

P-ISSN: 2706-7483
E-ISSN: 2706-7491
IJGGE 2019; 1(2): 08-16
<https://www.geojournal.net>
Received: 07-04-2019
Accepted: 05-05-2019

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Psycho-social characteristics of mental disorder patients in Thiruvananthapuram District: A geo medical study

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Abstract

Health is a multi-dimensional process involving the wellbeing of the whole person in the context of the environment. Mental health is the level of psychological well-being or an absence of mental illness. Medical geography is a comparative study of the incidence of diseases and the distribution of physiological traits in people belonging to different communities throughout the world. The present study is to analyse and evaluate the mental health of patients in Thiruvananthapuram district, Kerala and nature of the disorder. The study also helps to understand psycho-social characteristics of age and sex wise distribution of patients in Thiruvananthapuram. This offers a wider scope to find out the environmental conditions to both disease and in addition it helps to provide most appropriate description for its present standard of efficiency and remedies. The main objective of the study is to analyse nature of the disorder in age and gender variation. The primary survey conducted was based on the method of stratified random sampling and a total 120 sample were collected. Z-score analysis data were used for SPSS Package. It includes mapping of the disease using the GIS software of Arc GIS. In the study we were able to find out that the Thiruvananthapuram taluk of the Thiruvananthapuram district have more mental disordered patients compared to other. Educational qualification and age group are not barriers for the mental disorder. Increased level of stress and tension in urban area also accelerate the number of disorder cases. Large amount of substance abuse also an important cause to the increasing number of mental disorder.

Keywords: Mental health, mental disorder, psychosocial characteristics, Z score, SPSS-GIS

1. Introduction

Diseases are not uniformly distributed over the surface of the earth [1, 2, 3]. There are different patterns of distribution of various diseases [4, 5, 6]. Medical geography as the study of geographical factors concerned with cause and effect of health and disease [7, 8]. Since then the analysis of health and disease through man-environment relationships has attracted the attention of geographers to work in medical geography and has emerged as a specialized branch of geography [9, 10].

Medical geography is a comparative study of the incidence of diseases and the distribution of physiological traits in people belonging to different communities throughout the world and the correlation of these traits with different aspects of the environment [11, 12, 13]. Medical geography has been used rather as an etiological research tool with emphasis on reducing mankind's load of suffering from ill-health [14, 15, 16, 17]. Perhaps the specialization lies in the type of data which individual geographer can most often use [18, 19, 20, 21].

Mental health is the level of psychological well-being or an absence of mental illness [22, 23, 24, 25]. It is the state of someone who is "functioning at a satisfactory level of emotional and behavioral adjustment [26, 27, 28, 29]. From the perspectives of positive psychology or of holism, mental health may include an individual's ability to enjoy life and to create a balance between life activities and efforts to achieve psychological resilience [30, 31, 32].

Research on mental illness is evolving. As time passes, more mental illnesses are being discovered and diagnosed [33, 34]. Some of the more common and well researched mental illnesses, by category of illness, include:

- Mood disorders (affective disorders): Depression, mania and bipolar
- Anxiety disorders: Generalized anxiety disorder, post-traumatic stress disorder, obsessive-compulsive disorder, panic disorder
- Psychotic disorders: schizophrenia

- Concurrent disorders: addictions and substance abuse
- Personality disorders: antisocial personality disorder,

