

Knowledge, Attitude and Practices of Primary Care Physicians in Aseer Region, Saudi Arabia, Regarding Geriatric Depression

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Abstract

Aim of Study: To assess knowledge, attitude and practice regarding geriatric depression among primary care physicians (PCPs) in Aseer Region.

Methodology: Following a cross-sectional design, this study included 330 PCPs in Aseer Region, Saudi Arabia. A self-administered questionnaire was constructed by the researchers to assess participants' knowledge, attitudes and practices about geriatric depression.

Results: Regarding geriatric depression, 30% of PCPs had poor knowledge, 94.2% had a positive attitude toward management of geriatric depression, while 27% had poor practices regarding management of geriatric depression. More than one third of participants (35.8%) do not use any standard test to screen for late life depression. Only 64.2% use clinical guidelines for the diagnosis and treatment of late life depression, while 10.6% of PCPs do not request any laboratory test to identify the cause for geriatric depression. The most frequently prescribed medications for depression among elderly patients were selective serotonin reuptake inhibitors (78.2%), while 48.8% of participants apply cognitive behavioral therapy to their geriatric depression patients. PCPs' knowledge grades differed significantly according to their age ($p=0.019$). PCPs with higher duration of experience had significantly higher percentage of good knowledge grades than those with less experience (28.1% and 17.1%, $p<0.001$). Those who

attended psychiatry continuing medical education (CME) courses had significantly higher percentage of good knowledge grades than those who did not (27.1% and 17.5%, $p=0.015$). PCPs' attitude toward management of geriatric depression differed significantly according to dealing with depression cases ($p=0.029$), while their practice grades differed significantly according to their age ($p<0.001$) and duration of experience in primary health care ($p=0.01$). Those who attended psychiatry CME courses had significantly higher percentage of good practice than those who did not (51.9% and 45.8%, $p=0.002$). Participants' use of clinical guidelines for diagnosis and treatment of geriatric depression was significantly more by those who attended psychiatry courses ($p<0.001$) and also by those who dealt with cases of depression ($p=0.008$).

Conclusions: PCPs knowledge regarding geriatric depression is suboptimal. Most PCPs have a positive attitude toward geriatric depression, but routine screening of elderly patients is mostly not fulfilled. PCPs' CME, experience and training are the main determinants for better knowledge, positive attitude and more practice regarding diagnosis and management of geriatric depression. Therefore, PCPs should be encouraged to attend CME on mental health of the elderly and to be trained on routine psychiatric screening of elderly and to use clinical guidelines for diagnosis and management of geriatric depression.

Key words: Geriatric depression, primary care, physicians, knowledge, attitude, practice.

Introduction

The World Health Organization (WHO) defined elderly people as those who are 60 years and above and among them 20% suffer a mental disorder (1). The commonest mental health condition in the elderly is depression and it is usually associated with significant increase in morbidity and mortality (2).

Depression among the elderly is often undetected because it is manifested by executive dysfunction (3), resulting in further deterioration of health status (4), low quality of life and greater use of health services (5).

Around 69% of patients with depression present with unexplained somatic symptoms like abdominal pain, back pain, constipation, fatigue, headache, joint pain, neck pain and weakness (6), and it is associated with multiple risk factors such as chronic medical illness, stress, chronic pain, family history of depression, female gender, low income, job loss, substance abuse, low self-esteem, lack of social support, past history of depression, being single, divorced or widowed or functional and cognitive impairment (7).

According to WHO, depression is a major risk factor for suicide in the elderly and nearly 15% of them have completed suicides (8). Most elderly who commit suicide had seen a primary care physician (PCP) within the last month of their life, but it was undiagnosed and untreated (9). Compared with usual care, collaborative care interventions for elderly depressed patients in the primary care can lower rates of suicidal ideation (10).

The Kingdom of Saudi Arabia is one of the largest countries in the Middle East with a population exceeding 35 million in 2021 (11). The percentage of the elderly population is rising, and is expected to grow to roughly 2.5 million (7% of the population) (12), with 39% prevalence of late life depression and 8.4% with severe depression (13). This increase in numbers of elderly people increases the challenges to the health care system in Saudi Arabia, which is divided into primary, secondary and tertiary health care services (14).

Health care for the elderly is not yet as well developed as general services (15), and still in the early stages of development despite the good employment of the Primary Health Care (PHC) (16). However, there are no special hospital wards for elderly patients in Saudi Arabia, and they are treated by general medicine (17).

In view of this, depression in late life is considered as a clinical challenge for PCPs (18). PCPs are the initial health care contact to provide early detection and continued management for depressed patients (19). However, PCPs fail to diagnose 30-50% of the patients (20). For this, United States Preventive Services Task Force has recommended screening elderly for depression (7).

