion. On the other hand, people with obsessive-compulsive PD may have difficulty relating to and expressing their feelings, which can disrupt their social interactions and negatively impact their relationships, ultimately resulting in a poor social support system (6,12).

Finally, it should be acknowledged that early diagnosis and proper management of co-existing personality disorders among psychiatric patients is clinically beneficial in terms of clinical course and overall prognosis (13). Specifically, this is particularly true in the case of CCPDs, which were shown to be associated with delayed response to short-term and long-term treatment as well as an unfavorable outcome among psychiatric patients (15,16)

7. Strengths and Limitations

7.1 Strengths

For this study, data were from a single center, ensuring a homogeneous set of source population. Data were corroborated from multiple reliable sources for reducing information bias, and confirmation of psychiatric diagnosis and review of personality inventory scores were done by the onsite most senior resident in the department to address interviewer bias.

7.2 Limitations

This study had certain limitations. First, the cross-sectional nature of the study design does not provide a definitive cause-and-effect relationship. Besides, some of the items included in this study were past experiences, subjecting the responses obtained to recall bias. Another limitation is that the details regarding substance use were obtained through patient response and/or review of medical records; biological tests were not carried out to verify the accuracy of such information. Finally, this study was conducted in a single health institution, and hence, the results should be generalized only with caution to populations in different settings.

8. Conclusion and Recommendation

8.1 Conclusion

This study showed that more than one-third (35.4%) of outpatients with psychiatric disorders had cluster C personality disorders, with avoidant PD being the dominant variant. Moreover, certain factors such as female sex, higher educational status, unemployment, positive family history of mental illness, and poor social support showed a positive association with the presence of cluster C personality disorders among these patients.

8.2 Recommendation

Given the findings obtained in this study, it appears reasonable to forward the following recommendations.

To healthcare practitioners,

Health care practitioners should take time to screen outpatients for the presence of cluster C personality disorders to provide holistic care (and tailored intervention) and enhance clinical outcome. Particular attention should be directed to female patients as well as those with factors such as higher educational status, unemployment, positive family history of mental illness, and poor social support.

To local health officers,

Local health officers should design customized guidelines while instituting sensitization and training programs that aim at early identification and subsequent management of personality disorders. A multidisciplinary approach with the engagement of clinical psychologists should be included in the overall care of psychiatric patients to address the social and occupational impairments associated with cluster C PD.

For researchers,

Further research should be carried out to validate the current findings, and they should consider more robust designs, including longitudinal ones to identify the direction of association.

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Annexes

Annex 1: Information sheet for the study

I, undersigning this document, am giving my consent to participate in the study entitled as — The magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia 2023. I have been informed that the purpose of this study is to assess magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, 2023. I have understood that participation in this study is entirely voluntarily. I have been told that my answers to the questions will not be given to anyone else except the members of the research team, and no reports of this study ever identify me in any way. I am aware that my treating physician will be notified urgently whenever a clinically pertinent finding is identified during the data collection process. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks. I understood that Mahelet Berhanu (phone number: +251911762325) is the contact person if I have questions about the study or about my rights as a study participant.

- ✓ Do you have any question?
- ✓ ☐ Do I have your agreement to proceed? If yes Continue
If no Stop

Annex 2- English version questionnaire

This is the questionnaire that will be used to assess the magnitude of cluster C personality disorders and associated factors among psychiatric outpatients at Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, 2023

001. Data collector: code ____/____/____ Name _____

002. Serial number _____

003. MRN: _____

Please encircle, fill or tick your responses in front of the questions presented below.

