E-ISSN: 2706-8927
P-ISSN: 2706-8919
www.allstudyjournal.com
IJAAS 2024; 6(5): 96-101
Received: 17-02-2024
Accepted: 23-03-2024

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Investigating the mental health landscape of elderly people attending primary healthcare centers in Baghdad, Iraq

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DOI: https://doi.org/10.33545/27068919.2024.v6.i5b.1176

Abstract
Background: The global population is aging rapidly, with a growing burden of mental health issues among older adults. Iraq faces unique challenges in ensuring the mental well-being of its elderly population due to historical conflict, ongoing social and economic instability, and limited mental healthcare access. The study aimed to investigate the prevalence and risk factors for mental disorders among elderly people attending primary healthcare centers in Baghdad, Iraq.
Methods: This cross-sectional study investigated the prevalence and risk factors for mental disorders (MDs) among elderly patients (aged 60+) attending primary healthcare centers (PHCs) in Baghdad, Iraq. A sample of 331 participants completed a self-administered questionnaire on sociodemographic characteristics, mental health, and chronic health conditions.
Results: Over 23% (n=76) of participants were diagnosed with an MD, significantly higher than the global average. Age, education level, marital status, employment status, income level, smoking history, and chronic health conditions were significantly associated with MDs. Social determinants like dependence on others, visual/auditory impairments, social isolation, economic decline, and neglect/mishandling were also prominent risk factors.
Conclusions: This study identified a concerning prevalence of MDs among elderly PHC attendees in Baghdad. Socioeconomic disadvantages, chronic health issues, and social risk factors significantly contribute to MDs. The findings emphasize the need for a multi-pronged approach: strengthening mental health services within PHCs, promoting social support systems, and implementing preventive measures for chronic diseases and economic insecurity. Future research should explore culturally appropriate interventions to improve the mental well-being of older Iraqis.

Keywords: Elderly, Iraq, primary healthcare, mental disorders, risk factors

Introductions

The world is witnessing a rapid increase in its older population. By 2050, the United Nations predicts one in six individuals will be over 65, posing significant challenges for healthcare systems, particularly regarding the rising burden of mental health issues among older adults [1].

Iraq, undergoing a demographic shift with a growing elderly population, faces unique challenges in ensuring the mental well-being of this age group [2]. The aging process itself can lead to physical and cognitive decline, both contributing to poorer mental health. Older adults are also more susceptible to life stressors that trigger mental health problems, such as bereavement, loss of independence, and social isolation [3].

Iraq's history of conflict and violence has had a detrimental impact on the mental health of the entire population. Continued social and economic instability can exacerbate existing problems and create new ones, particularly among vulnerable groups like the elderly [4].

Despite the recognized importance of mental health in older adults, robust data on the prevalence and risk factors for mental disorders in this population within Iraq is lacking. Existing national surveys might underestimate the true burden due to the stigma surrounding mental illness and limited access to mental health services [5].

Understanding the prevalence and risk factors for mental disorders among Iraq's aging population is crucial to inform the development of effective interventions. By identifying the specific challenges faced by older adults, healthcare policymakers can design targeted

programs and services to address their mental health needs. This is essential to promote their well-being and ensure a better quality of life for a growing demographic [6].

Primary healthcare (PHC) services are ideally positioned to play a key role in identifying and addressing mental health concerns among the elderly. These facilities serve as the first point of contact for many older adults within the healthcare system, allowing rapid detection, care, and support. PHC settings also provide opportunities to educate the elderly, their families, and the community about mental health issues and available interventions [7].

Research on the mental well-being of community-dwelling older adults using PHC services in Baghdad is scarce. This study aims to fill this gap by investigating the prevalence and associated disabilities of mental disorders (MD) in this population. This information will be crucial for healthcare workers to develop and implement necessary preventive and therapeutic strategies.

