

Prevalence and Determinants of Depression among Elderly Patients Attending the Primary Health Care Center in Makkah Al-Mukarramah in Saudi Arabia During the Spread of the Corona Virus for the Year 2022

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Abstract:

Background:

The COVID 19 pandemic is associated with mental health concerns such as anxiety and depression at multiple levels and has recently been postulated to be linked to the long COVID syndrome. The COVID-19 pandemic has been relentless, with a recent surge of cases and deaths in the worldwide pandemic. Depression have been detected to have increased rates both in the elderly patients attending the primary health care center and individuals infected by COVID-19 pandemic had a significant impact on daily activities due to restrictions in terms of social distancing because of the elevated rate of contagion and mortality. Many sectors have been affected, worldwide. The world health organization (WHO) declared COVID-19 a worldwide pandemic on 11th March 2020. Depression is an important issue that healthcare professionals have to look after. Much research confirms a high prevalence of depression and anxiety among elderly patients.

Aim of the study: To assessment Prevalence and determinants of depression among elderly patients attending the primary health care center in Makkah Al-Mukarramah in Saudi Arabia during the spread of the Corona virus for the year 2022.

Method: cross sectional study conducted at outpatient clinics who registered in the chronic disease clinic attended primary health care center in Makkah Al-Mukarramah, 2022. Sample population consists number of elderly patients attending in primary health care center. Our total participants were (200).

Results: the majority age were (48.0%) in (60-70) years, the majority of them were male (62.0%), most of the participants were widow(55.0%), regarding the education level the most of participant Illiterate were (44.0%) regarding Clinical variables the majority of participants have Chronic diseases were(89.0%)

Conclusion: The Prevalence and determinants of depression among elderly patients attending the primary health care center in Makkah Al-Mukarramah during the spread of the Corona viru. Psychosocial disadvantage and indicators of relatively severe covid infection seem to be risk factors for depression. A system for screening for these disorders employing feasible strategies should ideally be incorporated to mitigate both short term and long-term negative consequences of this pandemic, particularly in inpatient populations, who are already subject to various vulnerabilities.

Keywords: Prevalence, determinants, depression, elderly, patients, primary health care center

Introduction:

Background

Corona Virus Disease2019 (COVID-19) originated in Wuhan has spread throughout China from December2019, which has seriously threatened human health (1). On 30 the January. WHO announced the novel corona virus pneumonia (2) epidemics Public Health Emergency of International Concern (WHO, 2020). According to the statistics of the National Health Commission of the People's Republic of China,81, 054 confirmed cases, 687,680 suspected cases and 3261death shad been reported in China (3).

The prevalence of in depression among elderly patients most countries over the past five decades (4), rendering this a global phenomenon and a major public health concern. As per the WHO report burnout and depression have become a significant mental health concerns .(5) There is a body of evidence showing that elderly patients suffer from alarming rates of burnout and depression and that they continue to be affected into life.(6) Burnout is defined as a psychological condition involving emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment that occurred among different population who with other people in challenging situations like COVID-19 or during COVID-19.(7)

Stringent measures and drastic efforts have been taken by the Government of Saudi Arabia over the span of time to limit the spread of the virus in the first wave of COVID-19. Four weeks into the outbreak, the Government took an extreme step of complete lockdown, resulting in confinement in different provinces and cities, affecting more than 50 million people(8). As In Saudi Arabia is a substantial proportion of the population to cater to people's financial constraints, complete lockdowns were eased after a certain time, and smart lockdowns were implemented (9). These lockdowns caused major social disruption and panic among people, causing a significant shortage of medical masks, sanitizers, medicines, and

other basic necessities, including food items, due to hoarding.(10) Other than that, immense pressure on hospitals and medical staff was also reported due to the growing number of cases and a shortage of healthcare facilities and equipment. The fear of facing a shortage of essential medical and food supplies, the fatality associated with the pandemic, and the frustration of being quarantined/self-isolated could have caused a lot of distress and panic among the mass populace and depression (11)

In late years, there has been an expanding universal familiarity with medical problems regarding aging populations. Older individuals are regularly seen as lonely, hopeless, and sad. Although numerous old are confronting mounting physical afflictions, mental pressure, social misfortunes, and expanded reliance at the finish of life, most more established individuals are well adjusted emotionally for the majority of their later years.(12) Mood messes in the old age are normal, adversely affect alternative other medical conditions, and may prompt intellectual and practical decline.(13) Geriatric depression in this manner stays a productive region for clinical, translational and fundamental science research. (14) The aging population has increased rapidly over the last decades owing to two significant factors, namely, the reduction in mortality and fertility rates and improved quality of life, leading to an increase in life expectancy worldwide (15)

