

Mental Disorders Among Elderly People in Baghdad, Iraq, 2017

INQUIRY: The Journal of Health Care
Organization, Provision, and Financing
Volume 56: 1–8
© The Author(s) 2019
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0046958019845960
journals.sagepub.com/home/inq



Ahmed Abdulameer Ibrahim, MBChB, FETP¹ ,
Faris Al-Lami, MBChB, PhD, FFPH²,
Riyadh Al-Rudainy, MBChB, FICMS/CM³,
and Yousef S. Khader, BDS, MSc, MSPH, MHPE, FFPH, ScD⁴

Abstract

This study aimed to estimate the prevalence and determinants of mental disorders (MDs) among elderly people residing in nursing homes (NHs) and those living with their families (WF) in Baghdad, Iraq, 2017. A cross-sectional study was conducted on all elderly individuals residing in all NHs in Baghdad and an equal number of elderly people residing WF. MDs were defined based on Kessler Psychological Distress Scale (K10). We used relevant World Health Organization–accredited tools to identify the types of MDs. The prevalence of MDs among elderly people was 38.7%, being statistically significantly ($P < .01$) higher among those in NH (55.8%) compared with those living WF (21.5%). The proportion of types of MDs among NH versus WF residents was as follows: depression (35.4% vs 16.6%), anxiety (32.6% vs 9.9%), dementia (19.3% vs 5%), and suicide thoughts (25.4% vs 4.4%). The multivariate analysis showed many factors that were associated with MD. Low income, dependency on others, and being neglected were stronger determinant of MD among elderly people living WF. However, chronic joint pain, visual impairment, auditory impairment, and economic status deterioration were stronger determinant among those in NHs. The prevalence of MDs in the NH is more than double the prevalence in the community. We recommended enhancing elderly mental health care services including curative, preventive, and promotive activities.

Keywords

prevalence, risk factors, Iraq, mental health, nursing homes

What do we already know about this topic?

Elderly people are vulnerable for mental disorders and face special physical and mental health challenges. People in Iraq were exposed to wars and conflicts, which are in turn, affect their mental health. Little is known about the mental health status of elderly people in Iraq.

How does your research contribute to the field?

This study demonstrates the burden of mental health problems among elderly people in a conflict country particularly among those residing in the nursing homes.

What are your research's implications toward theory, practice, or policy?

This study provides baseline data to public health officials at the Ministry of Health in Iraq to improve the mental health status of elderly people. Primary health care professionals should consider the high rate of mental disorders among elderly people in Iraq, screen for these disorders, and refer or treat them.

Introduction

As a result of declining mortality as well as improved public health interventions, population aging has been a worldwide phenomenon.^{1,2} There has been a sharp increase in the number of older persons worldwide and more old people are alive nowadays than at any time in history.^{1–3} Between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%.^{2,3} In Iraq, the proportion of the population aged 60 and above increased from

¹Iraq Ministry of Health, Salah Al-Deen, Iraq

²University of Baghdad, Iraq

³Iraq Ministry of Health, Baghdad, Iraq

⁴Jordan University of Science and Technology, Irbid, Jordan

Received 13 May 2018; revised January 21 2019; revised manuscript accepted 30 March 2019

Corresponding Author:

Ahmed Abdulameer Ibrahim, Iraq Field Epidemiology Training Program, Iraq Ministry of Health, Iraq-Salah Al-Deen, Dujail.
Email: alansariahmed23@yahoo.com



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons

Attribution-NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

3.4% in 2010 to 5% in 2015 according to annual statistical report of Ministry of Health and expected to reach 7.2% in 2050.^{4,5}

Elderly people are vulnerable for mental disorders (MDs) and face special physical and mental health challenges.⁶ Globally, the most common MDs in elderly include dementia (5%-8%), depression (7%), anxiety disorder (4%), and drug abuse (1%). Moreover, 25% of deaths from suicide occur among the elderly.⁶ The World Health Organization estimated that the overall prevalence rate of depression among the elderly generally varies between 10% and 20%, depending on the cultural situations.^{2,3} The Iraqi Mental Health Survey (IMHS) showed a high rate of depressive episode among people 60 year and above with lifetime prevalence reached 13.15% for males and 13.55% for females.⁷

