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Psychiatric Morbidity in Geriatric in patients with Medical Disorders

Purkanti Shwetha

Assistant Professor, Department of Psychiatry Ayaan Institute of Medical Sciences Kanakamamidii, RR District, Telangana, India

Abstract

Background and objective: People over the age of 65 account for twice the average number of physician interactions and three times the average number of hospital bed days compared to the general population. Geriatric medical patients are distinguished from their younger counterparts by the presence of medical comorbidities and disabilities, rather than by their age, according to research conducted by the American Academy of Pediatrics. The current investigator was unable to locate any published studies that compared psychiatric morbidity in geriatric inpatients with medical diseases to that of adult inpatients with medical disorders in either age group, which was disappointing.The goal is to This study aims to determine the prevalence and nature of psychiatric problems in geriatric inpatients with medical diseases, as well as the relationship between clinical and sociodemographic profiles in this population when compared with that of adult inpatients with medical disorders.**Methods:** A total of one hundred consecutive geriatric inpatients and fifty consecutive adult inpatients admitted to the medical wards were evaluated in this study. The MINI Plus and Comprehensive Psychopathology Rating Scale (CPRS) were used to assess psychiatric morbidity, the Mini Mental State Examination (MMSE), the Clock Drawing Test (CDT), and the Trail Making Test- B (TMT-B) were used to assess cognitive impairment, and the Bristol Activities of Daily Living Scale was used to assess functional status (BADLS). The Diagnostic Criteria for Research (DCR-10), which is part of the ICD-10 Classification of Mental and Behavioral Disorders, was utilised to determine a psychiatric diagnosis.**Results:** The prevalence of psychiatric illness in the geriatric population is 26.75 percent, while it is 35 percent in the non-geriatric population. Depressive disorders accounted for 17.5 percent of all mental diseases identified in the elderly, followed by dementia (8.75 percent), anxiety disorder (5 percent), alcohol dependence syndrome (2.5 percent), and organic delusional disorder (0.5 percent) (1.25 percent). The duration of medical disease, the number of medical diagnoses, cognitive functioning, and functional status all have a substantial impact on the risk of developing psychiatric morbidity. In the elderly, diabetes has a high association with psychopathology. The presence of psychiatric morbidity is not associated with gender, marital status, educational level, or socioeconomic situation.**Conclusion:** When compared to their younger counterparts with medical problems, elderly inpatients with medical disorders have much more frequent and severe psychopathology, as well as cognitive and functional impairment. But there is no difference in the frequency or character of psychiatric diagnoses in geriatric patients with medical diseases compared to adult patients with medical disorders.

Keywords: Elderly, medical disorders, psychiatric morbidity, cognitive impairment, functional status.

Introduction

Individuals who practice geriatric psychiatry or geriatric medicine are classified as specialists in their respective fields of psychiatry or medicine, respectively. It is important to remember that the elderly are not just chronologically older adults, just as children are not considered to be small adults. There are significant biopsychosocial variations between them that have an impact on their treatment. For example, older patients have significantly greater biological heterogeneity, more physical and cognitive comorbidity, a higher risk of most side effects from medications, including drug–drug interactions, as well as aging-related socioeconomic stressors such as retirement, the death of a loved one, and financial hardships. These issues are exacerbated by therapeutic pessimism (and even nihilism), which is promoted by widespread societal and professional ageism and nihilistic thinking [1]. Psychiatric care for the elderly serves as a model for contemporary medicine in many respects. A multidisciplinary approach is essential to deal with the wide variety of assessment and treatment difficulties that are involved. After all, older adults are more likely to have more than one medical condition, to be taking many drugs, and to be experiencing significant limits (vision, hearing, mobility, cognition, finances).