Globally, the number and proportion of people aged 60 years and older in the population are increasing. In 2019, the number of people aged 60 years and older was 1 billion. This number will increase to 1.4 billion by 2030 and 2.1 billion by 2050. By 2050, 80% of all older people will live in low and middle-income countries. (16)

In Saudi Arabia, there is restricted information regarding commonness of depression among grown-ups. The globe health association evaluated that the quantity of depression issue in Saudi Arabia is around 1,339,976 patients, which speaks to about 6.5% from Saudi population (17).

Literature Review:

In Oman, the reported prevalence of depression among medical students of 24.5% was almost half of ours. Locally, a recently published study from Bisha, KSA, showed that the prevalence of depressive symptoms among medical students was 26.8%. (18) Such results emphasize that depression is highly prevalent in this distinct population who might not seek mental health services because of fear of exposure and stigma. (19)

Previous study from Oman found that preclinical students have more depression and anxiety compared to students in the clinical phase. (20)

WHO reports on mental health of older adults over 60 years old with 7% prevalence of depression in the general older population (22), a Brazilian systematic review and met analysis study on 15,491 community-dwelling elderly people average age 66.5 to 84.0 years and 17 articles with a pooled prevalence rates of 7.0% for major depression, 26.0% for CSDS (clinically significant depressive symptoms), and 3.3% for dysthymia (23)

In Saudi Arabia there are few research led to consider depression among older patients as indicated by analyst information, each of these research each of GDS short structure as instrument to asses for depression . An research conducted in Abha city by Eisa Y. Ghazwani et al. in 2013 among four hundred older patients, demonstrated that the assessed commonness of depression among members, paying little mind to depression seriousness, was 63.7%(24).

Another research led likewise in Abha city in 2001 by M An Aboalfotouh et al. among 810 old people, evaluated the prevalence of depression as 17.5% among participant (25). A third research was led in Riyadh in 2014, by Abdulaziz U. Joury et.al, and was not restricted to Saudi populace including individuals who communicate in Arabic or English matured years or more, indicated that 59% of member were characterized between moderate to extreme depression(26)

While there are measure several instruments accessible to quantify depression, the Geriatric Depression Scale (GDS), first made by Disu, et al.(2019), has been tried and utilized widely with the more older age population.(27)

In another research directed by Mulugeta Girma et al . in Ethiopia in 2016 about geriatric depression prevalence among 352 patients. By utilizing GDS-15 the pervasiveness of sadness was 28.5% among participant. (25). Additionally, in study directed in Sudan by S.M .

about commonness of depression among 300 older patients. The research found the prevalence of depression was 47.5%. Depression was altogether connected with age ($P = 0.002$), level of training ($P = 0.015$), occupant. (27)

This pooled prevalence of depression among old age in the world (31.74%; 95% CI 27.90 to 35.59%) was higher than a global systematic review and meta-analysis study on 95,073 elderly populations aged >75 years and 24 articles in which a pooled prevalence of depression was 17.1% (95% CI 9.7 to 26.1%) (21), a global systematic review and meta-analysis study on 41 344 outpatients and 83 articles in which a pooled prevalence of depression was 27.0% (95% CI: 24.0% to 29.0%) (19).

Rationale

In Saudi Arabia there are few research led to consider depression among older patients as indicated by analyst information during COVID-19 . There is a significant proportion of COVID-19 infected individuals with neuropsychological complications such as depression and anxiety. Suicidal ideation and completed suicide are also reported, and an understanding regarding a etiological factor are essential for planning services. Therefore, we would like to determine the prevalence and determinants of anxiety and depression among inpatients with COVID-19 infection. Many studies have found that older patients are more likely to experience depressive and anxiety symptoms than the other populations studied, as older people are more likely to fall behind on social activities and become socially isolated and depressed.

Aim of the study

To assessment Prevalence and determinants of depression among elderly patients attending the primary health care center in Makkah Al-Mukarramah in Saudi Arabia during the spread of the Corona virus for the year 2022.