Most elderly people residing in nursing homes (NHs) have complex health problems and severe functional impairment.⁸ NH residents experience stressful events such as relational losses, loss of home, and loss of spouse, relatives, and friends. Such conditions may cause them to experience suffering and affect their mental and physical health.^{8,9} The prevalence of depression in NH population is very high, and prevalence rates among NH residents were found to be up to 3 to 4 times higher than in community-dwelling elderly.¹⁰

Many older adults lose their ability to live independently because of limited mobility, chronic pain, frailty, or other mental or physical problems and require some form of long-term care. In addition, older people are more likely to experience events such as bereavement and a drop in socioeconomic status with retirement or disability. All these factors can result in isolation, loss of independence, loneliness, and psychological distress in older people.^{11,12}

Mental health problems are underidentified by health care professionals and older people themselves, and the stigma surrounding mental illness makes people reluctant to seek help.¹¹ The challenges for public health are to identify risk factors, increase awareness about MDs and effectiveness of treatment, remove the stigma associated with MDs, eliminate health disparities, and improve access to mental health services, particularly among populations that are disproportionately affected.⁴

Over the last 3 decades, Iraq experienced a unique situation due to Gulf wars, sanctions, regime change, and civil unrest that left the country with an extremely complex psychosocial situation.⁷ Besides the scarcity of available health outlets that provide mental health care services to elderly people, health workers are inadequately trained and equipped to provide such services. This study aimed to estimate the prevalence of MDs among elderly people residing in NHs and those living with their families and to determine their associated factors.

Methods

Study Design and Setting

A comparative cross-sectional study was conducted in all elderly NH and in the neighborhood areas of the elderly NH, Baghdad/Iraq during 3 months in 2017. The study included 2 groups of elderly people of both sexes: those who were residing in NH and those who were living within families (WF). All elderly people residing in all the NHs in Baghdad, including Al-Suleikh NH, Al Rashid NH, Al Rahma NH in Al Kadhimeya, and Al Rahma NH in Al Karrada, were selected. A random systematic sample of an equal number of elderly individuals living in their homes with families (WF) who attended the nearest health care centers to the NH for non-psychiatric complaints.

Questionnaire

A self-reported structured questionnaire was developed by the researchers based on the review of different instruments used in other studies.¹³⁻¹⁷ The first section of the questionnaire included data on the sociodemographic characteristics of elderly people including age, sex, residency, marital status, education, job, income level, and current smoking status. The second section included information on geriatric mental health-associated factors such as loss of the ability to live independently, decline in the activity of vision and hearing senses, neglect and mishandling, deterioration of the social and economic situation, and comorbid physical illnesses. The evaluation of the MDs in the elderly was performed using of 10 questions based on Kessler psychological Distress Scale (K10).¹³ Screening for depression was accomplished using a short version of the Geriatric Depression Scale, which includes 15 questions, with a score >10 points indicating depression.¹⁴ Screening for anxiety in the elderly was accomplished using a short version of the brief measure for assessing generalized anxiety disorder, with a score >10 points indicating anxiety.¹⁵ Screening for dementia in the elderly was accomplished using a modified short version of the brief measure for assessing dementia which included 10 questions, with a score >3 points indicating dementia.¹⁶ The evaluation of the substance abuse status was performed using modified set of 7 questions based on Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) version 3.0, with a score >3 point indicative of addiction.¹⁷ Suicide thoughts and attempts were assessed using a direct question. Elderly who reported suicidal thoughts and attempts have been questioned about suicidal attempt methods (burn, hang, gunshots, drug or chemical poisoning, use sharp object, use electricity, fall from a high).

The questionnaire was pilot tested on 10 elderly persons and the necessary changes were made. The study was approved by the Ministry of Labor and Social Affairs and

Table 1. The Sociodemographic Characteristics of Elderly People Living in Nursing Homes and Those Living Within Their Family.