This study aimed to assess knowledge, attitude and practice regarding geriatric depression among primary health care physicians in Aseer Region, Saudi Arabia.

Subjects and methods

This study followed a cross-sectional design in Aseer Region, at the southwestern part of the Kingdom of Saudi Arabia. All physicians at PHC centers in Asser Region constituted the study population. There are 382 PCPs working in 228 PHC centers in Aseer Region (21). All PCPs in Aseer Region were invited to participate in this study. However, after repeated reminders sent to the PHC physicians, this study included 330 physicians (response rate: 86.4%).

A self-administered questionnaire was constructed by the researcher. It consisted of socio-demographic data (i.e., age, gender, and working experience); 10 (true/false) statements to assess participants' knowledge about geriatrics and geriatric depression; 20 questions to assess attitudes and perceptions were adapted from Callahan et al. (22) who incorporated questions from previously validated instruments that measured physicians' attitudes toward psychiatry and psychosocial aspects of patient care in their questionnaire; and physicians' current practices in regard to recognizing and managing depression in elderly, including questions about routine screening methods, use of screening test and guidelines, laboratory examinations, treatment and the use of patient education materials adapted from Glasser et al. (23).

Regarding knowledge statements, a correct response was assigned a score of (1) while an incorrect response was assigned a score of (0). Each participant's summation of knowledge scores was calculated (a minimum of 0 and a maximum of 10). The knowledge of those with total percentage scores less than 60% was graded as "unsatisfactory" and those who had 60% or more were considered to have "satisfactory" knowledge.

Regarding attitude statements, some of the statements described a positive direction, while others described a negative direction. For a positive direction statement, those who responded by "strongly agree" were given a score of 5, and those who "agreed" had a score of 4, and so on. On the other hand, regarding a negative direction statement, a "strongly disagree" response was given a score of 5 and "agree" responses were given a score of 4, and so on. For each participant, the total for all attitude scores were calculated and then the percentages were calculated. Participants' total percentage attitude scores less than 60% were considered as "negative" and those who had 60% or more were considered to have a "positive" attitude.

Regarding participants' current practices related to late life depression, a practiced item was given a score of 1 and an unpracticed item was given a score of 0. For each participant, the total for all scores was calculated and then the percentage was calculated. Participants' total

percentages less than 60% were graded as “unsatisfactory” and those who had 60% or more were considered to have “satisfactory” practices.

The self-administered questionnaire sheets were distributed by the researcher to PCPs and then were collected immediately after being filled out. The data were verified by hand then coded and entered into a personal computer. Data were analyzed by the Statistical Package for Social Sciences (SPSS version 22). Descriptive statistics (i.e., frequency, percentage, mean and standard deviation) were calculated. Tests of significance (i.e., chi square, t-test and F-test) were applied to test the significance of differences in knowledge, attitude and practice according to personal characteristics of participants. P-values less than 0.05 were considered as statistically significant.

Results

Table (1) shows that age of almost half of participants (50.6%) ranged from 30 to 40 years. About one third of them (33.6%) were females. Their duration of working experience in primary health care was mainly less than 5 years (65.5%). Almost two thirds of participants (64.2%) did not attend any psychiatry CME courses. More than half of participants (55.8%) dealt with late life depression cases.

Table (2) shows that the knowledge statements with participants' highest correct responses were “Success of treatment of geriatric depression depends on engagement of patients, health care providers & family members” and “Loss and grief, loneliness, and care-taking responsibilities are important risk factors for geriatric depression”, (95.5% and 93%, respectively). On the other hand, knowledge statements with participants' least correct responses were “Manifestations of depression among elderly and younger adults are not different” and “Risk factors for developing depression after age 65 are similar to those in younger individuals”, (25.8% and 18.8%, respectively).

Figure (1) shows that 30% of PHC physicians had poor knowledge regarding geriatric depression, while 49.1% had fair knowledge and 20.9% had good knowledge.

Table (3) shows that positive attitude statements with participants' highest agreement were “Helping depressed patients is important to me” and “I feel confident that I can accurately diagnose depression in elderly patients.”, (96.4% and 73%, respectively), while those with least agreement were “Given the chronic illnesses that elderly patients suffer, depression is understandable” and “Patients I treat for depression tend to become dependent on me”, (48.8% and 40.6%, respectively). On the other hand, negative attitude statements with participants' highest agreement were “I am always too pressed by time to routinely investigate depression in elderly patients” and “If I diagnose depression in an elderly patient, he/she will likely reject psychological therapy”, (48.5% and 47.9%, respectively), while those with least agreement were “Elderly patients will reject the idea of their primary care

physician dealing with depression” and “Elderly patients have so many problems that I don't always have time to consider depression”, (30.9% and 34.5%, respectively).