It is not necessary to regard ageing as a negative period of life that is connected with widespread disease degradation. There is a propensity to conflate the consequences of old age with those of its common, but not inevitability associated with other conditions. In this way, medical morbidity grows with age, but many physical ailments may be controlled more effectively than in the past, and some (such as dietary deficiencies) can be avoided altogether. As a result of the diversified treatment of numerous physical problems by different specialists, which has resulted in polypharmacy, it has been shown to have a negative impact on the treatment of mental disorders in senior people. [2] Mental health treatments for older individuals with psychiatric symptoms are often negatively affected by psychosocial factors such as financial difficulty and a lack of adequate community resources. Improved health care, more societal value placed on the elderly, and a more positive picture of old age can all make a big difference in how well people age.It is possible that ageing and aging-associated disorders (such as metabolic and vascular diseases) will have an impact on the expression and management of mental illnesses in the future. In spite of this, studies of psychiatric epidemiology have a tendency to ignore elderly people. 1 False is the commonly held belief that psychiatric illnesses are uncommon among the older population. It is based on studies such as the Epidemiologic Catchment Area (ECA) research undertaken by the National Institute of Mental Health in the early 1980s that this misperception is pervasive even among non-geriatric mental health professionals. People older than 65 years of age who fit criteria for psychiatric diseases other than dementia, according to the ECA study, account for 13 percent of the population. Due to a variety of factors, including misattribution of psychiatric symptoms (by patients, caregivers, and raters) to other causes, such as cognitive impairment, physical disorders, or "normal ageing," a lack

*Correspondence

Dr Purkanti Shwetha

Assistant Professor, Department of Psychiatry Ayaan Institute of Medical Sciences Kanakamamidii, RR District, Telangana, India

E-mail: drshwetha.purkanti@gmail.com

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of age-appropriate diagnostic criteria for major psychiatric disorders, such as substance abuse or dependence, and underreporting of psychological symptoms due to forgetfulness and social stigma, this figure is likely to be significantly understated. The "true" prevalence of psychiatric diseases other than dementia in elderly people is likely to be at least 25 percent higher—that is, larger than 16 percent—than the official prevalence. As a result of this, more than 10% of the elderly population suffers from dementia, most commonly of the Alzheimer's variety; neuropsychiatric behavioural disturbances are common in patients suffering from dementia, with approximately 3% of the total elderly population exhibiting psychotic and/or depressive symptoms at any given time. This means that approximately 20 percent of those over the age of 65 would exhibit diagnosable psychopathological symptoms. Those suffering from delirium or other "mental disorders related to general medical problems" [DSM-IV], which are particularly prevalent in the senior population, are not included in this number. [6]. One of the most significant reasons for the failure to identify and treat psychiatric illnesses in geriatric medical settings is the lack of readily available psychiatric expertise in these settings. A collaborative form of care may be beneficial to be particularly critical in the case of elderly patients with a variety of medical difficulties and who frequently do not seek treatment in geographically different psychiatric clinics, or whose management necessitates a comprehensive examination of both medical and mental diseases [6[Although this is the case, there is a scarcity of literature in this topic. The current investigator was unable to locate any published studies that compared psychiatric morbidity in geriatric inpatients with medical diseases to that of adult inpatients with medical disorders in either age group, which was disappointing. The current study is an attempt to compare psychiatric morbidity in geriatric inpatients with medical diseases to that in adult inpatients with medical disorders in order to determine whether there is a difference.

Objectives of the Present Study
1. To study the frequency and nature of psychiatric disorders in geriatric inpatients with medical disorders.
2. To study the relationship between psychiatric morbidity and clinical variables.
3. To study the relationship between psychiatric morbidity and sociodemographic profile.

Source Of Data
This clinical study was conducted inAyaan Institute of Medical Sciences.. All geriatric patients admitted in the medical wards of the department of General Medicine of Father Muller Medical College constituted the population for the study. The study was conducted from September 2019 to August 2021.

Method Of Collection Of Data
The sample for the study consisted of 100 consecutive geriatric inpatients admitted in the medical wards who satisfy the inclusion and exclusion criteria.

Inclusion Criteria
1. Age of 65 years and above
2. Those who have given written informed consent

Exclusion Criteria
1. Unconscious patient
2. Severely or terminally ill patient Patient in intensive care unit
3. Past history of primary psychiatric disorders
4. Fifty consecutive adult consenting patients admitted to the medical wards who satisfy the inclusion and exclusion criteria will form the **control** group.