	Elderly people living in nursing homes (N = 181)		Elderly people living with Family (N = 181)		Total	
	n	%	n	%	N	%
Age (years)						
60-69	76	39.0	119	61.0	195	53.9
≥ 70	105	62.9	62	37.1	167	46.1
Sex						
Male	111	50.2	110	49.8	221	61.0
Female	70	49.6	71	50.4	141	39.0
Education						
Primary school or less	94	56.6	72	43.4	166	45.9
Secondary school	63	47.7	69	52.3	132	36.5
College or postgraduate	24	37.5	40	62.5	64	17.7
Current marital status						
Unmarried	142	67.0	70	33.0	212	58.6
Married	39	26.0	111	74.0	150	41.4
Working status						
Currently working	2	3.5	55	96.5	57	15.7
None	179	58.7	126	41.3	305	84.3
Income						
<\$400	138	64.2	77	35.8	215	59.4
≥\$400	43	29.3	104	70.7	147	40.6
Current smoking						
Yes	48	26.5	38	20.9	86	23.8
No	133	73.5	143	79.1	276	76.2

ethical committee at the Ministry of Health. Verbal consent had been obtained from all participants.

Statistical Analysis

The Statistical Package for Social Sciences (SPSS v.21) was used for data entry and analysis. The data had been presented as frequency tables. Chi-square test was used to test association between categorical data. Multivariate binary logistic regression was used to determine factors associated with MDs. The level of significance was set at P value of $\leq .05$.

Results

Participants' Characteristics

A total of 362 elderly peoples—181 (111 males and 70 females) residing in NH and 181 (110 males and 71 females) residing with families (WF)—were included in this study. The participants' characteristics are shown in Table 1. Compared with those who were living WF, elderly people in NH were significantly older, with lower education level, less likely to be married, less likely to have a job, with lower income, and more likely to be smoker. Their social and clinical characteristics are shown in Table 2. Compared with those who were living WF, elderly people in NH were significantly

more likely to report being dependent on others, having social and economic state deterioration, being neglected, and having chronic joint pain, cardiovascular diseases, and respiratory diseases.

Prevalence of MDs Among Elderly People

Table 3 shows the prevalence of MDs among elderly people living in NH and those living WF. Overall, the prevalence of MDs among elderly people was 38.7% (37.1% in male and 41.1% in females), being significantly higher among those in NH (55.8%) compared with those living in their homes WF (21.5%). The prevalence rates of depression, anxiety, dementia, and suicidal thoughts and attempts were significantly higher among those living in NH. Of those with MDs in NH, 63% had depression, 58% had anxiety, 34.6% had dementia, 45.5% had suicide thoughts, and 3% reported substance abuse. Of those with MDs who were living in their homes WF, 77% had depression, 46% had anxiety, 23% had dementia, 20% had suicide thoughts, and 5% reported substance abuse.

The number of elderly individuals who had suicide thoughts in NHs residence was 46. Of those, 20 (43.5%) cases had suicide attempts; 10 (50%) of them attempted suicide by chemical or drugs, 8 (40%) attempted suicide by sharp tools, 1 (5%) attempted suicide by burn, and 1 (5%) attempted suicide by hanging.

Table 2. The Social and Clinical Characteristics of Elderly People Living in Nursing Homes and Those Living Within Their Family.

	Elderly people living in nursing home (N = 181)		Elderly people living with family (N = 181)		Total	
	n	%	n	%	N	%
Independent	37	80.4	9	19.6	46	12.7
Visual impairment	89	47.1	100	52.9	189	52.2
Auditory impairment	51	37.2	86	62.8	137	37.8
Social relations deterioration	145	83.3	29	16.7	174	48.1
Economic state deterioration	123	76.4	38	23.6	161	44.5
Neglect and mishandling	91	90.1	10	9.9	101	27.9
Cardiovascular diseases	110	58.2	79	41.8	189	52.2
Respiratory diseases	43	51.8	40	48.2	83	22.9
Diabetes mellitus	69	48.9	72	51.1	141	39.0
Chronic joint pain	127	58.0	92	42.0	219	60.5

Table 3. The Prevalence of MDs Among Elderly People Living in Nursing Homes and Those Living With Their Families According to Gender.