Part I: Socio-demographic information

Q NO	Question item	Coding categories/alternative
101	Sex	1. Male 2. Female
102	Age in years	-----
103	Educational status	1. Can't read/write 2. Can read and write 3. Primary school 4. High school 5. College diploma +
104	Job	1. Merchant 2. Civil servant 3. Private employed 4. Student 5. House wife 6. Jobless 7. Other (specify-----)
105	Marital status	1. Single 2. Married 3. Separated 4. Divorced 5. Widowed
106	Average household monthly income	ETB
107	Type of family structure the index patient grew with	1. Father and mother 2. Only mother 3. Only father 4. Other

108	Number of live siblings	_____
109	Did you experience parental loss during childhood?	1. Yes 2. No
110	Are you enrolled at the community-based health service?	1. Yes 2. No

Part II: Clinical and related variables

Q. No	Question item	Response
201	What is the main psychiatric diagnosis	1. Schizophrenia spectrum disorders 2. Depressive disorder 3. Anxiety disorder 4. Bipolar disorder 5. Substance use disorder 6. Other (specify_____)
202	Duration of the main psychiatric illness?	 years months
203	How many episodes of relapse have you had over the last 2 years?	1. None 2. One 3. Two 4. More than two
204	Family history of mental illness	1. Yes 2. No
205	History of childhood physical abuse	1. Yes 2. No
206	History of childhood sexual abuse	1. Yes 2. No
207	How many prescribed medications do you take regularly?	
208	In your life, which of the following substances have you ever used (non-medical use only)? Multiple answers are possible	1. Tobacco products (cigarettes, chewing tobacco, cigars, etc.) 2. Alcoholic beverages (beer, wine, spirits, etc.) 3. Cannabis (marijuana, pot, grass, hash, etc.) 4. Cocaine (coke, crack, etc.) 5. Amphetamine-type stimulants (khat, speed, meth, ecstasy, etc.)

		6. Inhalants (nitrous, glue, petrol, paint thinner, etc.) 7. Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.) 8. Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)
209	In the past three months, how often have you used the substances you mentioned (first drug, second drug, etc)?	1. Never 2. Once or twice 3. Monthly 4. Weekly 5. Daily or almost daily
210	Duration of substance use	_____ years _____ months
211	History of suicidal attempt	1. Yes 2. No

Part III: Social support assessing items

Q.no	Question item	Categories/alternative
301	How many people are you so close to that you can count on them if you have great personal problem?	1. None 2. 1-2 3. 3-5 4. 5+
302	How much interest and concern do people show in what you do?	1. None 2. Little 3. Uncertain 4. Some 5. A lot
303	How easy is it to get practical help from others if you should need it?	1. Very difficult 2. Difficult 3. Possible 4. Easy 5. Very easy

Part IV: Medication adherence scale

Questions (adopted from Morisky medication adherence 8-scale)	Possible answers	
	Yes	No
401. Do you sometimes forget to take your medications?		
402. Over the past 2 weeks, were there any days when you did not take your medicine?		
403. Have you ever cut back or stopped taking your medication without telling your doctor because you felt worse when you took it?		

404. When you travel or leave home, do you sometimes forget to bring along your medications?		
405. Did you take your medicine yesterday?		
406. When you feel like your illness is under control, do you sometimes stop taking your medicine?		
407. Taking medication every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan?		
408. How often do you have difficulty remembering to take all your medication? (select one below) Never-----rarely-----not sure -----often -----Always -----		

Part V: PDQ-4 Personality Questionnaire

Instruction: The purpose of this personality questionnaire is for you to describe the kind of person you are. When answering the questions, think about how you have tended to feel, think, and act over the past several years.

Please answer either True or False to each item.

T (True) means that the statement is generally true for you.

F (False) means that the statement is generally false for you.

Even if you are not entirely sure about the answer, indicate “T” or “F” for every question.

	Questions (adopted from PDQ-4)	Possible answers	
		True	False
501	I avoid working with others who may criticize me.	Av	
502	I make friends with people only when I am sure they like me.		
503	I am inhibited in my intimate relationships because I am afraid of being ridiculed.		
504	I am more sensitive to criticism or rejection than most people.		
505	I am afraid to meet new people because I feel inadequate.		
506	I suffer from low self esteem.		
507	In new situations, I fear being embarrassed.		
508	I can't make decisions without the advice or reassurance of others.	Dep	
509	I prefer that other people assume responsibility for me.		
510	I fear losing the support of others if I disagree with them.		
511	I find it difficult to start something if I have to do it by myself.		
512	I want people to like me so much that I volunteer to do things that I'd rather not do.		
513	When alone, I feel helpless and unable to care for myself.		
514	When a close relationship ends, I need to get involved with someone else immediately.		
515	I am terrified of being left to care for myself.		
516	I often get lost in details and lose sight of the “big picture.”	OC	
517	I waste time trying to make things too perfect.		
518	I put my work ahead of being with family or friends or friends having fun.		
519	I have a higher sense of morality than other people.		