Inclusion Criteria for Controls
1. Non-geriatric adult inpatients
2. Those who have given written informed consent

Exclusion Criteria
1. Unconscious patient
2. Severely or terminally ill patient
3. Patient in intensive care unit
4. Past history of primary psychiatric disorders

Procedure
A written informed consent was obtained for participation in the study from all subjects and controls recruited for the study after explaining the purpose and design of the study. The socio- demographic and clinical variables were recorded in a specific proforma prepared for the study. The subjects underwent screening for psychiatric disorders using MINI Plus. The Comprehensive Psychopathology Rating Scale (CPRS) was used for the assessment of severity of psychopathology in those who screened positive on MINI Plus. Cognitive functions were assessed using Mini Mental State Examination (MMSE), Clock Drawing Test (CDT) and Trail Making Test B (TMT-B). Assessment of the functional status was done using Bristol Activities ofDaily Living Scale.

Statistical Analysis
The following statistical methods were used to analyze the data:
1. t test
2. Chi square test
3. Pearson's correlation

Results

Table 1: Frequency distribution of age in study groups

Age	Group 1(N=80)		Group 2 (N=40)	
	n	%	n	%
18-39 yrs.	0	0	10	38
40-64 yrs.	1	0	20	62
65-70 yrs.	50	62.5	6	0
71-75 yrs.	10	12.5	4	0
76-80 yrs.	10	12	0	0
81-85 yrs.	8	6	0	0
Above 85	1	1	0	0

Group 1: Geriatric adults; Group 2: Non-geriatric adults. The mean age in group 1 was 71 years and 42 years in group 2.

Table 2: Frequency distribution of gender in the study groups

Sex	Group 1 (N=100)		Group 2 (N=40)	
	n	%	n	%
Male	60	75	30	75
Female	20	25	10	25

Group1: Geriatric adults; Group2: Non-geriatric adults

There is no significant difference in gender between the two groups (χ^2=.781;p>0.05). Gender was not a confounding factor in the statistical analyses.

Table 3: Data regarding duration of medical illness

Duration of Medical Illness (years)	Group 1 (N= 80)		Group 2 (N=40)	
	n	%	n	%
0-1	3	3.75	22	55
2-5	26	32.5	10	25
6-10	26	32.5	6	15
>10	25	31.25	2	5

Group 1: Geriatric adults; Group2: Non-geriatric adults

There is very highly significant difference in duration of medical illness between the two groups (χ2=73.023; p<0.001). Thirty seven percent of the geriatric inpatients had duration of medical illness of 6-10 years compared to 15 % of non-geriatric adult controls. Thirty five percent of the geriatric inpatients had duration of medical illness of more than 10 years compared to 5 % of controls.

Table 4: Data regarding number of medical diagnoses

Number of Medical Diagnoses	Group 1 (N=100)		Group 2 (N=20)	
	n	%	n	%
1	17	21.25	20	50
2	29	36.25	14	35
3	20	25	6	15
4	11	13.75	0	0
5	3	3.75	0	0

Group1: Geriatric adults; Group2: Non-geriatric adults

There is very highly significant difference between the two groups in number of medical diagnoses (χ^2=30.826; p<0.001). In group 1, 21.25 % had 2 medical diagnoses; 50 %, 13.75 % and 3.75 % had 3, 6 and 5 medical diagnoses respectively in comparison to only 8% ingroup 2 who had 3 medical diagnoses.

Table 5: Data regarding medical diagnoses

Medical Diagnoses	Group 1 (N= 80)		Group 2 (N=40)	
	n	%	n	%
Gynecological	1	1.25	0	0
Diabetes mellitus	26	32.5	8	20
Hypertension	35	43.75	4	10
Respiratory	35	43.75	7	17.5
Others	33	41.25	10	25
Neurological	10	12.5	1	2.5
Cardiovascular	25	31.25	2	5
Neoplasms	12	15	1	2.5
Genitourinary	11	13.75	0	0
Arthritis	2	2.5	3	7.5
Endocrinal	1	1.25	1	2.5
Infections	28	35	24	60

Group1: Geriatric adults; Group2: Non-geriatric adults

Some very highly significant differences between the two groups were noted in terms of nature medical diagnoses. The geriatric inpatient group had more patients with hypertension (43.75 %) compared to 10 % in non-geriatric controls (χ^2=15.665; p<0.001). Similarly, respiratory conditions were seen in 43.75% and 17% in group 1 and 2 respectively (χ^2=11.538; p<0.001); cardiovascular conditions in 31.25 % and 5 % in group 1 & 2 respectively (χ^2=10.626; p<0.001). In group1, 15% had neoplasm compared to only 2.5 % in group 2 (χ^2=4.211; p<0.05). Infections were diagnosed significantly more in group 2 (60 %) compared to 35 % in group 1 (χ^2=6.380; p<0.05). No significant differences seen with respect to other medical diagnoses were seen between the groups.