Figure (2) shows that 94.2% of PHC physicians had a positive attitude toward management of geriatric depression.

Table (4) shows that the most frequent symptoms that let primary health care physicians screen their elderly patients for depression were “loss of interest or pleasure and sad mood (97.9% and 87%, respectively) while the least frequent symptoms were sexual complaints and persistent pain (57.9% and 43.6%, respectively).

Figure (3) shows that 27% of PHC physicians had poor practices regarding management of geriatric depression, while 23.3% had fair practice and 49.7% had good practice.

Table (5) shows that more than one third of participants (35.8%) do not use any standard test to screen for late life depression. The most frequently used screening tests were geriatric depression scale (62.4%) and mini-mental state exam (59.4%).

Figure (4) shows that only 64.2% use clinical guidelines for the diagnosis and treatment of late life depression.

Table (6) shows that 10.6% of primary health care physicians do not request any laboratory test to identify the cause for geriatric depression. The most frequently used test was TSH serum levels (54.5%).

Table (7) shows that 11.5% of primary health care physicians do not prescribe any medication for geriatric depression patients. The most frequently prescribed medications for depression among elderly patients were selective serotonin reuptake inhibitors (78.2%). Moreover, 48.8% of participants apply cognitive behavioral therapy to their geriatric depression patients.

Table (8) shows that primary health care physicians' knowledge grades regarding geriatric depression differed significantly according to their age ($p=0.019$), with least percentage of good knowledge grade among those aged <30 years (14%). Physicians with higher duration of experience in PHC (>5 years) had significantly higher percentage of good knowledge grades than those with less experience (28.1% and 17.1%, $p<0.001$). Those who attended psychiatry CME courses had significantly higher percentage of good knowledge grades than those who did not (27.1% and 17.5%, $p=0.015$). However, knowledge grades about geriatric depression did not differ significantly according to their gender or dealing with cases of depression.

Table (9) shows that primary health care physicians' attitude toward management of geriatric depression differed significantly according to dealing with depression cases, with a higher percentage of positive attitude among

those who dealt with cases of depression than those who did not (96.7% and 91.1%, respectively, $p=0.029$). However, physicians' attitude toward management of geriatric depression did not differ significantly according to their age, gender, experience in PHC or attending CME psychiatry courses.

Table (10) shows that primary health care physicians' practice grades regarding management of geriatric depression differed significantly according to their age ($p<0.001$), with the highest percentage of good practice among those aged >40 years. Physicians with more duration of experience in PHC (>5 years) had a significantly higher percentage of good practice than those with less experience (52.6% and 48.1%, $p=0.01$). Those who attended psychiatry CME courses

had a significantly less percentage of poor practice than those who did not (20.3% and 30.7%, $p=0.002$). However, physicians' practice grades regarding management of geriatric depression did not differ significantly according to their gender, or dealing with cases of depression.

Table (11) shows that participants' use of clinical guidelines for diagnosis and treatment of geriatric depression was significantly more by those who attended psychiatry courses ($p<0.001$) and also by those who dealt with cases of depression ($p=0.008$). However, use of clinical guidelines did not differ significantly according to their age group, gender, experience in primary health care or dealing with cases of depression.

Table 1: Personal characteristics of study sample

Personal characteristics	No.	%
Age groups		
• <30 years	107	32.4
• 30-40 years	167	50.6
• >40 years	56	17.0
Gender		
• Male	219	66.4
• Female	111	33.6
Experience in primary care		
• <5 years	216	65.5
• ≥ 5 years	114	34.5
Attending CME on psychiatry		
• Yes	118	35.8
• No	212	64.2
Dealing with cases of late life depression		
• Yes	184	55.8
• No	146	44.2

CME: Continuing Medical Education

Table 2: Correct responses to knowledge questions related to geriatric depression

Knowledge Statements	No.	%
Success of treatment of geriatric depression depends on engagement of patients, health care providers & family members	315	95.5
Loss and grief, loneliness, and care-taking responsibilities are important risk factors for geriatric depression	307	93.0
Elderly are more prone to the adverse effects of medication	292	88.5
Almost one fifth of elderly have depressive symptoms	285	86.4
Patients with geriatric depression may present with somatic rather than emotional complaints	279	84.5
Elderly people in developed countries are at a higher risk for geriatric depression	262	79.4
Depression is the most frequently observed diagnosis among elderly who have committed or attempted suicide	256	77.6
Elderly people become more complaining, irritable and depressed as they age, again suggesting these behaviors are a normal part of the aging process	248	75.2
Treatment for depression among elderly should last longer than that for younger groups	214	64.8
Older adults have well-preserved both primary (time-limited) and tertiary (long-term) memory functions.	198	60.0
Depressive symptoms among elderly is a manifestation of the ageing process	181	54.8
About 65-75% of geriatric depression is not treatable	114	34.5
Social support and social activities are ineffective for protection against geriatric depression	99	30.0
Manifestations of depression among elderly and younger adults are not different	85	25.8
Risk factors for developing depression after age 65 are similar to those in younger individuals	62	18.8