Variable	Residence						Total N (%)	P value ^a
	Elderly people living in nursing home (N = 181)			Elderly people living with family (N = 181)				
	Males n (%)	Females n (%)	N (%)	Males n (%)	Females n (%)	N (%)		
Any mental disorder	61 (55.0)	40 (57.1)	101 (55.8)	21 (19.1)	18 (25.4)	39 (21.5)	140 (38.7)	<.001
Depression	36 (32.4)	28 (40.0)	64 (35.4)	14 (12.7)	16 (22.5)	30 (16.6)	94 (26.0)	<.001
Anxiety	37 (33.3)	22 (31.4)	59 (32.6)	11 (10.0)	7 (9.9)	18 (9.9)	77 (21.3)	<.001
Dementia	20 (18.0)	15 (21.4)	35 (19.3)	3 (2.7)	6 (8.5)	9 (5.0)	44 (12.2)	<.001
Addiction	2 (1.8)	1 (1.4)	3 (1.7)	1 (0.9)	1 (1.4)	2 (1.1)	5 (1.4)	.969
Suicide thought	27 (24.3)	19 (27.1)	46 (25.4)	5 (4.5)	3 (4.2)	8 (4.4)	54 (14.9)	<.001

^aP value refers to the differences between elderly people living in nursing home and elderly people living with family.

Table 4 shows the prevalence of MDs among elderly people living in NH and those living WF according to sociodemographic and relevant characteristics.

Multivariate Analysis of Factors Associated With MDs

The multivariate analysis showed many factors that were associated with MDs. Low income level, dependency on others, and being neglected were stronger determinant of MDs among elderly people living WF. On the contrary, chronic joint pain, visual impairment, auditory impairment, and economic status deterioration were stronger determinant among those in NH (Table 5).

Discussion

Iraq like most countries in the world is facing the challenge of an aging population. Accordingly, there is a need to understand the commonly occurring disorders in this population.

Many studies were conducted on MDs at different age groups in Iraq, but few studies had tackled the elderly people. In the current study, the prevalence of any MDs in the study sample was 38.7% (55.8% in NH group and 21.5% in WF group). It was higher than the reported prevalence of 18.8% by IMHS.⁷ This high prevalence of MDs is expected as a result of the events of the ongoing violence and the deterioration of security, social, economic and services situation of Iraq.

There is a wide variation in the prevalence of MDs among elderly people between studies, and this might be due to variations in study designs, studied populations, and sample sizes and variation in population personality, resilience, life-style, and social and cultural settings. The prevalence of MDs in Iraqi elderly is little higher than that in the neighboring countries like Iranian elderly (32.2%).¹⁸ The lifetime of having "any mental disorder" in older adults in Lebanon was 17.4% and the 12-month prevalence was 10.6%.¹⁹ In Saudi Arabia, the prevalence was 15.5% in urban areas and 40.4% in rural areas.²⁰ Moreover, the prevalence was higher than that reported in India.²¹ In a US survey, 20.4% of adults aged

Table 4. The Prevalence of Any Mental Disorder Among Elderly People Living in Nursing Homes and Those Living With Their Families.