obsessive-compulsive personality disorder

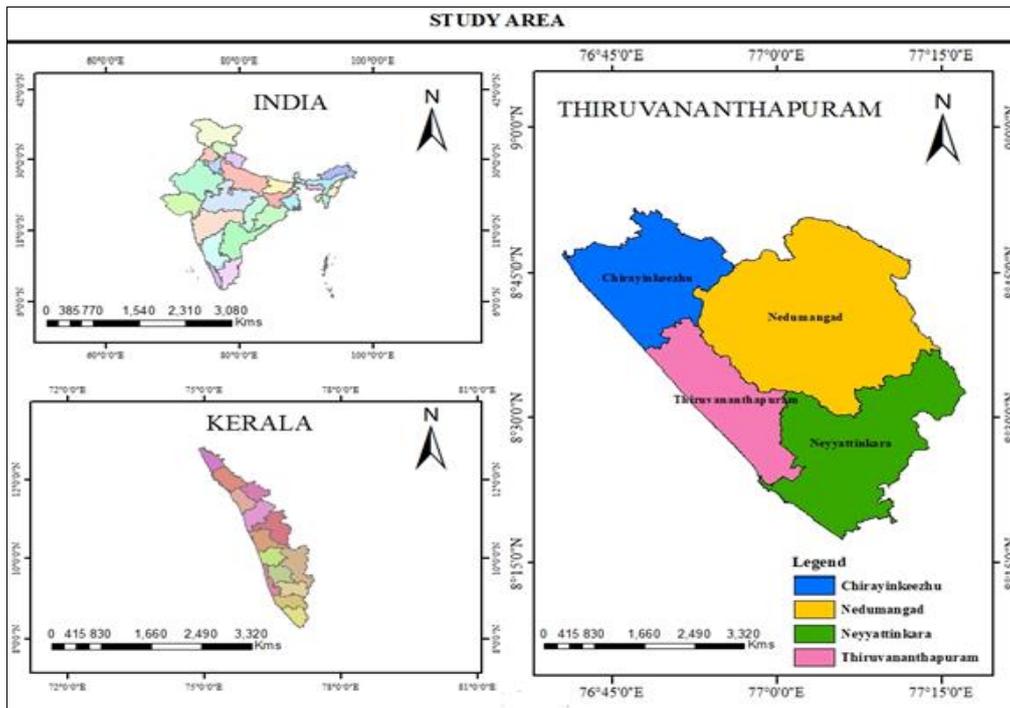


Fig 1: Location of study area

2. Study Area

Trivandrum, the southernmost district of the Kerala State, is situated between North latitude of 8°16'59" and 8°49'59", East longitude of 76°28'59" and 77°16'59", covers a geographical ambience of 2192 sq. km which house the capital city of Kerala State (Fig 1)

3. Aims and Objectives

The main objectives of the study are; In this paper we discussed about gender, marital status, age group and educational qualification of the patients. Through this study and analysis we were able to understand that gender, marital status, age group and educational qualification were not a barrier for persons from affecting mental disorder.

- To analyse the spatial distribution of mental disorder patients in the Thiruvananthapuram in taluk wise and to map out them using GIS software.
- To analyse nature of the disorder in age and gender variation
- To analyse the symptoms shows by the patients.

4. Methodology

The data selected for the present study were biased on the availability of the data from primary as well as secondary sources. The primary data was collected by administering a questionnaire to the patients who admitted in the mental hospital from the taluks. The secondary data was collected from the records of the mental hospital considered, from the census handbooks

The samples were selected on the basis of random sampling method and the number was considered on the basis of the total number of patients were admitted there. The information collected through questionnaire are the socio-economic conditions of the patients, reason caused for the disorder, number of years the disorder prevailing, nature of

the disorder, treatment used and symptoms that were show by the patients. The primary survey conducted was based on the method of stratified random sampling and a total 120 sample were collected. Z-score analysis data were used for SPSS (Statistical Program Social Science) Package.

5. Respondent of Mental Disorder Patients

5.1 Age Structure

The age group is a major aspect in mental health studies. An analysis of various age groups would reveal the type of disorder they suffer from. In the sample survey, about 25.71% of the respondents were between the age group of >45 and 55.14% of them were the age group 30-45. Likewise around 17.14% of the respondents are in 15-30 age groups and 2 percentage of people was the age group between 0-15. Least visiting age group of people visiting to the hospital was 0-15 (Table 1)

5.2 Gender

Gender is also a major aspect in mental health studies. The male respondents constitute 56.6% and female respondents constitute 43.3%. (Table 2)

5.3 Education

Education is one of the main important criteria. 20% of the patients have elementary education and 37.14% of them have high school education.(Table 3) 25.71% have a higher secondary education and about 14.28% have a Graduation. 2.85% have a Post-Graduation Degree. Highly qualified persons are also a patient.

Table 1: Age Group

Gender	% of respondent
Female	43.3
Male	56.6

Table 2: Gender

Age Group	% of respondent
0-15	2.00
15-30	17.14
30-45	55.14
Above 45	25.71

Table 3: Education Status

Education	% of the respondent
Elementary	20.00
High School	37.14
Higher Secondary	25.71
Graduation	14.28
Post-Graduation	02.85

Table 4: Types of Disorder

Types of Disorder	% of the respondent
Mood Disorder	28.57
Personality Disorder	5.71
Psychotic Disorder	42.85
Substance Disorder	22.85

Table 5: Factors Caused

Factors Caused	% of the respondent
Genetic/Biological	14.28
Drugs and Alcohol abuse	22.85
Personality Factors	11.42
Early life Environment	8.57
Trauma and Stress	42.85