Figure 1: Distribution of participants' knowledge grades about geriatric depression

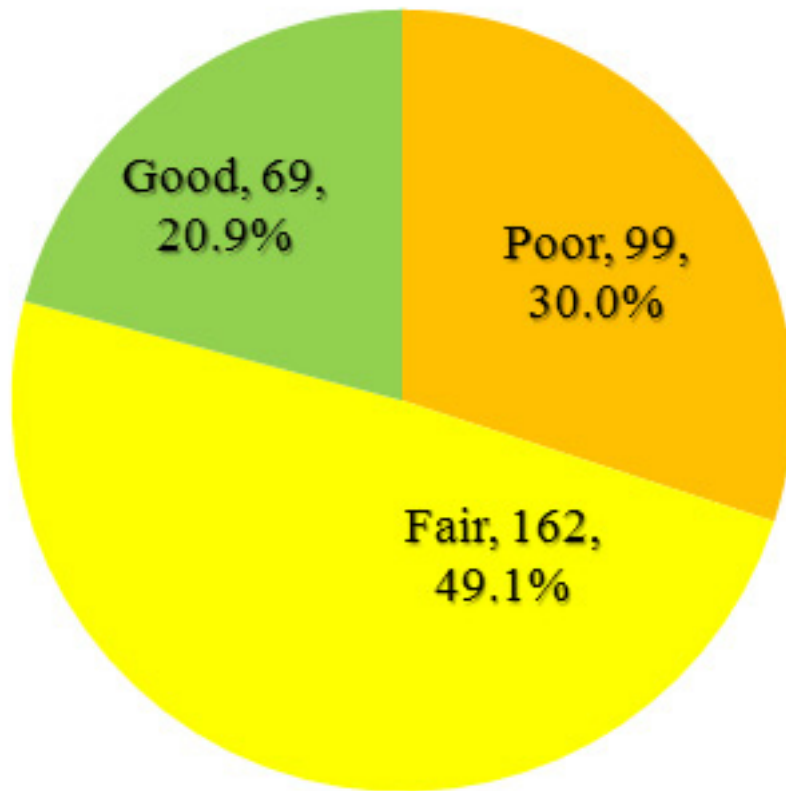


Table 3: Participants' responses to attitude statements related to geriatric depression

Attitude Statements	Agree		Neutral		Disagree	
	No.	%	No.	%	No.	%
1) Positive attitude statements:						
Helping depressed patients is important to me	318	96.4	4	1.2	8	2.4
I feel confident that I can accurately diagnose depression in elderly patients.	241	73.0	74	22.4	15	4.5
Treating depressed patients is an aspect of practicing medicine that I find rewarding	228	69.1	94	28.5	8	2.4
I consider diagnosing and treating depression in elderly patients to be my responsibility	236	71.5	62	18.8	32	9.7
I do not focus on depression as a diagnosis until I have ruled out organic disease	208	63.0	51	15.5	71	21.5
Given the chronic illnesses that elderly patients suffer, depression is understandable	161	48.8	127	38.5	42	12.7
Patients I treat for depression tend to become dependent on me	134	40.6	98	29.7	98	29.7
2) Negative attitude statements:						
Elderly patients will reject the idea of their primary care physician dealing with depression	102	30.9	153	46.4	75	22.7
Elderly patients have so many problems that I don't always have time to consider depression	114	34.5	39	11.8	177	53.6
Diagnosing depression in an elderly patient is a problem best handled by a psychiatrist	116	35.2	94	28.5	120	36.4
I will send an elderly patient for a psychiatric consultation rather than diagnose and treat by myself	118	35.8	54	16.4	158	47.9
If I diagnose depression in an elderly patient, he/she will likely reject psychological therapy	137	41.5	109	33.0	84	25.5
Depressed elderly patients frequently frustrate me	139	42.1	114	34.5	77	23.3
Assigning a psychiatric diagnosis to an elderly patient is stigmatizing	140	42.4	127	38.5	63	19.1
I feel I am intruding when I probe the emotional concerns of my patients	141	42.7	149	45.2	40	12.1
My priority is to treat medical problems first then investigate psychological problems	145	43.9	82	24.8	103	31.2
Depression is a normal concomitant of aging	154	46.7	68	20.6	108	32.7
Diagnosing depression automatically places the responsibility for treatment on me	154	46.7	92	27.9	84	25.5
I am always too pressed by time to routinely investigate depression in elderly patients	160	48.5	106	32.1	64	19.4
I think psychiatrists can help my elderly patients who are depressed	224	67.9	74	22.4	32	9.7