	Elderly people living in nursing home (N = 181)				Elderly people living with family (N = 181)			
	Total	n	%	P value	Total	n	%	P value
Age				.181				.011
60-69	76	38	50.0		119	19	16.0	
≥70	105	63	60.0		62	20	32.3	
Sex				.773				.317
Male	111	61	55.0		110	21	19.1	
Female	70	40	57.1		71	18	25.4	
Education				<.001				<.001
Primary school or less	94	62	66.0		72	27	37.5	
Intermediate or secondary school	63	33	52.4		69	9	13.0	
College or postgraduate	24	6	25.0		40	3	7.5	
Current marital status				<.001				<.001
Unmarried	142	93	65.5		70	31	44.3	
Married	39	8	20.5		111	8	7.2	
Working status				.888				<.001
Currently working	2	1	50.0		55	2	3.6	
None	179	100	55.9		126	37	29.4	
Income level				<.001				<.001
<\$400	138	89	64.5		77	34	44.2	
≥\$400	43	12	27.9		104	5	4.8	
Independency				<.001				<.001
Yes	37	35	94.6		9	8	88.9	
No	144	66	45.8		172	31	18.0	
Visual impairment				<.001				<.001
Yes	89	69	77.5		100	34	34.0	
No	92	32	34.8		81	5	6.2	
Auditory impairment				<.001				<.001
Yes	51	43	84.3		86	29	33.7	
No	130	58	44.6		95	10	10.5	
Social relation deterioration				<.001				<.001
Yes	145	94	64.8		29	17	58.6	
No	36	7	19.4		152	22	14.5	
Economic state deterioration				<.001				<.001
Yes	123	92	74.8		38	22	57.9	
No	58	9	15.5		143	17	11.9	
Neglect and mishandling				<.001				<.001
Yes	91	79	86.8		10	9	90.0	
No	90	22	24.4		171	30	17.5	
Cardiovascular diseases				<.001				<.001
Yes	110	80	72.7		79	29	36.7	
No	71	21	29.8		102	10	9.8	
Respiratory diseases				<.001				<.001
Yes	43	34	79.1		40	16	40.0	
No	138	67	48.6		141	23	16.3	
Diabetic disease				.021				.006
Yes	69	48	66.7		72	23	31.9	
No	112	55	49.1		109	16	14.7	
Chronic joint pain				<.001				<.001
Yes	127	88	69.3		92	32	34.8	
No	54	13	24.1		89	7	7.9	
Current smoking				<.001				<.001
Yes	48	39	81.3		38	18	47.4	
No	133	62	48.6		143	21	14.7	

Table 5. Multivariate Analysis of Factors Associated With Mental Health Problems Among Elderly Living in Nursing Home and Elderly People Living With Family.

	Elderly people living in nursing home (N = 181)			Elderly people living with family (N = 181)		
	OR	95% confidence interval	P value	OR	95% confidence interval	P value
Chronic joint pain	14.8	(4.4-50.5)	<.001	4.8	(1.3-18.5)	.021
Income (<\$400 vs ≥\$400)	3.4	(1.1-10.2)	.028	12.4	(3.4-45.6)	<.001
Current smoking	6.0	(1.7-21.0)	.005	6.0	(1.4-25.2)	.015
Visual impairment	4.0	(1.5-10.9)	.007	1.6	(0.4-6.2)	.513
Auditory impairment	5.0	(1.4-17.9)	.014	2.3	(0.7-8.0)	.174
Cardiovascular diseases	10.8	(3.7-31.4)	<.001	7.5	(1.8-31.9)	.006
Diabetes mellitus	3.1	(1.1-8.3)	.028	2.1	(0.6-7.2)	.233
Respiratory diseases	4.9	(1.5-16.2)	.010	3.0	(0.8-11.6)	.113
Current marital status (unmarried vs married)	1.3	(0.4-4.4)	.727	5.2	(1.5-18.3)	.011
Dependency on others	15.0	(2.7-82.2)	.002	39.1	(4.0-379.7)	.002
Economic state deterioration	14.3	(4.8-42.6)	<.001	9.6	(3.8-24.6)	<.001
Being neglected	18.2	(7.0-47.7)	<.001	40.6	(4.3-386.9)	<.001

Note. OR = odds ratio.

65 and older had met criteria for MDs.²² The prevalence of MDs in European study was 23.3%.²³

The study revealed high prevalence rates of depression (35.4% in NH group and 16.6% in WF group) and anxiety disorders (23.6% in NH group and 9.9% in WF group) among elderly Iraqi. These rates are much higher than the rates reported in IMHS (10.0% for depression and 11.3% for anxiety).⁷ This might be attributed to the long exposure to war in Iraq, widespread violence, and the continued deterioration of socioeconomic state.