The study aims and objectives

This study investigates the prevalence and risk factors for mental disorders in elderly patients attending primary healthcare centers (PHCs) in Baghdad, Iraq. Specifically, it aims to:

1. Identify the types and distribution of mental disorders within this population using PHCs.
2. Explore potential risk factors associated with mental disorder development.
3. Enhance understanding of mental healthcare needs among Baghdad's elderly population.

Materials and Methods

Setting and study design: This study used a cross-sectional design in primary healthcare centers (PHCs) in Baghdad/ Iraq, to investigate the prevalence and risk factors for mental disorders among elderly people attending these PHCs from January to March 2021.

Study population

This study recruited participants from among individuals who utilized primary health care (PHC) facilities in Baghdad, Iraq. To be eligible for inclusion, participants had to be 60 years of age or older and attend a PHC clinic during the defined study timeframe. Conversely, those who were cognitively impaired, experiencing severe mental illness and thus unable to provide informed consent, or facing a medical emergency requiring immediate attention were excluded from the study.

Sample Selection

A two-stage cluster sampling design was employed to select a representative sample of health centers in Baghdad. In the first stage, cluster sampling was implemented. Ten sectors from each of the two Baghdad health directorates (Al-Karkh and Al-Rusafa) were identified as the initial sampling frame. A simple random sample of five sectors was then selected from each department, resulting in a total of ten sampled sectors. In the second stage, a single health center was chosen from each sampled sector using simple random sampling. This approach ensures that health centers are selected across various geographical areas within Baghdad, promoting a representative sample and mitigating potential biases associated with selecting health centers from a single department or specific sector.

Sample Size: A common formula for calculating the minimum sample size (n) in cross-sectional studies to estimate a population proportion is $n = (Z^2 * p (1-p)) / d^2$. In this formula, Z represents the standard normal deviate corresponding to the desired confidence level (usually 1.96 for 95% confidence), p represents the estimated prevalence of the outcome variable (e.g., mental disorders in elderly people in this study), and d represents the desired margin of error (Precision). Based on previous studies in the region reporting a 15% prevalence of mental disorders in the elderly population [8-10], the initial calculation yielded a minimum sample size of 261 participants. However, to account for potential non-response or incomplete data, a more conservative approach targeted a sample size of 331. This ensures sufficient statistical power to detect the hypothesized effects with the desired level of confidence.

Data Collection: Data collection in this study employed a two-pronged approach utilizing a self-administered questionnaire. The first instrument, a Sociodemographic and Mental Health Questionnaire, was specifically developed for this study based on a comprehensive literature review [11-14]. This questionnaire gathered data on participants' demographics (Age, gender, marital status, education, residence) alongside factors potentially linked to mental health in older adults. These factors encompassed smoking history, chronic conditions (e.g., cardiovascular disease, diabetes, chronic joint pain), economic status, social support (Living arrangements, social isolation), and experiences of neglect or abuse. Additionally, the questionnaire incorporated validated scales to assess common mental health issues in elderly populations. Established measures like the Kessler Psychological Distress Scale (K10) [15] were employed to quantify depressive and anxious symptoms. Specific validated scales for dementia, substance abuse, and suicidal ideation were included. The self-administered format aimed to minimize interviewer bias and enhance participant comfort when reporting potentially sensitive information. However, researchers were present at the primary healthcare centers (PHCs) to address any questions or concerns participants might encounter while completing the questionnaire.

Data Management and Analysis: Data collected from questionnaires were coded and entered into a statistical software program. Descriptive statistics were used to summarize participant characteristics and the prevalence of mental disorders. Chi-square tests were used to examine associations between independent variables (Sociodemographic and mental health-related factors) and the dependent variable (presence of mental disorders). The level of statistical significance was established at $p \leq 0.05$.

Ethical Considerations

The Research Ethics Committee of the Directorate of Public Health of the Ministry of Health of Iraq approved the protocol of this study. All participants gave their informed consent in writing before to starting the study. The anonymity and confidentiality of the data was maintained throughout the study.