Table 4: Symptoms that let participants screen their elderly patients for depression

Complaints	No.	%
Loss of interest or pleasure	323	97.9
Sad mood	287	87.0
Decreased energy	273	82.7
Weight loss/weight gain	268	81.2
Anxiety/irritability or easily provoked	265	80.3
Sleep disturbance	257	77.9
Work or relationship dysfunction	241	73.0
Multiple worries and distress	228	69.1
Numerous unexplained medical symptoms	209	63.3
Sexual complaints	191	57.9
Persistent pain (e.g., headache, colic)	144	43.6

Figure 2: Distribution of participants' attitude grades toward management of geriatric depression

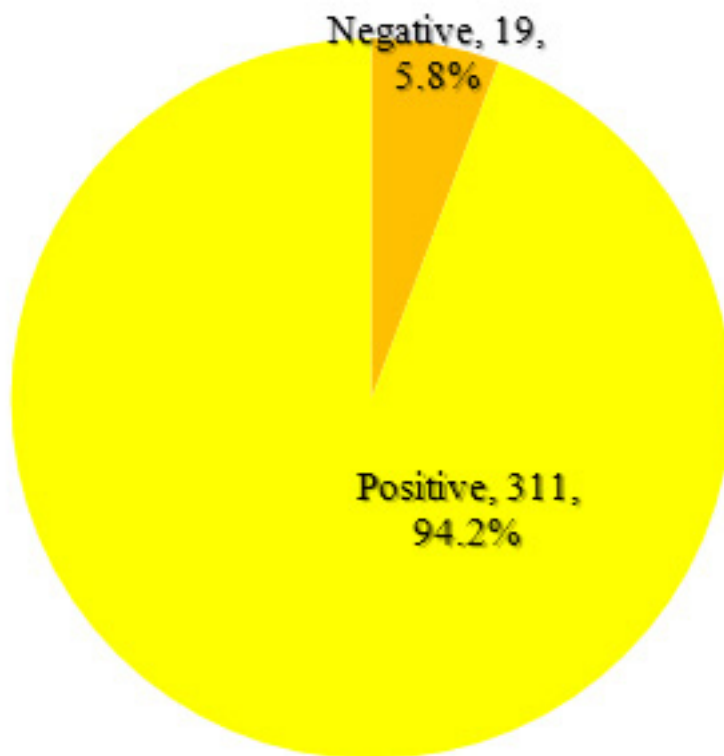


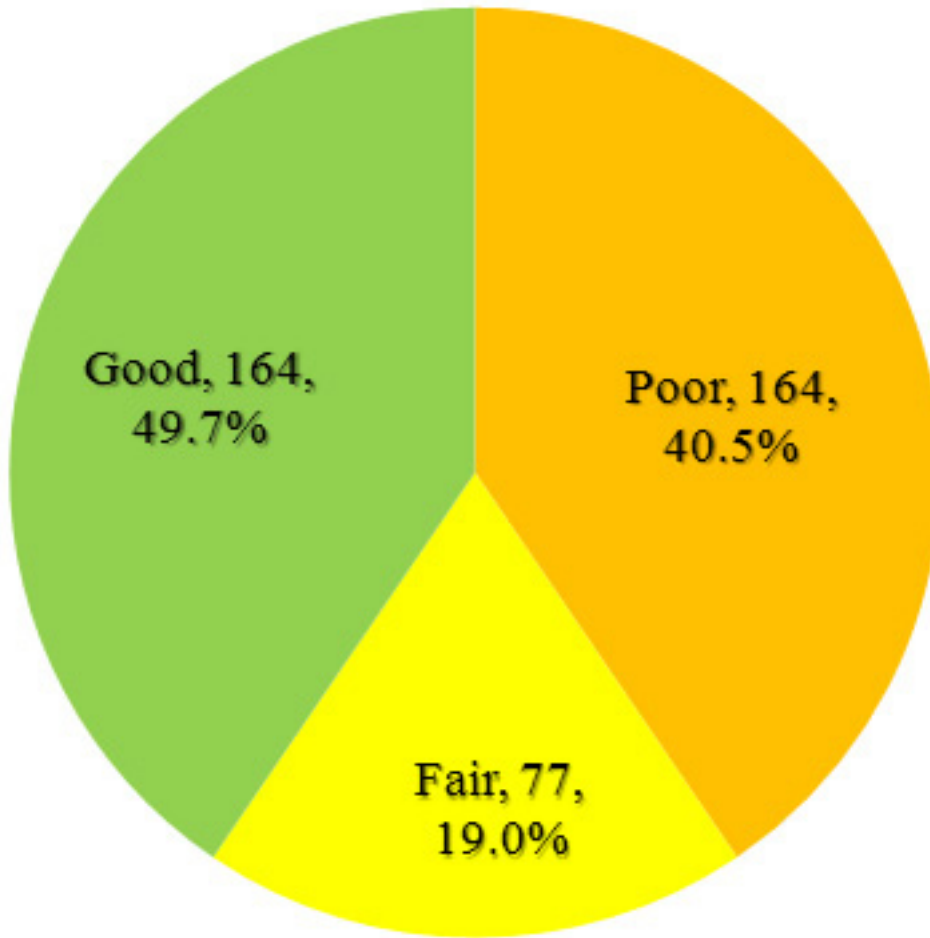
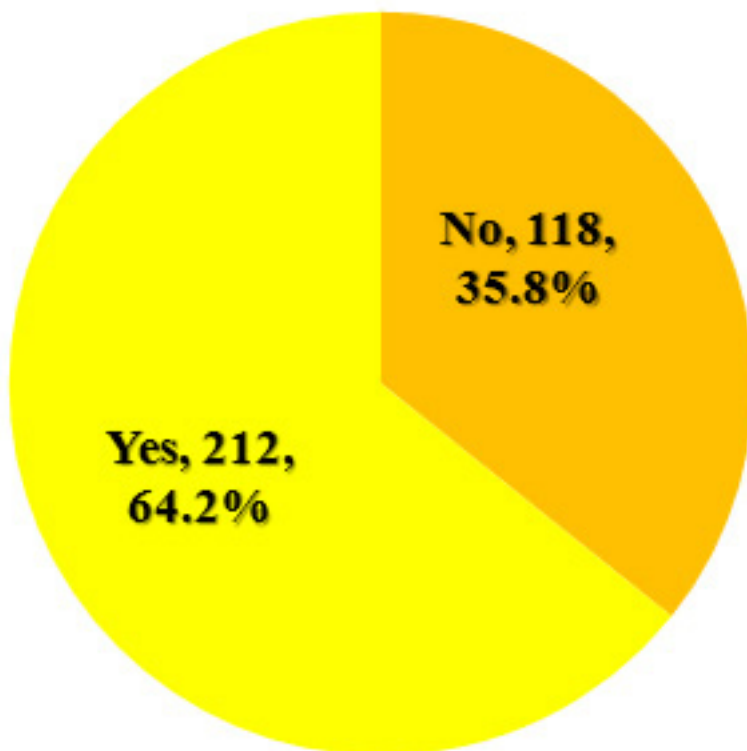
Figure 3: Participants' grades for their practices regarding management of geriatric depression**Figure 4: Using clinical guidelines for diagnosis and treatment of late life depression**

Table 5: Standard tests used by participants to screen for late life depression

Standard screening tests	No.	%
No standard test used is used	118	35.8
Standard tests are used:	212	64.2
• Geriatric Depression Scale	206	62.4
• Mini-Mental State Exam	196	59.4
• Primary Care Evaluation of Mental Disorders	173	52.4
• Beck Depression Inventory	122	37.0
• Zung Self-Rating Depression Scale	112	33.9