The prevalence rates of depression and anxiety among elderly were 6.8% and 11.4%, respectively, in the U.S. study²² and 8.0% and 11.9% in the European study.²³ The overall prevalence rate of depression in Saudi Arabia was 8.7%²⁴ in one study and 20% in another study.²⁵ In Iran, 1.3% of elderly people complain of severe depression and 3.1% of severe anxiety.²⁶ The prevalence rate of depression among the elderly Indian population was 21.7%.²⁷

The differences in the prevalence rates of depression and anxiety between countries might be attributed to differences in family and social support, cultural factors, lifestyle, coping skills, sampling and instruments used, and more importantly the political instability and war situation.

The observed rate of dementia in this study was 12.2%. This rate is almost similar to the rates in other countries like Saudi Arabia (12.9%),²⁸ Turkey (8.4%),²⁹ Iran (8.1%),³⁰ and Canada (8.0%).³¹ The methods of screening and diagnosis of dementia might explain the little variations in the rates of dementia.

The prevalence of substance use disorder in this study was 1.4%. This is lower than the rate reported from other countries, including India (4.2%),³² Europe (4.6),²³ and the United States (3.8%).²² In Iraq, there are no data available

for the substance used disorders in 1990 and before, and it is now regarded in a gestational stage for spread of the substance misuse phenomena as a result of the deterioration of security and poor control of the border and socioeconomic deterioration that occurred after 2003.

The prevalence rates of suicide thoughts and suicide attempts in the current study were 14.9% and 6%, respectively. The chemical or drugs were the most common method of suicide attempts, accounting for 45% of all suicide attempts, and the next most common methods were sharp tools (41%) and burn (9%). In general, the rates are the highest in Eastern Europe and lowest in Central and South America, with the United States, Western Europe, and Asia falling in the middle.³³ In United State, the lifetime prevalence of suicide thoughts was 5.6% to 14.3%, and for suicide attempts was 1.9% to 8.7%. In 2015, firearms were the most common method of death by suicide, accounting for a little less than half (49.8%) of all suicide deaths. The next most common methods were hangings at 26.8% and poisoning at 15.4%.³⁴

In our study, the estimated prevalence of MDs among elderly population residing in NH (55.8%) was much higher than that among elderly living WF (21.5%). Several researches have reported high prevalence of depression and depressive syndromes in elderly residents of NHs, as much as 3 to 4 times higher than the community-dwelling elderly.^{35,36} Due to the high prevalence of MDs, NH residents may be experience stressful events such as relational losses, loss of home, and loss of spouse, relatives, and friends.

The multivariate analysis of factors associated with MDs among elderly people showed different factors. Low income among elderly living WFs was associated with higher odds of MDs. This finding was reported in other populations.^{37,38} Consistent with other studies,³⁷⁻⁴⁰ dependency on others and

being neglected were significantly associated with MDs. The current study revealed a significant association between the MDs and having chronic joint pain and cardiovascular diseases. Several studies supported the link between chronic illnesses and depression among elderly.⁴¹⁻⁴³

The current study also showed a significant association between MDs and being unmarried, low economic status, current smoking; the findings that agree with many other studies.^{26,38,44,45}

In conclusion, various MDs are common among elderly population of Iraq, being higher among those residing in NHs. Low income level, dependency on others, and being neglected were stronger determinants of MDs among elderly people living WF. Chronic joint pain, visual impairment, auditory impairment, and economic status deterioration were stronger determinants of MDs among those living in NHs. It is important to adopt strategies which ensure that the elderly have the necessary resources to meet their basic needs. Raising awareness of health workers working in NHs about mental health and the integration of mental health services into other health services at primary health care level are highly needed.