6. Types of Disorder

Patients show different type of disorder (Fig 2). 28.57% of the patients show mood disorder and 5.71% shows Personality Disorder.42.85% shows the Psychotic Disorder and 22.85% shows Substance Disorder.(Table 4)

6.1 Factors Caused

Genetic or biological factors are the 14.28% of the reason for the disorder and 22.85% caused by Drugs and Alcohol abuse. (Fig 3) Personality Factors are the 11.42% causes for the disorder and early life Environment are the 8.57%. Trauma and Stress are the 42.85%. (Table 5)

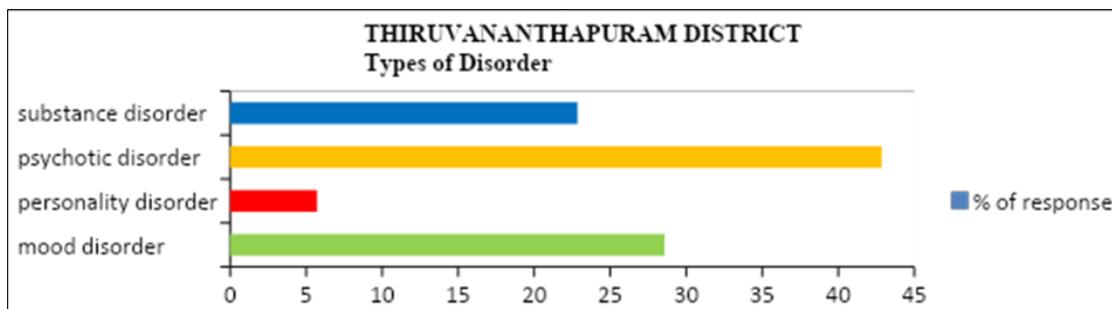


Fig 2: Types of mental disorder

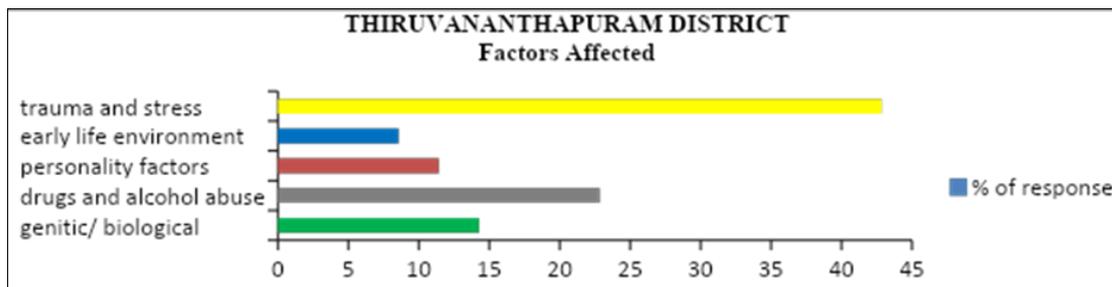


Fig 3: Factor responsibility of mental disorder

7. Geo- Spatial ‘Z’ Sore analysis of Psycho Social Characteristic of mental disorder

7.1 Gender

Gender is not a factor that acts like a barrier against mental disorders. These disorder affected people without and discrimination of gender. Both male and female are affected by this. The map shows the female and male disorder patients distribution in Trivandrum district at taluk wise. (Table 6) Z-Score analysis was done for the preparation of the maps. Male patients are more Thiruvananthapuram taluk (1.47) and less in Chirayinkeezhu (-0.66) and Nedumangad taluk (-.060), Neyyattinkara taluk (-0.21) has moderate number of patients (Fig 4). Female patients are more in Thiruvananthapuram taluk (1.50) and less in Chirayinkeezhu, (-.057) Nedumangadu (-0.46) and Neyyattinkara (-0.46). (Fig 5)

Table 6: Gender Variation

Taluk	Z Score Value			
	Age 0-15	Age 15-35	Age 35-55	Age above55
Neyyattinkara	0.99	-0.24	-0.42	-0.37
Nedumangadu	-1.39	-0.62	-0.33	-0.62
Trivandrum	0.20	1.48	1.48	1.49
Chirayinkeezhu	0.20	-0.62	-0.73	-0.50

Table 7: Age Group of the Patients

Taluk	Z Score Value	
	Male	Female
Neyyattinkara	-0.21	-0.46
Nedumangadu	-0.60	-0.46
Trivandrum	1.47	1.50
Chirayinkeezhu	-0.66	-0.57

7.2 Age Group

Disorder patients were classified into four on the basis of age group. They are 0-15, 15-35, 35-55, and above 55. (Table 7) Compared to other age groups 0-15 is less affected and mostly affected age group is above 55 groups. Because of their mental stress, alcoholic habits and also the surroundings they live.