Table 6: Laboratory tests used by participants to reach a diagnosis for geriatric depression

Lab tests	No.	%
TSH serum level	180	54.5
CBC	173	52.4
Chemistry	136	41.2
Other laboratory tests	33	10.0
No laboratory tests are required	35	10.6

Table 7: Participants' followed management modalities for depression among elderly patients

Medication	No.	%
Prescribing medication to patients:		
• No	38	11.5
• Yes	292	88.5
- Selective serotonin reuptake inhibitors	258	78.2
- Tricyclic antidepressants	34	10.3
Applying cognitive behavioral therapy	161	48.8

Table 8: Participants' knowledge grades according to their personal characteristics

Personal characteristics	Poor		Fair		Good		P Value
	No.	%	No.	%	No.	%	
Age groups							0.019
• <30 years	27	25.2	65	60.7	15	14.0	
• 30-40 years	50	29.9	73	43.7	44	26.3	
• >40 years	22	39.3	24	42.9	10	17.9	
Gender							0.544
• Male	70	32.0	105	47.9	44	20.1	
• Female	29	26.1	57	51.4	25	22.5	
Experience in PHC							<0.001
• <5 years	48	22.2	131	60.6	37	17.1	
• ≥5 years	51	44.7	31	27.2	32	28.1	
Attending CME on psychiatry							0.015
• Yes	25	21.2	61	51.7	32	27.1	
• No	74	34.9	101	47.6	37	17.5	
Dealing with depression cases							0.173
• Yes	48	26.1	93	50.5	43	23.4	
• No	51	34.9	69	47.3	26	17.8	

CME = Continuing Medical Education

Table 9: Participants' attitude toward management of geriatric depression according to their personal characteristics