520	I have accumulated lots of things that I don't need but I can't bear to throw out.		
521	If others can't do things correctly, I would prefer to do them myself.		
522	I see myself as thrifty but others see me as being cheap.		
523	People complain that I'm "stubborn as a mule."		

Thank your respondent!

Name of data collector-----

Name of supervisor-----

-

sig. & date -----

sig. & date -----

Annex 3- Information sheet for the study in amharic

እኔ፣ ይህንን ሰነድ በመፈረም፣ የክላስተር ሲ. ስብዕና መዛባት መጠን እና ተያያዝ መክንያቶች የአዕምሮ ህክምና ተመላላሽ ታካሚዎች ላይ በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ፣ አዲስ አበባ፣ ኢትዮጵያ በሚባለው ጥናት ላይ ለመሳተፍ ፈቃዴን እሰጣለሁ። የዚህ ጥናት አላማ በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ህክምና ኮሌጅ የአዕምሮ ህክምና ተመላላሽ ታካሚዎች ዘንድ የክላስተር ሲ. ስብዕና መዛባት እና ተያያዝ መክንያቶች መጠን ለመዳሰስ እንደሆነ ተነግሮኛል። በዚህ ጥናት ውስጥ መሳተፍ ሙሉ በሙሉ በፈቃደኝነት ላይ የተመሰረተ እንደሆነ ተረድቻለሁ። ለጥያቄዎቹ የምስጠው መልስ ጥናቱን ከሚያካሂደው ቡድን አባላት በስተቀር ለሌላ ሰው እንደማይሰጥ ተነግሮኛል፤ እናም የዚህ ጥናት ዘገባ በምንም መልኩ ማንነቴን የሚግጽ አይሆንም። ህክምናዬ ላይ አስተዋፅኦ ያለው መረጃ ሲገኝ ለሚያክመኝ ህኪም ማሳወቂያ እንደሚደርስ ተገንዝቢያለሁ። የእኔ ተሳትፎ ወይም አለመሳተፍ ወይም ለጥያቄዎች መልስ አለመስጠት በእኔ ላይ ምንም ተጽእኖ እንደሌለው ተነግሮኛል። በዚህ ጥናት ውስጥ መሳተፍ ለአደጋ እንደማያጋልጥ ተረድቻለሁ። ስለጥናቱ ወይም የተሳታፊነት መብቴ ዙሪያ ጥያቄዎች ካሉኝ ተጠሪ ማኅሌት ብርሃኑ (ስልክቁጥር፡ +251911762325) እንደሆነኝ ተረድቻለሁ።

- ጥያቄ አሎት?
- ለመቀጠል የእርስዎ ስምምነት አለኝ?
 - አዎ ከሆነ ቀጥል ☐
 - አዎ ካልሆነ አቁም ☐

Annex 4- Amharic version questionnaire

ይህ በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሕክምና ኮሌጅ፣ አዲስ አበባ፣ ኢትዮጵያ፣ የአዕምሮ ህክምና ተመላላሽ ታካሚዎች ዘንድ ያለውን የክላስቲክ ሲስብዕና መዛባት እና ተያያዝ መክንያቶች መጠን ለመገምገም የሚያገለግል መጠይቅ ነው።