Data availability

Due to ethical considerations and privacy concerns, the data of individual participants cannot be publicly shared.

Results

This study investigated the mental health status and associated factors among elderly individuals attending primary healthcare centers (PHCs) in Baghdad, Iraq. A cross-sectional design was employed, involving a sample of 331 participants.

Table 1 summarizes the baseline demographics of the study population. The majority of participants fell within the 60-69 year age group (63.7%) and was male (57.7%). Geographically, most resided was in the central of Baghdad (83.7%). Educational attainment varied, with nearly half (45.3%) having no formal education or only primary schooling, while approximately 20% held college or postgraduate degrees. Marital status revealed a higher proportion of married participants (69.2%). Only 27.8% reported current employment, and slightly more than half (51.1%) indicated insufficient income. Regarding substance use, smoking was more prevalent (24.8% ex-smokers, 15.4% current smokers), while alcohol consumption was less common (81.3% no history of drinking).

Figure 1 illustrates the distribution of mental health diagnoses. Approximately 23% (n=76) of participants were diagnosed with MD, while 77% (n=255) were classified as not having one.

Figure 2 highlights the prevalence of chronic conditions and socioeconomic factors. A significant proportion of participants reported chronic health issues, with chronic joint pain being the most prevalent (64%). Visual (58%) and auditory (45%) impairments were also common. Additionally, cardiovascular disease (48%), diabetes mellitus (42%), and respiratory disease (24%) were present. Socioeconomic factors further compounded potential challenges, with 34% reporting a decline in economic status and one-third (33%) relying on others for daily living activities. Notably, social isolation and loneliness affected 21% of participants, and 17% reported neglect or mishandling, suggesting potential elder abuse.

Table 2 explores the associations between socio-demographic characteristics and mental disorders. Age played a role, with participants 70 years and older exhibiting a higher prevalence of MD compared to those aged 60-69 ($p = 0.010$). Sex and location within Baghdad did not show statistically significant associations. However, significant relationships emerged with education level, marital status, employment status, income level, and smoking history. Individuals with lower education had a higher MD prevalence compared to those with higher education ($p = 0.001$). Unmarried participants were more likely to experience MD compared to married individuals ($p = 0.001$). Similarly, those not currently working and with insufficient income had a higher MD prevalence ($p = 0.008$, $p = 0.001$, respectively). Current smokers displayed the highest MD prevalence, followed by ex-smokers and non-smokers ($p = 0.001$). Alcohol consumption was not significantly associated with MD ($p = 0.356$).

Table 3 delves into the associations between chronic health conditions and social factors with MD. Social determinants were prominent contributing factors. Participants experiencing dependence on others for daily living, visual or auditory impairment, social isolation/loneliness, economic decline, or neglect/mishandling were significantly more likely to have MD ($p < 0.003$). Chronic health conditions, including cardiovascular disease, respiratory disease, diabetes mellitus, and chronic joint pain, were also associated with a higher MD prevalence ($p < 0.003$). The association between cancer and MD did not reach statistical significance ($p = 0.066$).

Discussion

This study investigated the mental health landscape of elderly people (60 years and older) attending PHC in Baghdad, Iraq. The findings highlight a concerning prevalence of MD in this population, with more than a fifth (23.0%) diagnosed with a condition (Figure 1). This is significantly higher than the global average of 15% reported in previous studies [16].

Comparing our results with recent studies emphasizes the unique challenges faced by older Iraqi citizens. A study in Iran found a prevalence of 38.5% MD among older people attending PHC [9, 10], suggesting a regional trend of greater vulnerability. Factors specific to the Iraqi context, such as ongoing social and political instability, can contribute to this increased burden [4].

The study identified several sociodemographic factors associated with MDs. Age played a role, with a higher prevalence among those 70 and older (Table 2). This is consistent with previous research suggesting increased vulnerability with age. Interestingly, sex did not show a significant difference, contradicting some studies reporting higher rates in women [9, 16].