Disorder patients between 0-15 age group distributions in the taluk wise of Thiruvananthapuram district.(Fig 6) Compared to Nedumangadu taluk (-1.39) the patients are more in Neyyattinkara taluk (0.99). Both Chirayinkeezhu (0.20) and Thiruvananthapuram taluk (0.20) having almost equal level of patients.

The map Fig 7 helps to analyse and understand of disorder patients between 15-35 age group distributions in the taluk

wise of Thiruvananthapuram district. Here the highest number of patients can see in the taluk Thiruvananthapuram (1.48). The lowest number of patients is in both taluks Chirayinkeezhu (-0.62) and Nedumangadu (-0.24). Compared to other taluks Neyyattinkara taluk having very low patients.

Disorder patients between 35-55 age group distributions in the taluk wise of Thiruvananthapuram district.(Fig 8) The Number of patients increased in Thiruvananthapuram taluk (1.48) and decreased in both taluks Neyyattinkara(-0.42) and Chirayinkeezhu (-0.73). Compared to other taluks Nedumangadu Taluk having moderate patients. The above age group 55 to show (Fig 9) in the maximum reported case in Thiruvananthapuram (1.49).

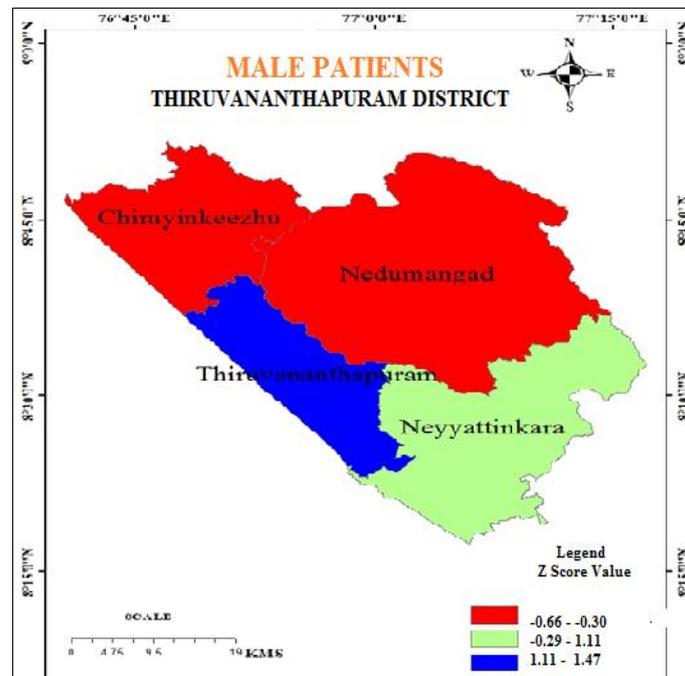


Fig 4: Male mental disorder patients

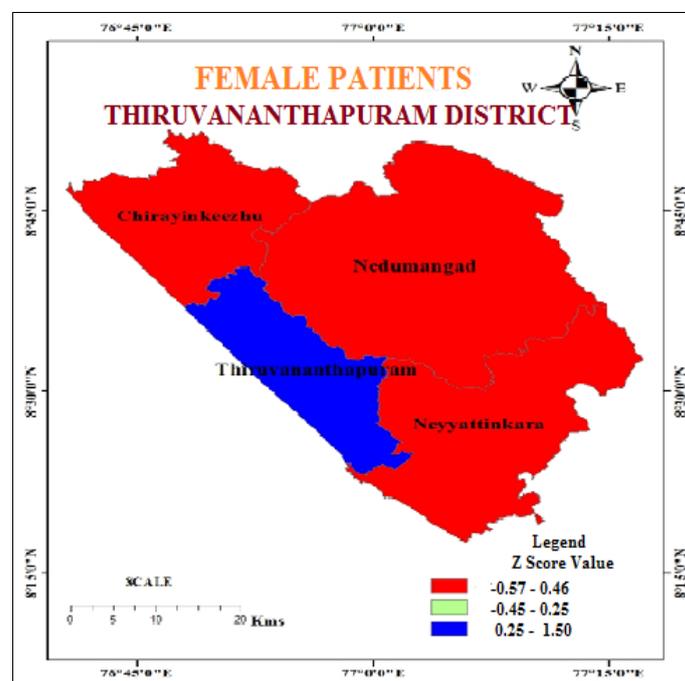


Fig 5: Female mental disorder patients

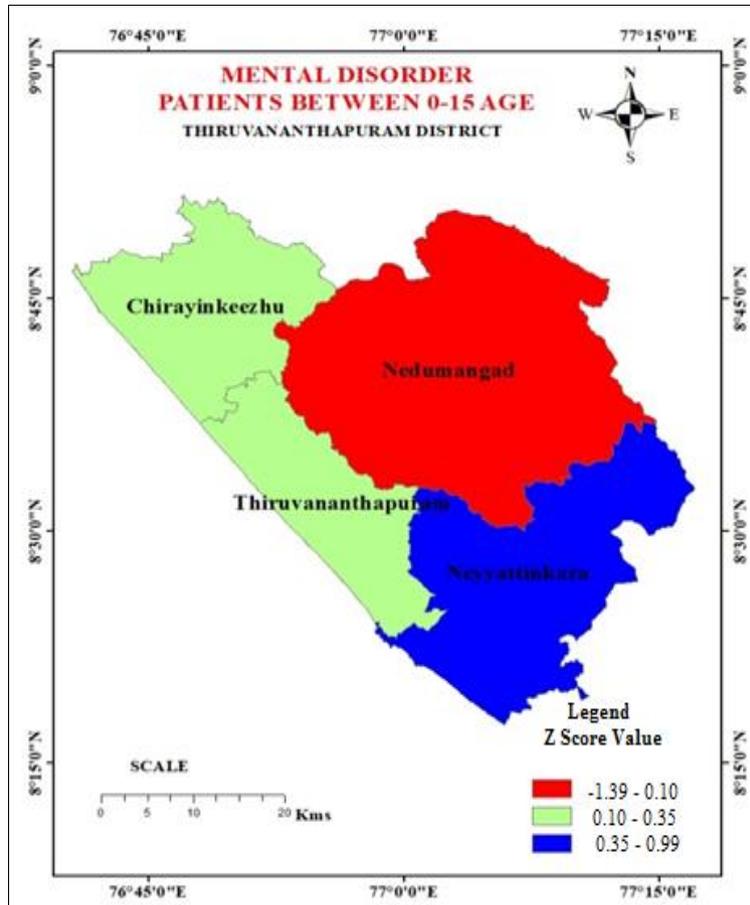


Fig 6: Mental disorder in the age group of 0-15

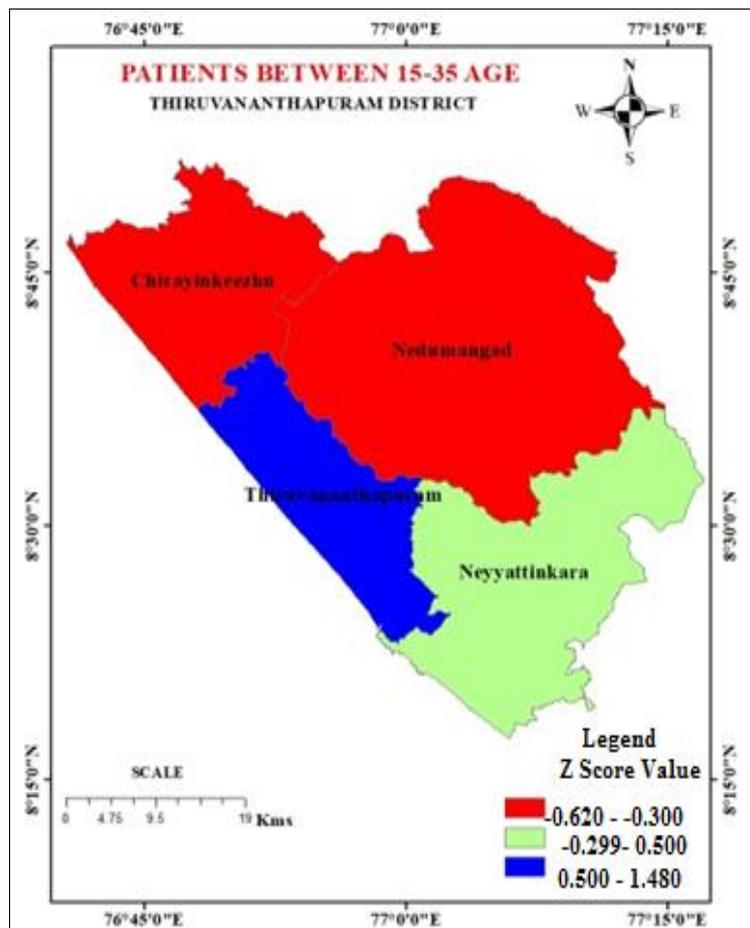


Fig 7: Mental disorder in the age group of 15-35

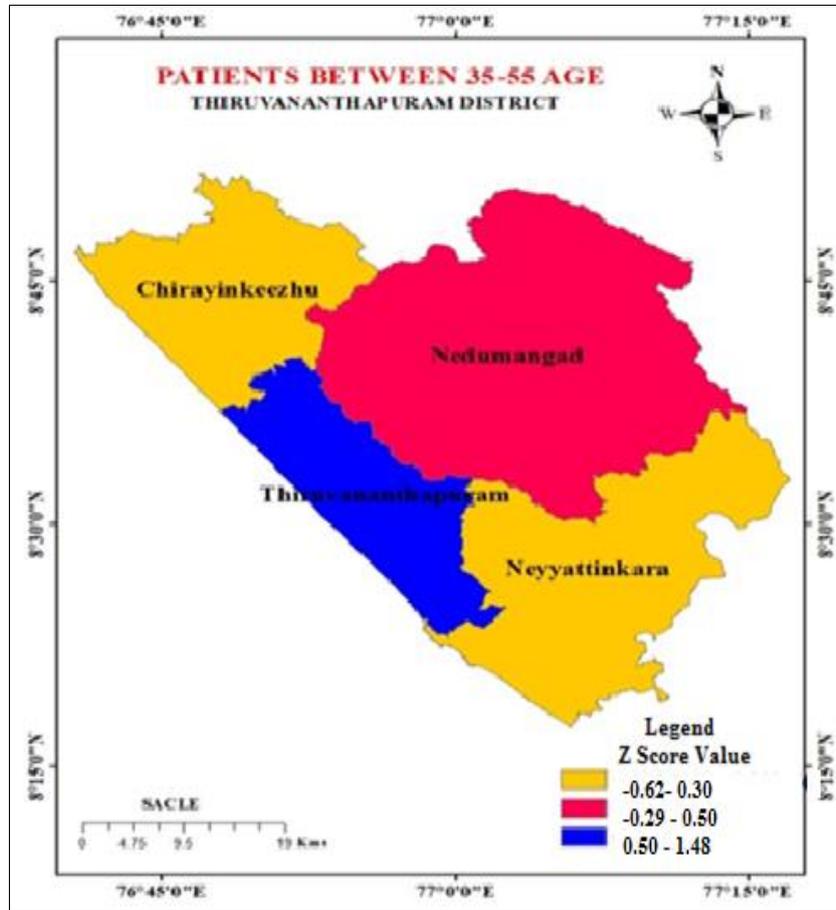


Fig 8: Mental disorder in the age group of 35-55

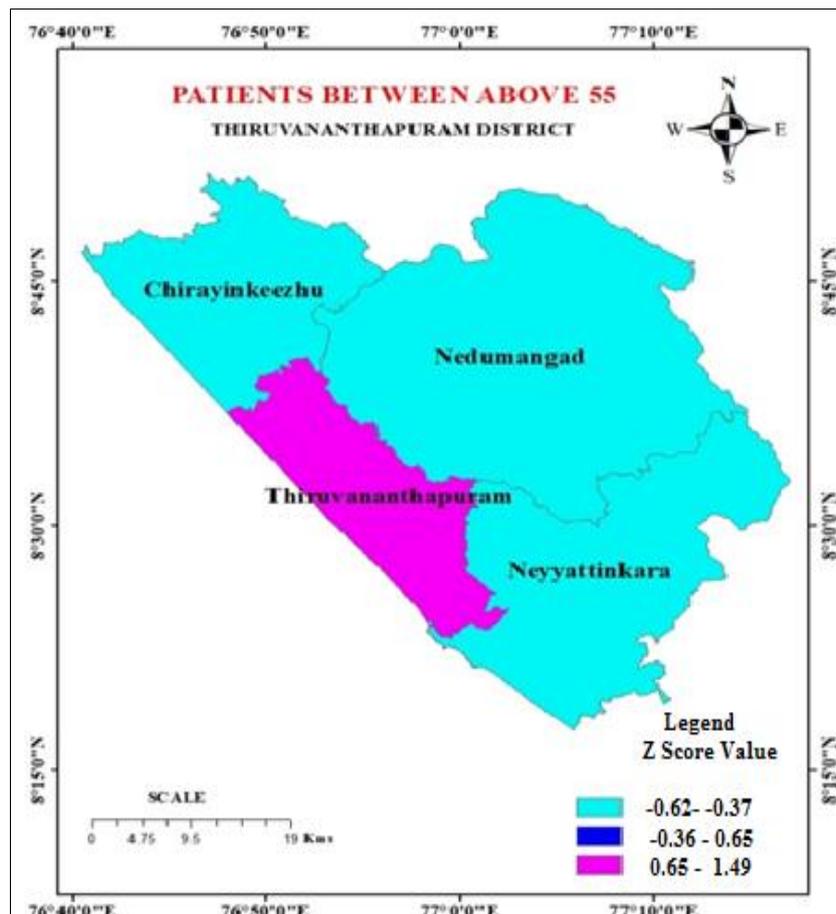


Fig 9: Mental disorder in the age group of >55

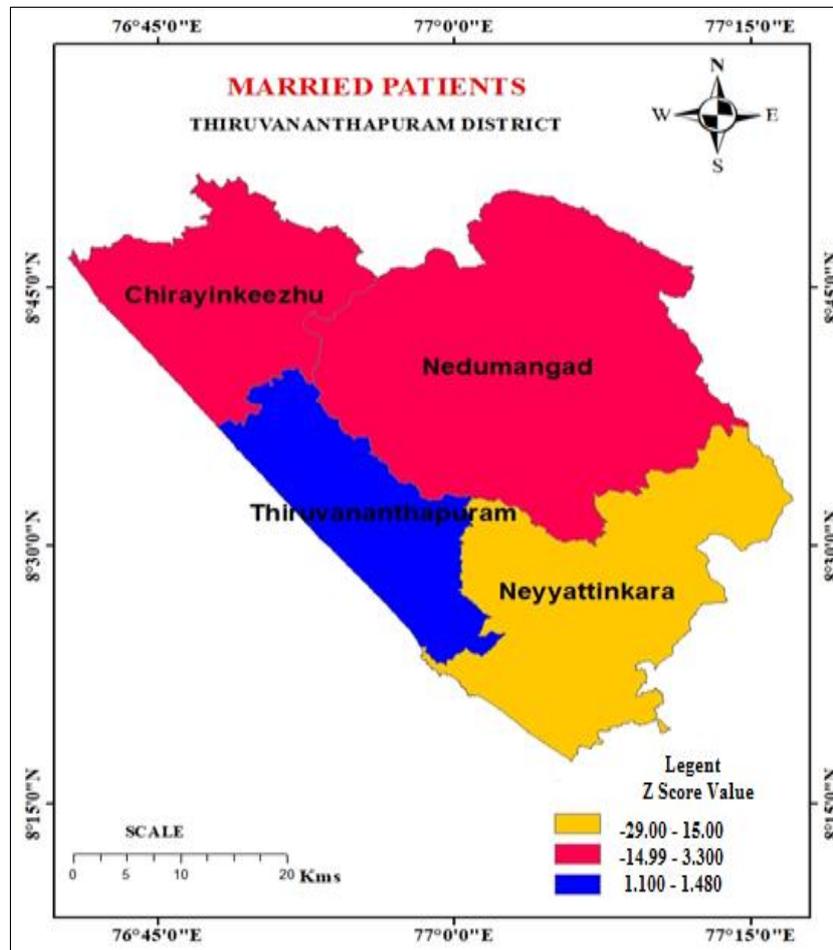


Fig 10: Married mental disorder patients

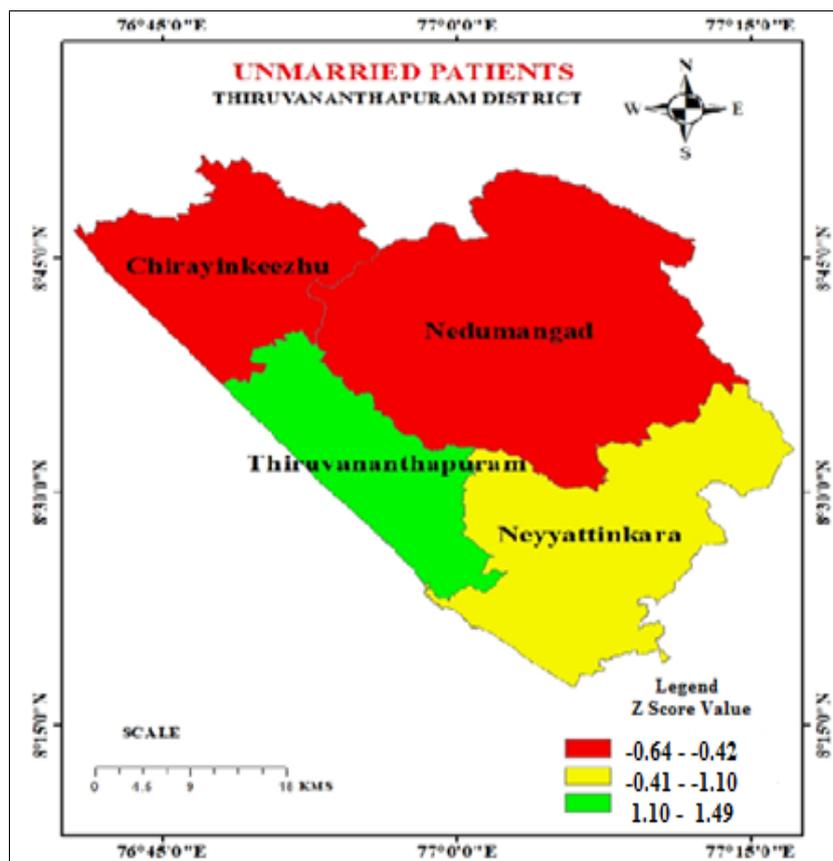


Fig 11: Unmarried mental disorder patients

7.3 Marital Status

Marriage is not a barrier factor for mental disorders. It depends upon their history, environment, and stress level. Fig 10 shows the distribution of married disordered patients and Fig 11 shows the distribution of unmarried disordered patients in Thiruvananthapuram district in taluk wise.

Table 8: Marital Status

Taluk	Married	Unmarried
Neyyattinkara	-0.29	-0.34
Nedumangadu	-0.60	-0.51