001. መረጃ ሰብሳቢ፡ ኮድ ____/____/____ ስም _____

002. መለያ ቁጥር _____

003. MRN: _____

እባክዎን ምላሾችን ከዚህ በታች በቀረቡት ጥያቄዎች ፊት ይክበቡ፣ ይመሉ ወይም ምልክት ያድርጉ።

ክፍል 1፡ ማህበራዊ እና ግላዊ መረጃ

ቁጥር	ጥያቄ	ምድቦች / አማራጭ
101	ፆታ	3. ወንድ 4. ሴት
102	እድሜ (በአመት)	-----
103	የትምህርት ደረጃ	1. መፃፍ/ ማንበብ የይችል/ የማትችል 2. መፃፍ እና ማንበብ የሚችል/ የምትችል 3. አንደኛ ደረጃ 4. ሁለትኛ ደረጃ 5. ኮሌጅ ዲፕሎም እና ክዛ ብላይ
104	ስራ	1. ንጋዴ 2. የምንግስት ስራ 3. የግል ስራ 4. ተማሪ 5. የቤት እመቤት 6. ስር የሌለው 7. ሌላ (ግልጽ-----)
105	የትዳር ሁኔታ	1. ያላግባ 2. ያገባ 3. የትልያየ 4. ይተፋታ 5. በሞት የትልያየ
106	የቤትዎ ወርሃዊ ግቢ መጠን	ብር

107	ያሳዳግዎ ቤትስብ	1. እናት እና አባት 2. እናት ብቻ 3. አባት ብቻ 4. ሌላ
108	ያሎት እህት እና ወንድም ብዛት (በሂውት ያሉ)	_____
109	ብልጅነትዎ ውላጅ በሞት አጥተው ነበር?	3. አዎ 4. አይ
110	የጤና መድሃኒት ተጠቃሚ ነዎት?	1. አዎ 2. አይ

ክፍል 2: ከሊኒካል እና ተዛማጅ መረጃዎች

ቁጥር	ጥያቄ	ምላሽ
201	እስካሁን የሚታወቀው የአዕምሮ ህመም አይነት	1. ስኬዶሪኒያ ስፔክትረም ዲሳኦርድር 7. ዲፕረሲቭ ዲሳኦርድር 8. ኤንግዛይቲ ዲሳኦርድር 9. ባይፖላር ዲሳኦርድር 10. ሰብስታንስ ዩዝ ዲሳኦርድር 11. ሌላ (ግልጽ _____ _____)
202	የሚታወቀው የአዕምሮ ህመም የቆየበት ጊዜ መጠን	 አመታት ወራት
203	ባልፉት 2 አምታት ሀመሙ ምን ያህል ጊዜ አግርሽ?	5. ምንም 6. አንድ ጊዜ 7. ሁለት ጊዜ 8. ከሁለት ጊዜ ብላይ
204	በቤተሰብ የአዕምሮ ጤና እክል ያለው ሰው አለ?	1. አዎ 2. አይ
205	ብልጅነትዎ አካላዊ ጥቃት አጋጥሞት ነበር?	1. አዎ 2. አይ
206	ብልጅነትዎ ወሲባዊ ጥቃት አጋጥሞት ነበር?	1. አዎ 2. አይ
207	ምን ያህል የታዘዙ መድሃኒቶች በመደበኛነት ይወስዳሉ?	3.
208	በህይወትዎ ከሚከተሉት ንጥረ ነገሮች ውስጥ የትኛውን ተጠቅመው ያውቃሉ (ከህክምና አገልግሎት ውጪ ብቻ) ?	1. የትምባሆ ምርቶች (ሲጋራዎች፣ ትምባሆ