Table 6: Data regarding frequency of psychiatric diagnosis

MINI Plus diagnosis	Group 1 (N=80)		Group 2 (N=40)	
	n	%	n	%
Present	21	26.25	12	30
Absent	59	73.75	28	70

Group1: Geriatric adults; Group2: Non-geriatric adults

Among the patients in group 1, 26.25 % had a DCR-10 psychiatric diagnosis obtained using MINI Plus. In group 2, 12 (30 %) had a psychiatric diagnosis. No statistical difference seen (χ^2=.143; p>0.05).

Table 7: Nature of psychiatric morbidity

MINI Plus Diagnoses	Group 1 (N=80)		Group 2 (N=40)	
	N	%	n	%
Alzheimer's disease	5	6.25	0	0
Multi-infarct dementia	1	1.25	0	0

Alcohol dependence syndrome	2	2.5	4	10
Mild depressive episode	3	3.75	2	5
Moderate depression without somatic syndrome	3	3.75	1	2.5
Dysthymia	5	6.25	2	5
Anxiety disorder unspecified	3	3.75	1	2.5
Adjustment disorder; brief depressive reaction	2	2.5	2	5
Organic delusional disorder	1	1.25	0	0

Group1: Geriatric adults; Group2: Non-geriatric adults

Six patients in group 1 had Alzheimer's disease, one had multi-infarct dementia and one was diagnosed with organic delusional disorder. No patient in group 2 had these diagnoses. Ten percent of patients in group 2 and 2.5 % in group 1 were diagnosed with alcohol dependence syndrome. Mild depressive episode and dysthymia was diagnosed with equal frequency in both groups. Anxiety disorder was diagnosed in 3.75% and 2.5 % in group 1 and group 2 respectively. Three patients each in both groups were diagnosed with adjustment disorder; brief depressive reaction. No significant difference noted with psychiatric morbidity between the two groups (χ^2=12.063; p>0.05).

Table 8: Comparison of MMSE scores

	Groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
MMSE	Group 1	80	24.98	2.78	0.307			
Score	Group 2	40	26.98	1.698	0.214	5.003	132	P<0.001

Group1: Geriatric adults; Group2: Non-geriatric adults

A very highly significant difference was noted with respect to MMSE scores between the two groups. Patients in group 1 had lower MMSE scores compared to patients in group 2.

Table 9: Comparison of clock drawing test in study groups

	Groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
Clock drawing test	Group 1	80	3.14	0.764	0.081	5.19	132	p<0.001
	Group 2	40	3.12	0.261	0.038			

Group1: Geriatric adults; Group2: Non-geriatric adults

With respect to clock drawing test, a very highly significant difference was noted between the two groups. The mean score in group 1 was lower than group 2.

Table 10: Data regarding TMT-B

TMT-B	Groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
Total time (seconds)	Group 1	80	210.7900	60.01	5.19	6.129	7.256	<0.001
	Group 2	40	143.0800	52.11167	7.36970			
Errors	Group 1	100	1.8600	1.11028	.11103	5.745	113	p<0.001
	Group 2	40	.8600	.94782	.13404			

Group1: Geriatric adults; Group2: Non-geriatric adults

A very highly significant difference was seen in terms of total time taken and number of errors committed in the two groups. The geriatric group took longer time and made more errors than the control group.

Table 11: Relationship between psychiatric morbidity and duration of medicalillness

Groups			DCR-10 Psychiatric diagnosis		Total
			Absent	Present	
Group 1	Duration of medical illness	1-5 years	22	4	26
		>5 years	40	12	52
	Total		62	16	78
Group 2	Duration of medical illness	1-5 years	22	10	32
		>5 years	6	0	6
	Total		28	10	38

Group 1: Geriatric adults; Group 2: Non-geriatric adults

There was a significant difference in terms of duration of medical illness in those with psychiatric morbidity in the geriatric group. Thirty-two elderly patients with more than 5 years duration of medical illness had psychiatric diagnosis (χ^2=5.079; p=0.03<0.05). No significant difference was noted in control group with respect to the same (χ^2=3.165; p=.075>0.05).