Trivandrum	1.48	1.49
Chirayinkeezhu	-0.60	-0.64

Table 9: Educational qualification of patients

Taluk	Elementary	High school	Graduate
Neyyattinkara	-0.37	-0.31	0.78
Nedumangadu	-0.56	-0.50	-1.31
Trivandrum	1.49	1.48	-0.26
Chirayinkeezhu	-0.56	-0.67	0.78

7.4 Educational Qualification

Disorder patients were classified mainly, three groups. According to the education qualification, the classifications are Elementary education, High school education, and Graduation. Compared to other education status Elementary educated people are mostly affected and Graduated people are less affected by mental disorders. Education is a big factor in the growing period of a child, so it directly and indirectly, influence and sketch their character. These type of behavioural changes makes to convert their ways.

The number of Elementary disorder patients increased in Thiruvananthapuram taluk (0.60) and the number of elementary disorder patients decreased in both taluks Chirayinkeezhu and Nedumangadu (-0.56).

High school education of taluk wise distribution in the Thiruvananthapuram district. The percentage of patients higher in Thiruvananthapuram taluk (0.10) and the percentage of patients lower in Nedumangadu and Chirayinkeezhu taluks (0.67).

Here the table shows the distinction of patients higher in both Neyyattinkara and Chirayinkeezhu taluks (0.20) lower in Nedumangadu and Thiruvananthapuram taluks (-1.31).

8. Conclusion

Health is a multi-dimensional process involving the wellbeing of the whole person in the context of the environment. Health is a condition or quality of the human organism expressing the adequate functioning of the organism in given conditions, genetic or environmental. Health is one of the major dimensions in the socio economic development. The development in the health condition and in the field of health studies is essential for the sustainable economic and social development, thus increasing the life expectancy and the health condition of the people. The social value of health care have recently emphasized the ecological approach to human health, as the human system involves constant adjustment to determination in the social, biological and physical environment. In the present study we were able to find out that the Thiruvananthapuram taluk of the Thiruvananthapuram district have more mental disordered patients compared to other. Educational qualification and age group are not a barriers for the mental disorder. Increased level of stress and tension in urban area

also accelerate the number of disorder cases. Large amount of substance abuse also an important cause to the increasing number of mental disorder.

The present study is to analyse and evaluate the mental health of patients in Thiruvananthapuram district, Kerala and nature of the disorder. The present study also helps to understand the age wise distribution of patients in Thiruvananthapuram. This offers a wider scope to find out the environmental conditions to both disease and in addition it helps to provide most appropriate description for its present standard of efficiency and remedies.

Ethical approval

Ethical approval not required. This article does not contain any studies with human participants or animals performed by any of the authors.

Conflict of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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