Acknowledgments

Authors would like to acknowledge the Eastern Mediterranean Public Health Network (EMPHNET) for their technical support.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Ahmed Abdulameer Ibrahim  <https://orcid.org/0000-0002-4323-9607>

References

- World Health Organization, US National Institute of Aging. Global health and ageing. http://www.who.int/ageing/publications/global_health/en/. Published 2011. Accessed January 10, 2019.
- World Health Organization. Definition of an older or elderly person. Date unknown. www.who.int/healthinfo/survey/ageingdefnolder/en/. Accessed January 10, 2019.
- World Health Organization. Ageing and life course. <http://www.who.int/ageing/en/>. Published 2015. Accessed January 10, 2019.
- United Nations, Department of Economic and Social Affairs, Population Division. World population prospects: the 2012 revision, highlights and advance tables. https://population.un.org/wpp/Publications/Files/WPP2012_HIGHLIGHTS.pdf. Working paper no. ESA/P/WP.228. Published 2013. Accessed April 10, 2019.
- Republic of Iraq Ministry of Health. National health policy. Date unknown. http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/iraq/iraqs_national_health_policy_2014-2023.pdf. Accessed January 10, 2019.
- World Health Organization. mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings. Version 2.0. 2016.
- World Health Organization. Iraq mental health survey. http://applications.emro.who.int/dsaf/EMRPUB_2009_EN_1367.pdf?ua=1. Published 2006/2007. Accessed January 10, 2019.
- Ferrell B, Coyle N. The nature of suffering and the goals of nursing. *Oncol Nurs Forum*. 2008;35(2):241-247.
- Butts J, Rich K. *Philosophies and Theories for Advanced Nursing Practice*. 1st ed. Sudbury, MA: Jones & Bartlett; 2011.
- Jongenelis K, Pot A, Eisses A, Beekman A, Kluiter H, Ribbe M. Prevalence and risk indicators of depression in elderly nursing home patients: the AGED study. *J Affect Disord*. 2004;83(2-3):135-142.
- World Health Organization. Mental health of older adults. <http://www.who.int/mediacentre/factsheets/fs381/en/>. Published 2017. Accessed January 10, 2019.
- Melzer D, Parahyba MI. Socio-demographic correlates of mobility disability in older Brazilians: results of the first national survey. *Age Ageing*. 2004;33:253-259.
- Kessler RC, Andrews G, Colpe LJ, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol Med*. 2002;32:959-956.
- Kurlowicz L, Greenberg S. The Geriatric Depression Scale (GDS). *Am J Nurs*. 2007;107(10):67-68.
- Spitzer RL, Kroenke K, Williams JW, Lowe B. A brief measure for assessing generalized anxiety disorder. *Arch Intern Med*. 2006;166:1092-1097.
- Pfeiffer E. A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *J Am Geriatr Soc*. 1975;23(10):433-441.
- World Health Organization. The ASSIST screening test version 3.0 and feedback card. Date unknown. http://www.who.int/substance_abuse/activities/assist_test/en/. Accessed January 10, 2019.
- Noorbala AA, Faghihzadeh S, Kamali K, et al. Mental health survey of the adult population of Iran in 2015. *Arch Iran Med*. 2017;20(3):128-134.
- Karam EG, Mneimneh ZN, Dimassi H. Lifetime prevalence of mental disorders in Lebanon: first onset, treatment, and exposure to war. *PLoS Med*. 2008;5(4):e61.
- Al Atram AR. Prevalence of psychiatric disorders in a sample of elderly residents in rural and urban population of Zulfi region—Saudi Arabia. *J Psychol Psych Other*. 2015;5:170.
- Nair S, Raghunath P, Nair S. Prevalence of psychiatric disorders among the rural geriatric population: a pilot study in Karnataka, India. *Cent Asian J Glob Health*. 2015;4(1):138.
- Reynolds K, Pietrzak RH, El-Gabalawy R, Mackenzie CS, Sareen J. Prevalence of psychiatric disorders in US older adults: findings from a nationally representative survey. *World Psychiatry*. 2015;14(1):74-81.
- Andreas S, Schulz H, Volkert J, et al. Prevalence of mental disorders in elderly people: the EuropeanMentDis_ICF65+ study. *Br J Psychiatry*. 2017;210(2):125-131.