Table 12: Correlations between age and clinical variables

Groups			Age (years)
Group 1	CPRS total score	Pearson Correlation	.371**
		Sig. (2-tailed)	.000
	CPRS reported score	Pearson Correlation	.348**

		Sig. (2-tailed)	.000
	CPRS observed score	Pearson Correlation	.247*
		Sig. (2-tailed)	.013
	MMSE	Pearson Correlation	-.422**
		Sig. (2-tailed)	.000
	Clock drawing test	Pearson Correlation	-.468**
		Sig. (2-tailed)	.000
	TMTB total time (seconds)	Pearson Correlation	.464**
		Sig. (2-tailed)	.000
	TMTB errors	Pearson Correlation	.402**
		Sig. (2-tailed)	.000
	BADLS score	Pearson Correlation	.525**
		Sig. (2-tailed)	.000

Group 1: Geriatric adults; Group 2: Non-geriatric adults

Groups		Age (years)	
Group 2	CPRS total score	Pearson Correlation	.212
		Sig. (2-tailed)	.110
	CPRS reported score	Pearson Correlation	.220
		Sig. (2-tailed)	.073
	CPRS observed score	Pearson Correlation	.164
		Sig. (2-tailed)	.201
	MMSE	Pearson Correlation	-.365**
		Sig. (2-tailed)	.009
	Clock drawing test	Pearson Correlation	-.319*
		Sig. (2-tailed)	.025
	TMTB total time (seconds)	Pearson Correlation	.327*
		Sig. (2-tailed)	.020
	TMTB errors	Pearson Correlation	.324*
		Sig. (2-tailed)	.018
	BADLS score	Pearson Correlation	.401**
		Sig. (2-tailed)	.003

Discussion

This observational, analytical, case-control, cross-sectional, clinical study was carried out on consecutive 80 geriatric inpatients and 4 0 adult in patients with medical disorders. These patients were admitted in the wards of the department of medicine of Ayaan Institute of Medical Sciences. By and large patients coming to this hospital belong to middle and lower socio-economic class. The hospital has six general medical units with bed strength of 120 in the medicine department. The average number of patients attending the medical outpatient department is around 150-200, with 30-35 admissions per day. Geriatric patients account for approximately 25% of inpatients. The present study is conducted from September 2019 and data collection was completed by July 31, 2021.

Sociodemographic Variables

The two groups do not differ significantly in terms of sex, religion, caste, domicile, occupation, type of family and socio-economic class. This indicates that the two groups are comparable on these variables. In group 1, most of the patients were between 65 and 70 years of age (60%). This is consistent with the age range of the sample in other studies. [2] Nandi *et al.* [3] Prasad *et al.* [4] and Tiwari and Srivastava [5] reported 87.6%, 74% and 59.70% cases, respectively, in the 60-69 years age range. Nineteen patients in the present study were above 80 years.

Clinical Variables

Thirty seven percent of the geriatric inpatients have duration of medical illness of 6-10 years compared to 15 % of non-geriatric adult controls. Thirty one percent of the geriatric inpatients have duration of medical illness of more than 10 years compared to 2% of controls. Thisdifference is found to be statistically significant and can be explained by the high prevalence of chronic medical disorders in the elderly. In group 1, 29 % had 2 medical diagnoses: 20 %, 11% and 3% had 3, 4 and 5 medical diagnoses respectively which is similar to

the rates reported by earlier researchers. [6, 7, 8] Comorbidity is associated with worse health outcomes, more complex clinical management, and increased health care costs as reviewed by Valders and colleagues. [9]

The most common medical diagnoses observed in the elderly are respiratory diseases (43.75%) followed by, hypertension (43.75%), cardiovascular (31.25%), diabetes mellitus (32.5 %) and neoplasms (15%). Some researchers have reported hypertension to be the most common medical condition.

[9] Osteoarthritis, neoplasms, visual impairment and cardiocasular disease were the most common physical diagnosis in earlier studies. The findings of the present study are similar to thatreported by other authors. [6, 10, 11] Very highly significant differences between the two groups were noted in terms of respiratory diseases, hypertension, cardiovascular and a significant difference with respect to neoplasms. In the present study, no significant differences observed with respect to diabetes mellitus and other medical diagnoses between the groups. Infections weresignificantly diagnosed more in the non-geriatric group.