Education level emerged as a strong protective factor. Higher education individuals had a significantly lower prevalence of MD compared to those with lower education (Table 2). This association between education and mental health has previously been documented [17] and highlights the potential benefits of educational attainment for cognitive reserve and coping mechanisms. Marital status also played a role, with unmarried individuals experiencing a considerably higher rate of MD. Social isolation and the lack of support networks likely contribute to this vulnerability, as observed in other studies [18].

Socioeconomic factors were significantly associated with MD. Participants who reported insufficient income, unemployment, and dependence on others for activities of daily living exhibited a considerably higher prevalence (Table 2). This is consistent with previous research that has demonstrated the well-established link between socioeconomic disadvantage and mental health [18, 19]. Financial stress, the lack of purpose associated with unemployment, and the stress of relying on others can all contribute to psychological distress.

The study revealed a strong association between chronic health conditions and MD (Table 3). Participants with cardiovascular disease, respiratory diseases, diabetes mellitus, and chronic joint pain had a significantly higher prevalence of MD. This co-occurrence is well documented [20], with chronic physical health conditions that affect mood, functionality, and general well-being. In particular, the association with cancer did not reach statistical significance, possibly due to the sample size or specific health conditions present in the study population.

Social determinants of health have become powerful contributors to MDs. Individuals who experienced social isolation, loneliness, economic decline, neglect, and mismanagement were significantly more likely to have a mental disorder (Table 3). These findings highlight the importance of social support systems and a secure environment for the mental health of the elderly. The potential presence of elder abuse requires further investigation, as neglect and mishandling were concerningly prevalent.

Table 1: Characteristics of the study sample

Variables	Category	No.	%
Age group	60-69 years	211	63.7
	≥ 70 years	120	36.3
Sex	Male	191	57.7
	Female	140	42.3
Current residence	Central of Baghdad	277	83.7
	Peripheral of Baghdad	54	16.3
Education level	None or primary school	150	45.3
	Intermediate or secondary school	115	34.7
	College or post-graduate	66	19.9
Current marital state	Married	229	69.2
	Unmarred (Single, Widowed, And Divorced)	102	30.8
Currently work	Yes	92	27.8
	No	239	72.2
Income level	Enough	162	48.9
	Not enough	169	51.1
Smoking history	None	198	59.8
	Ex-smoker	82	24.8
	Current smoker	51	15.4
Alcohol history	None	269	81.3
	Ex-drinker	47	14.2
	Current drinker	15	4.5

Table 2: Distribution of mental disorders by characteristics of the study sample

Variable	Category	MDs No. (%)	Total No. (%)	χ^2	P- value
Age group	60-69 years	39 (18.5)	211 (63.7)	6.596	0.010
	≥ 70 years	37 (30.8)	120 (36.3)		
Sex	Male	38 (19.9)	191 (57.7)	2.399	0.121
	Female	38 (27.1)	140 (42.3)		
Current residence	Central of Baghdad	62 (22.4)	277 (83.7)	0.321	0.571
	Peripheral of Baghdad	14 (25.9)	54 (16.3)		
Education level	None or primary school	55 (36.7)	150 (45.3)	29.502	0.001
	Intermediate or secondary school	15 (13.0)	115 (34.7)		
	College or post-graduate	6 (9.1)	66 (19.9)		
Current marital status	Married	35 (15.3)	229 (69.2)	24.759	0.001
	Unmarried (Single, Widowed, and Divorced)	41 (40.2)	102 (30.8)		
Currently work	Yes	12 (13.0)	92 (27.8)	7.084	0.008
	No	64 (26.8)	239 (72.2)		
Income level	Enough	14 (8.6)	162 (48.9)	36.776	0.001
	Not enough	62 (36.7)	169 (51.1)		
Smoking history	None	22 (11.1)	198 (59.8)	48.679	0.001
	Ex-smoker	26 (31.7)	82 (24.8)		
	Current smoker	28 (54.9)	51 (15.4)		
Alcohol history	None	65 (24.2)	269 (81.3)	2.066	0.356
	Ex-drinker	7 (14.9)	47 (14.2)		
	Current drinker	4 (26.7)	15 (4.5)		