Personal characteristics	Negative		Positive		P Value
	No.	%	No.	%	
Age groups					0.519
• <30 years	5	4.7	102	95.3	
• 30-40 years	9	5.4	158	94.6	
• >40 years	5	8.9	51	91.1	
Gender					0.421
• Male	11	5.0	208	95.0	
• Female	8	7.2	103	92.8	
Experience in PHC					0.227
• <5 years	10	4.6	206	95.4	
• ≥5 years	9	7.9	105	92.1	
Attending CME on psychiatry					0.919
• Yes	7	5.9	111	94.1	
• No	12	5.7	200	94.3	
Dealing with depression cases					0.029
• Yes	6	3.3	178	96.7	
• No	13	8.9	133	91.1	

CME = Continuing Medical Education

Table 10: Participants' practice grades about management of geriatric depression according to their personal characteristics

Personal Characteristics	Poor		Fair		Good		P Value
	No.	%	No.	%	No.	%	
Age groups							<0.001
• <30 years	59	55.1	17	15.9	31	29.0	
• 30-40 years	30	18.0	41	24.6	96	57.5	
• >40 years	0	0.0	19	33.9	37	66.1	
Gender							0.080
• Male	61	27.9	43	19.6	115	52.5	
• Female	28	25.2	34	30.6	49	44.1	
Experience in PHC							0.010
• <5 years	69	31.9	43	19.9	104	48.1	
• ≥5 years	20	17.5	34	29.8	60	52.6	
Attending CME on psychiatry							0.002
• Yes	24	20.3	40	33.9	54	45.8	
• No	65	30.7	37	17.5	110	51.9	
Dealing with depression cases							0.056
• Yes	40	21.7	46	25.0	98	53.3	
• No	49	33.6	31	21.2	66	45.2	

CME = Continuing Medical Education

Table 11: participants' use of clinical guidelines for diagnosis and treatment of late life depression according to their personal characteristics

Personal characteristics	Yes		No		P Value
	No.	%	No.	%	
Age groups					
• <30 years	53	49.5	54	50.5	0.519
• 30-40 years	89	53.3	78	46.7	
• >40 years	33	58.9	23	41.1	
Gender					
• Male	121	55.3	98	44.7	0.256
• Female	54	48.6	57	51.4	
Experience in PHC					
• <5 years	120	55.6	96	44.4	0.206
• ≥5 years	55	48.2	59	51.8	
Attending CME on psychiatry					
• Yes	78	66.1	40	33.9	<0.001
• No	97	45.8	115	54.2	
Dealing with depression cases					
• Yes	110	59.8	71	40.2	0.008
• No	65	44.5	81	55.5	

CME = Continuing Medical Education

Discussion

Results of the present study showed that geriatric depression was a common presentation that more than half of PHC physicians in Aseer Region (55.8%) have seen at their clinics.

Jee and Lee (24) noted that geriatric depression is one of the most frequently encountered problems among elderly persons. It is a disease with greatest social burden after ischemic heart disease. Considering that depression is the most common psychological problem in old age, its management in the elderly population is essential. Lavretsky and Kumar (25) added that depressive symptoms, especially among the elderly, is a significant health care concern, which has become an increasing problem in terms of treatment that necessitates following evidence-based practice guidelines.

Despite the fact that depression, especially among the elderly, is of increasing magnitude, findings of the present study revealed that 64.2% of PHC physicians in Aseer Region did not attend any continuing medical education (CME) activities related to psychiatry.

Similarly, Al-Garni (26) reported that almost three-quarters of PHC physicians in Jeddah, Saudi Arabia, did not attend any CME on psychiatry. He added that this finding may explain why knowledge and experience of PHC physicians regarding depression among the elderly was low. He also stressed that attending psychiatry courses and workshops is significantly associated with overall better knowledge regarding geriatric depression.

Results of the present study revealed that the great majority of PHC physicians (94.2%) had a positive attitude toward management of geriatric depression. The proportion of those with a positive attitude was significantly more among those who dealt with cases of depression than those who did not.

High prevalence of positive attitude among physicians toward management of geriatric depression has been reported by several studies. Joseph et al. (27) reported that 96% of family physicians in USA agreed that diagnosing and treating depressed patients was their responsibility.

Liu et al. (28) found that physicians who dealt with patients with depression were more likely to have a positive attitude than those who did not deal with them. Therefore, Dowrick et al. (29) emphasized that, to help patients with depression, physicians first need to perceive this problem to be their responsibility. Personal attitudes are key elements that influence physician clinical behavior.

Despite almost all PHC physicians in Aseer Region having a positive attitude toward diagnosis and management of geriatric depression, their knowledge and practices were suboptimal, as 30% had poor knowledge and 27% had poor practices. These findings indicate that geriatric depression is being under-diagnosed and also under-treated by PHC physicians in Aseer Region.