	በርካታ መልሶች ሊመርጡ ይችላሉ።	ማንኛውን ወዘተ) 2. የአልኮል መጠጦች (ቢራ፣ ወይን፣ ወዘተ) 3. ካፍቢስ/ ማሪዋ 4. ኮኬይን 5. የአምፌታሚን ዓይነት አነቃቂዎች (ጫት፣ ኤክስታሲ፣ ወዘተ) 6. የሚተነፍሱ (ናይትሪስ፣ ሙጫ፣ ቤንዚን፣ ቀለም ማቅጠኛ፣ ወዘተ.) 7. የእንቅልፍ ክኒኖች (ዲያኬፓም፣ አልፕራዛም፣ ሚዳዛም፣ ወዘተ) 8. አፒዮይድ (ሄሮይን፣ ሞርፊን፣ ሜታዶን፣ ቡፕረኖርፊን፣ ኮዴይን፣ ወዘተ)
209	ባለፉት ሶስት ወራት ውስጥ፣ ምን ያህል ጊዜ የጠቀሱትን ንጥረ ነገሮች ተጠቅመዋል?	1. አልተጠቀምኩም 2. አንድ ጊዜ 3. ሁለት ጊዜ 4. በወር አንድ ጊዜ 5. በሳምንት አንድ ጊዜ 6. በቀን በቀን
210	መጠቀም ከጀመሩ ምን ያክል ጊዜ ሆነ?	_____ አመታት _____ ወራት
211	ራስን የማጥፋት ሙከራ አድርገው ያውቃሉ?	3. አዎ 4. አይ

ክፍል 3፡ የማህበራዊ ድጋፍ ዳሰሳ

ቁጥር	ጥያቄ	ምድቦች / አማራጭ
301	ትልቅ የግል ችግር ካጋጠመዎ በእነሱ ላይ ልትተማመንባቸው የምትችል ሰንት ሰዎች ብቅርብዎ አሉ?	1. ምንም 2. 1-2 3. 3-5 4. 5+
302	ሰዎች እርሶ በሚያደርጉት ነገር ላይ ምን ያህል ፍላጎት እና አሳቢነት ያሳያሉ?	1. ምንም 2. ትንሽ 3. እርግጠኝኛ ያልሆነ

		4. ምልሰትኛ 5. ብዙ
303	እርዳታ ሲያስፈልግህ ከሌሎች ማግኘት ምን ያህል ቀላል ነው?	1. በጣም ከባድ 2. ከባድ 3. ይቻላል 4. ቅላል 5. በጣም ቅላል

ክፍል 4 : የመድኃኒት አጠቃቀም ዳሰሳ

ጥያቄ (ከ MMAS-8 የተወሰደ)	መልሶች	
	አዎ	አይ
401. አንዳንድ ጊዜ መድሃኒቶችን መውሰድ ይረሳሉ?		
402. ባለፉት 2 ሳምንታት መድሃኒትን ያልወሰዱባቸው ቀናት ነበሩ?		
403. መድሃኒቱን ሲወስዱ የባሰ ስሜት ስለሰማዎት ለሐኪም ሳይናገሩ አቋርጠው ያውቃሉ?		
404. ሲጓዙ ወይም ከቤት ሲወጡ አንዳንድ ጊዜ መድሃኒቶችን ይዘው መውጣት ይረሳሉ?		
405. ትናንት መድሃኒትን ወስደዋል?		
406. ህመም በቁጥጥር ስር እንደዋለ ሲሰማዎት አንዳንድ ጊዜ መድሃኒትን መውሰድ ያቆማሉ?		
407. በየቀኑ መድሃኒት መውሰድ ለአንዳንድ ሰዎች እውነተኛ ችግር ነው። የመድሃኒት ፕሮግራምን ለምክትል ተቸግረው ያውቃሉ?		
408. ሁሉንም መድሃኒቶችን ለመውሰድ ምን ያህል ጊዜ ማስታወስ ይቸገራሉ? (ከታች አንዱን ይምረጡ) መቼው-----አልፎ አልፎ----- እርግጠኛ ያልሆነ-----በዙ ጊዜ -----ሁሌ -----		

ክፍል 5: PDQ-4 የስብዕና መጠይቅ

መመሪያ: የዚህ ስብዕና መጠይቅ አላማ እርስዎ ምን ዓይነት ሰው እንደሆኑ እንዲገልጹ ነው። ለጥያቄዎቹ መልስ ሲሰጡ፣ ባለፉት በርካታ አመታት ምን እንደሚሰማዎት፣ እንደሚያስቡ እና መን ሲያደርጉ እንደነበር ያስቡ።