24. El-Fetoh N, Mourad M, Almuneef M, Alotaibi W, Alshammari O, Alanazi A. Psychiatric problems among geriatric population of Arar City, Kingdom of Saudi Arabia: prevalence and determinants. *Int J Adv Res*. 2016;4(12):1470-1476.
25. Becker S, Al Zaid K, Al Faris E. Screening for somatization and depression in Saudi Arabia: a validation study of the PHQ in primary care. *Int J Psychiatry Med*. 2002;32:271-283.
26. Babazadeh T, Sarkhoshi R, Bahadori F, et al. Prevalence of depression, anxiety and stress disorders in elderly people residing in Khoy, Iran 2014-2015. *J Anal Res Clin Med*. 2016;4(2):122-128.
27. Barua A, Kar N. Screening for depression in elderly Indian population. *Indian J Psychiatry*. 2010;52(2):150-153.
28. Amr M, El-Gilany AH, Sallam K, et al. Characteristics of patients with dementia attended in a tertiary outpatient clinic in eastern region, Saudi Arabia. *J Psychiatry*. 2014;17(6):13.
29. Arslantas D, Ozbabalik D, Metintaş S, et al. Prevalence of dementia and associated risk factors in Middle Anatolia, Turkey. *J Clin Neurosci*. 2009;16(11):1455-1459.
30. Sharifi F, Fakhrzadeh H, Varmaghani M, et al. Prevalence of dementia and associated factors among older adults in Iran: National Elderly Health Survey (NEHS). *Arch Iran Med*. 2016;19(12):838-844.
31. Lindsay J, Sykes E, McDowell I, Verreault R, Laurin D. More than the epidemiology of Alzheimer's disease: contributions of the Canadian study of health and aging. *Can J Psychiatry*. 2004;49(2):83-91.
32. Plassman BL, Langa KM, Fisher SG, et al. Prevalence of dementia in the United States: the aging, demographics, and memory study. *Neuroepidemiology*. 2007;29(1-2):125-132.
33. Singh AP, Kumar KL, Reddy CM. Psychiatric morbidity in geriatric population in old age homes and community: a comparative study. *Indian J Psychol Med*. 2012;34(1):39-43.
34. Matthew KN, Borges G, Evelyn JB, et al. Suicide and suicidal behavior. *Epidemiology Rev*. 2008;30(1):133-154.
35. Nazemi L, Skoog I, Karlsson I, et al. Depression, prevalence and some risk factors in elderly nursing homes in Tehran, Iran. *Iran J Public Health*. 2013;42(6):559-569.
36. Doumit J, Nasser R. Quality of life and wellbeing of the elderly in Lebanese nursing homes. *Int J Health Care Qual Assur*. 2010;23(1):72-93.
37. Tajvar M, Arab M, Montazeri A. Determinants of health-related quality of life in elderly in Tehran, Iran. *BMC Public Health*. 2008;8:323.
38. Antai D, Oke A, Braithwaite P, Lopez BG. The effect of economic, physical, and psychological abuse on mental health: a population-based study of women in the Philippines. *Int J Family Med*. 2014;2014:852317.
39. Cooper C, Selwood A, Livingston G. The prevalence of elder abuse and neglect: a systematic review. *Age Ageing*. 2008;37(2):151-160.
40. Chokkanathan S, Lee A. Elder mistreatment in urban India: a community based study. *J Elder Abuse Negl*. 2005;17(2):45-61.
41. Thilak SA, Sarada AK, Neloopant SA. Prevalence and factors associated with depression among the elderly in rural areas of Kannur, North Kerala, India-a cross sectional study. *Int J Community Med Public Health*. 2016;3:1986-1991.
42. Sandhya G. Geriatric depression and related factors a cross sectional study from a rural community in south Kerala. *J Indian Acad Geriatric*. 2010;6(2):61-63.
43. Huang C, Dong B, Lu Z, Yue J, Liu Q. Chronic diseases and risk for depression in old age: a meta-analysis of published literature. *Ageing Res Rev*. 2010;9(2):131-141.
44. Maity M, Mukhopadhyay B. Is mental health a burning health issue for Indian elderly? *J Psychol Clin Psychiatry*. 2015;3(3):00132.
45. Silva M, Loureiro A, Cardoso G. Social determinants of mental health: a review of the evidence. *Eur J Psychiat*. 2016;30(4):259-292.