Psychiatric Morbidity

Frequency and nature of psychiatric morbidity

The present investigator compared the psychiatric morbidity in medically ill geriatric patients with adult patients with medical disorders, which is the uniqueness of this study. The rate of psychiatric co- morbidity in the present study is 26.25% in geriatric group and 35 % in non-geriatric group 2 which is not statistically significant. This frequency is slightly less than the 35.5-63% prevalence reported in most international studies. [12] Indian researchers have found a prevalence rate of 35% to 49% but

consistent with the frequency reported by Unützer and Borson. [6] These wide variations are because of differences in the social and geographical backgrounds. Nandi *et al.[13]* and Tiwari *et al. [5]* observed a prevalence of psychiatric disorders in rural communities to be as high as 33% and 42.2%, respectively.The second most common psychiatric disorder in elderly, in the present study, is dementia (7%). Six geriatric patients are diagnosed with Alzheimer's dementia and one with multi-infarct dementia. The prevalence of dementia in the Indian population differs greatly from the western population. In India, the prevalence of dementia as such was low as reportedby earlier field surveys. [14]With regard to psychopathology in the present study, the elderly in patients with medical disorders have more frequent and severe psychopathology (psychiatric and psychological symptoms not meeting criteria for DCR-10 diagnosis) compared to their younger counterparts with medical disorders. This may be due to the increased prevalence of dementia and the increasein depressive episodes with age. With age in the incidence of organic psychiatric disorders increases, as well as complications from physical illness and sensory impairments. Very highly significant differences were observed on total, reported and observed CPRS scores. Most commonsymptoms reported by patients are sadness, inner tension, worrying over trifles, fatigability, lassitude, concentration difficulty, decreased memory, disturbed sleep and decreased sexual interest. Most common observed symptoms are apparent sadness, distractibility, agitation, and slowness of movements. Depressive symptoms and syndromes are common in the medically ill; although they are frequently unrecognized and untreated. [15]

The present investigation is a cross-sectional, case control study examining the psychiatric morbidity and cognitive impairment in geriatric patients with medical disorders and a control group of non-geriatric adults. The subjects are assessed on one occasion only. The tools used in the present study are standardized and have good psychometric properties in terms of reliability and validity. All the tools are easy to administer, less time consuming, causing no discomfort to the patients, thereby enhancing reliability and validity. The suitability of the methods used to assess cognitive functions is uncertain. The assessment is not blind due to constraints of the study,therefore rater bias is possible. The present investigator used a structured clinical interview to assess psychiatric disorders, although DCR-10 was used to make a psychiatric diagnosis. The present investigation attempted to study the relationship between psychiatric diagnosis and individual medical disorders. However, the small number of psychiatric disorders in the sample and controls does not allow to make conclusive statistical inferences.

Absence of sample selection bias, homogenous sample of geriatric inpatients with medical disorders and the control groups, exclusion of individuals with a past history of a primary psychiatric disorder and use of a clinical structured interview are conspicuous merits of the present study.

To the best knowledge of the present investigator, this is the only study which reports psychiatric morbidity in geriatric inpatients with medical disorders in comparison to that of non-geriatric adult inpatients with medical disorders. Despite its limitations, the present study uniquely and definitely indicates that the elderly and non-elderly do not differ in terms of frequency of psychiatric disorders, but the former have significantly higher psychopathology and cognitive impairment. However, further research is required, to establish this fact with adequate reliability and validity.

Conclusion

It is possible to conclude from the current analysis that geriatric inpatients with medical illnesses have much more psychopathology, cognitive and functional impairment than adult inpatients with medical disorders when compared to the general population.

Conflict of Interest: Nil

Source of support: Nil

Psychiatric illnesses in geriatric and adult patients with medical disorders, on the other hand, are not significantly different in terms of incidence and nature of occurrence. The duration of medical disease, the number of medical diagnoses, cognitive functioning, and functional status all have a substantial impact on the risk of developing psychiatric morbidity. In the elderly, diabetes has a high association with psychopathology. The presence of psychiatric morbidity is not associated with sociodemographic characteristics such as gender, marital status, education, or socioeconomic class. The findings of the current study also imply that additional research in this area is necessary.

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