እባኩን ለእያንዳንዱ ጥያቄ እውነት ወይም ሀሰት ይመልሱ

- (እውነት) ማለት መግለጫው በአጠቃላይ ለእርስዎ እውነት ነው ማለት ነው
- (ሐሰት) ማለት በአጠቃላይ መግለጫው ለእርስዎ ውሸት ነው ማለት ነው

ስለ መልሱ ሙሉ በሙሉ እርግጠኛ ባይሆኑም ለእያንዳንዱ ጥያቄ "እውነት" ወይም "ሐሰት" ያመልክቱ

	ጥያቄ (ከPDQ-4 የተወሰደ)	መልሶች	
		እውነት	ሀሰት
501	ከሚነቅፉኝ ሰዎች ጋር አብሬ ከመሥራት እቆጠባለሁ		

502	ከሰዎች ጋር ጓደኛ የምሆነው እንደሚወዱኝ ሳረጋግጥ ብቻ ነው		
503	ፌዝ ስለምፈራ የጥበቅ ግንኙንቶች ለመመስረት እቸግራለሁ		
504	ትችት ወይም ምገፋት ከብዙ ሰዎች የበለጠ ስሜታዊ ያረገኘል		
505	በቂ እንዳልሆንኩ ስለሚሰማኝ ኦዲዲስ ሰዎችን ለማግኘት እፈራለሁ		
506	ለራሴ ያለኝ ግምት ዝቅተኛ ነው		
507	በኦዲስ ሁኔታዎች ውስጥ መዋረድ እፈራለሁ		
508	ያለሌሎች ምክር ወይም ማረጋገጫ ውሳኔ ማድረግ አልችልም		
509	ሌሎች ሰዎች ስለ እኔ ኃላፊነት እንዲወስዱ እፈልጋለሁ		
510	ከሰዎች ጋር ባልመስማማተ ድጋፋችውን እንዳላጣ እፈራለሁ		
511	እኔ ብቻዬን ማድረግ ካለብኝ አንድን ነገር መጀመር ይከብደኛል		
512	ሰዎች እንዲወዱኝ ስለምፈልግ የማልፈልገውን ነገር ለማድረግ ፈቃደኛ ነኝ		
513	ብቻዬን ስሆን ረዳት እንደሌለኝ እና እራሴን መንከባከብ እንደማልችል ይሰማኛል		
514	አንድ የጠበቀ ግንኙነት ሲያልቅ ወዲያውኑ ከሌላ ሰው ጋር መቀላቀል አለብኝ		
515	እራሴን ብራሴ ለመንከባከብ መተዉ እፈራለሁ		
516	ብዙ ጊዜ ብጥቃቅን ነገሮች እማረክና እና ጠቅለል የሚለውን እይታ እስታለሁ		
517	ነገሮችን በጣም ፍጹም ለማድረግ በመሞከር ጊዜዬን አጠፋለሁ		
518	ከቤተሰብ ወይም ከጓደኞቼ ጋር ከመደሰት ይልቅ ስራዬን አስቀድማለሁ		
519	ከሌሎች ሰዎች የበለጠ ስነምግባር አለኝ		
520	ብዙ የማያስፈልጉኝን ነገሮች አከማችቻለሁ ነገር ግን መጣል አልችልም		
521	ሌሎች ነገሮችን በትክክል ማድረግ ካልቻሉ እኔ ራሴ ማድረግ እመርጣለሁ		
522	እኔ ራሴን እንደ ቆጣቢ ነው የማየው ነገር ግን ሌሎች እንደ ርካሽ አድርገው ይመለከቱኛል		
523	ሰዎች “እንደ በቅሎ ግትር ነው/ናት” በማለት ያማርራሉ		

እናምሰግናልን!

የመረጃ ሰብሳቢ ስም: _____

የተቆጣጣሪ ስም: _____

ቀን እና ፊርማ _____

ቀን እና ፊርማ _____