Similarly, several studies reported that in spite of the adequate access to primary care, a significant number of depressed elderly remain unidentified or under-treated (30-32).

Liu et al. (28), in Taiwan, reported that both knowledge and practice of general practice physicians toward management of depression cases were lacking. Haddad et al. (33) noted that knowledge among PHC physicians about depression may vary from one country to another and depends on the amount and quality of education and training received both at undergraduate and postgraduate levels.

This study showed that more than one third of participants do not use any standard test to screen for geriatric depression. This finding is in accordance with that of Katzelnick et al. (34), who found that patients attending PHC centers care were rarely screened for depression. Jee and Lee (24) noted that since elderly patients face a high risk of developing depression, efforts should be made by PHC physicians to address it wherever possible. Therefore, it is to be emphasized that regular depression screening of elderly at PHC settings is essential for early detection of depression.

The present study showed that more than one third of PHC physicians do not use any standard clinical guidelines for the diagnosis and treatment of geriatric depression, 10.6% do not request any laboratory test to identify its causes, while 11.5% do not prescribe any medication for geriatric depression patients. The most frequently prescribed medications for geriatric depression were selective serotonin reuptake inhibitors. These findings express the pressing necessity to encourage PHC physicians to follow and apply standard guidelines for the diagnosis and management of geriatric depression.

In Japan, Ohtsuki et al. (35) found that PHC physicians often fail to screen to detect geriatric depression. Even if patients were diagnosed, the rate of antidepressant prescription was low, with only around 7% of depression sufferers being prescribed antidepressants.

James (36) explained that most PHC physicians do not perform laboratory tests to diagnose geriatric depression because they frequently insist that psychological diagnosis cannot be confirmed by the use of technological devices or laboratory tests unlike physical disease that is quite visible and has clearly marked symptoms which can be diagnosed with a wide range of objective tests.

Al-Garni (26), in Jeddah, reported that 60% of PHC physicians in Jeddah use selective serotonin reuptake inhibitors as first line medication for depression in elderly. However, in USA, Joseph et al. (27) found that more than one third of physicians use anxiolytics in treatment of depression in elderly. They added that anxiolytics are a useful adjunct in treating anxiety symptoms associated with depression.

The present study showed PHC physicians' knowledge regarding geriatric depression was significantly higher among the PHC physicians who were older, more experienced in PHC practice and among those who attended CME on psychiatry. PHC physicians' attitude toward management of geriatric depression was significantly better among those who dealt with cases of

depression. Their practices were significantly better among those who were older, more experienced in PHC practice, and those who attended CME courses on psychiatry. Applying clinical guidelines on diagnosis and management of geriatric depression was significantly more among those who attended CME courses on psychiatry and also who dealt with depression cases.

These findings denote that the main determinants for better knowledge, positive attitude and more practice regarding diagnosis and management of geriatric depression are related to PHC physicians' continuing education, experience and training in that important field.

These findings are in accordance with those reported by McGaghie (37), who stated that physicians learn from their experience and involvement in patient care is the best teacher. The exposure to patients and experience over time is sufficient to ensure that physicians in training will become competent doctors.

Moreover, the importance of training of PHC physicians to be able to diagnose and manage cases of geriatric depression has been emphasized by several studies.

Park and Unützer (38) stressed that continued education and training of PHC physicians on assessment and management of geriatric depression is an important educational priority. Tai-Sale et al. (39) added that much attention should be focused on PHC providers' education with the hope of increasing their use of evidence-based treatments. Skultety and Rodriguez (40) stated that it is essential for PHC providers to have training and experience in geriatric mental health as a vital prerequisite for integrated care of elderly to be more successful.

In conclusion, cases of geriatric depression are common at primary health care (PHC) settings in Aseer Region. Knowledge of most PHC physicians in Aseer Region regarding geriatric depression is suboptimal. Most PHC physicians have a positive attitude toward geriatric depression. Routine screening of elderly patients is mostly not fulfilled by PHC physicians. The most requested laboratory test for geriatric depression by PHC physicians is thyroid function test. The most prescribed medication for depression in elderly patients by PHC physicians are selective serotonin reuptake inhibitors. The most often followed modality by PHC physicians for treatment of depression in elderly patients is cognitive behavioral therapy. Most PHC physicians do not follow any clinical guidelines for the diagnosis and treatment of late life depression. PHC physicians' continuing education, experience and training are the main determinants for better knowledge, positive attitude and more practice regarding diagnosis and management of geriatric depression.

Therefore, PHC physicians should be encouraged to attend continuing medical education on mental health of elderly and be trained on routine psychiatric screening of elderly. PHC physicians should be encouraged to use clinical guidelines for diagnosis and management of geriatric depression.

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