Table 3: Distribution of chronic diseases & social factors associated with mental disorders

Variable	Category	MDs no. (%)	Total no. (%)	χ^2	P-value
Living depends on others	Yes	39 (36.1)	108 (32.6)	15.672	0.001
	No	37 (16.6)	223 (67.4)		
Visual impairment	Yes	60 (31.1)	193 (58.3)	17.287	0.001
	No	16 (11.6)	138 (41.7)		
Auditory impairment	Yes	47 (31.8)	148 (44.7)	11.709	0.002
	No	29 (15.8)	183 (55.3)		
Social isolation and loneliness	Yes	35 (51.5)	68 (20.5)	39.325	0,001
	No	41 (15.6)	263 (79.5)		
Economic state deterioration	Yes	46 (40.4)	114 (34.4)	29.729	0,001
	No	30 (13.8)	217 (65.6)		
Neglect and mishandling	Yes	31 (55.4)	56 (16.9)	39.993	0.001
	No	45 (16.4)	275 (83.1)		
Cardiovascular diseases	Yes	55 (34.6)	159 (48,0)	23.399	0.001
	No	21 (12.2)	172 (52.0)		
Respiratory diseases	Yes	34 (42.5)	80 (24.2)	22.770	0.001
	No	42 (16.7)	251 (75.8)		

DM disease	Yes	43 (31.2)	138 (41.7)	8.994	0.003
	No	33 (17.1)	193 (58.3)		
Chronic joint pain	Yes	65 (30.7)	212 (64.0)	19.763	0.001
	No	11 (9.2)	119 (36.0)		
Cancers	Yes	4 (50.0)	8 (2.4)	3.389	0.066
	No	72 (22.3)	323 (97.8)		

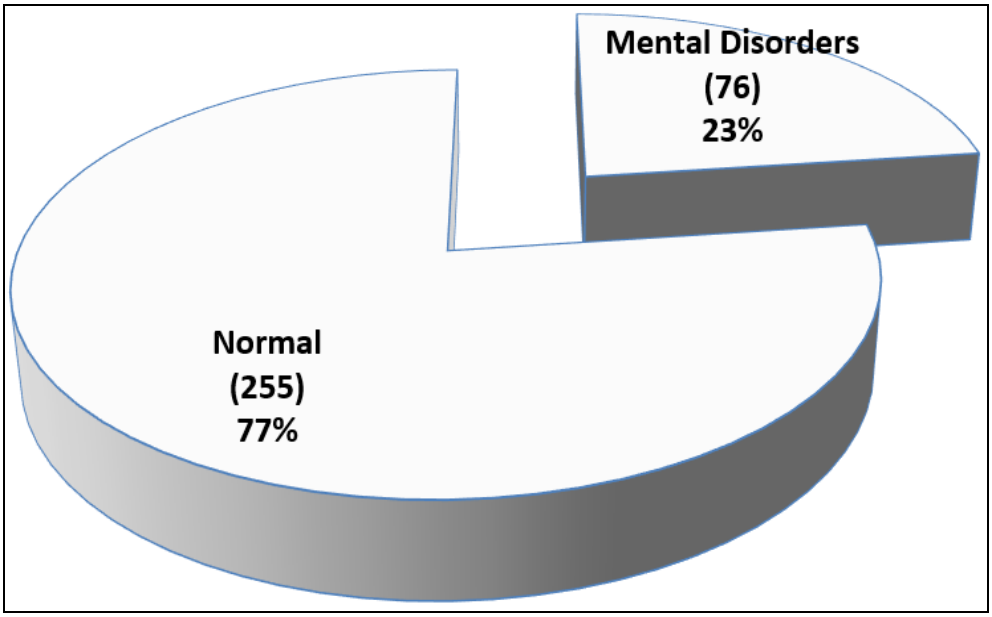

Fig 1: Prevalence of mental disorders among the study sample

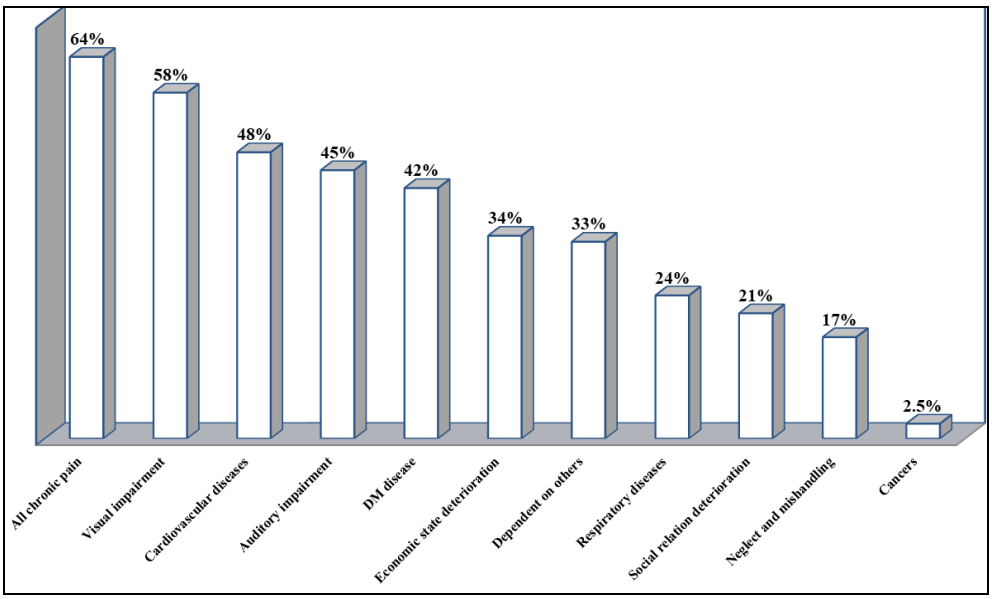

Fig 2: Distribution of chronic disease and social factors among the study sample

Conclusions and recommendations

The study revealed a concerning landscape. Among the study population (n=331), a substantial 23% were diagnosed with a mental disorder. Notably, a high prevalence of both chronic health conditions and social risk factors was identified. Socioeconomic factors such as limited education, unemployment, financial hardship, and dependence on others for daily living significantly correlated with an increased likelihood of mental disorders. Likewise, social isolation, neglect, and chronic health problems like cardiovascular disease, respiratory illness, diabetes, and joint pain emerged as prominent contributing factors.

These findings underscore the critical need for a comprehensive strategy to tackle mental health concerns in Iraq's elderly population. This multifaceted approach should encompass enhanced mental health screening and intervention programs within Primary PHCs to facilitate early detection and treatment. Concurrently, the development of social support services is essential to address issues of isolation and neglect among this vulnerable demographic. Furthermore, promoting healthy aging through preventive measures such as chronic disease management and economic security programs can foster a more supportive environment for mental well-being. To further refine this approach, future research should delve into the specific mental health needs of older Iraqi citizens

and cultivate culturally sensitive interventions to optimize their quality of life.

Acknowledgments: We gratefully acknowledge the 331 elderly participants for sharing their experiences, and the Iraqi Ministry of Health for facilitating data collection at Baghdad's primary healthcare centers.

Conflict of interest: The authors of Riyadh Shiltagh Al-Rudaini, Rana Faeq Saud, and Jawad Kadhim Al-Diwan declare that there is no conflict of interest to the publication of this article.

Financial support: This research was funded by the authors themselves and did not receive external financial support.

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