Objectives

- To assessment Prevalence and determinants of depression among elderly patients attending the primary health care center in Makkah Al-Mukarramah in Saudi Arabia during the spread of the Corona virus for the year 2022.

Methodology

Study area:

The study has been carried out in Makkah Al-mukarramah is the holy city of every Muslim in the world. It is the main place of the pilgrims to perform Umrah and Hajj. Makkah is a modern city and there is a continuous working to improve the infrastructure of Makkah for the sake of both Makkah citizens and pilgrims. Makkah has many hospitals in addition to King Abdullah Medical city which is tertiary center. Also, it has 85 PHC centers under supervision of Directorate of Health Affairs of Makkah. These centers distributed under 7 health care sectors and each sector contains around 10 – 14 primary health care centers. Three health care sectors inside Makkah city (urban) with 37 primary health care centers underneath and four sectors are outside Makkah (rural) with 48 primary health care centers. The three healthcare sectors inside Makkah are Al-Ka'akya with 11 primary healthcare centers, with 12 primary healthcare centers and Al-Zahir with 14 primary healthcare centers.

Study population:

Elderly patients (60 to >80 years) attending the chronic disease clinic primary health care center in Makkah Al-Mukarramah, throughout the period of the study and accept to participate in the study.

Study design :

Cross-sectional, descriptive study.

Inclusion criteria:

- All Saudi elderly patients (males and females) attending the chronic disease clinic in primary health care center in Makkah Al-Mukarramah.
- Patients who can write and read in Arabic Language.

Exclusion criteria:

- Patients who refuse to participate in the study
- Persons who have reported severe mental disabilities.

Sample size:

The total number of elderly patients attending the chronic disease clinic primary health care center in one month is 2111. Based on this information sample size was calculated using a website (raosoft.com). The resulted estimated sample size is 200 elderly patients. The confidence interval is 95% and margin of error is 5%. The estimated prevalence used is 50% to calculate maximum sample size.

Sampling technique

Regarding health care center selection, there are three health care sectors inside Makkah Al-Mukarramah which are Al-Ka'akya, Al-Zahir and Al-Adl. By using simple random sample technique (by using randomizer.org), Al-Adl health care sector was selected. There are 12 primary health care centers under health care sector which was enumerated from 1 to 12. Again, by using simple random sample technique the chronic disease clinic in primary health care center was selected (by using randomizer.org website). Regarding patients'

selection, the total number visiting the chronic disease clinic in PHC is 1611 per month and the sample size is 200. The data collection period is 30 days (four weeks minus weekends). Every day there are nearly 80 patients attending in the chronic disease clinic in PHC in both section (male and female sections). To collect data from sample size, the researcher needs nearly 15 patients per day to collect desired sample size. The researcher has been selecting every 4th patient to cover the sample size during data collection period.

Data collection tool :

The researcher has been use geriatric depression scale (GDS) which is tool designed first by Yesavage et al., to study the depression among geriatrics. The researcher was use the Arabic version of this tool since there is study conducted to validate the Arabic version. There are two types from this tool the long version with questions and short form with 15 questions. The researcher has been use the short form with the 15 questions. The questionnaire has been having a parts. The first part has been containing questions about socio-demographic data. The second part has been the short-translated form of GDS. The third part has been about possible risk factors .

Data collection technique:

The researcher has been use Arabic version of the questionnaire since the target populations are Saudi elderly. The questionnaire has been distributed to all patients attending the chronic disease clinic in primary health care center during the data collection period (which is 30 days initially). The questionnaire has been distributed equally between male and female section because it is separate departments. The researcher was train a nurses in order to optimize the inter rater reliability. The researcher has been select the patients in the waiting area and give them the questionnaire in the waiting area in male section then waiting them to complete it and after that I has been collecting it from them while in female section, has been trained nurse was do the same in female waiting area. After that, the researcher was collecting the paper daily from the nurse for data entry and analysis after thanking the participants for their precious time and effort .

Data entry and analysis

Statistical analysis has been performed using SPSS software program (Statistical Package for Social Sciences), version 24.0. Descriptive using listing and frequency and analytic statistics using chi-square test and t-test to analyse the association and the difference between two categorical variables or using other statistical tests if needed. P value less than 0.05 as level of significance.

Pilot Study

A pilot study on 25 participants representing 10% of study sample size (out of study area) has been conducted to explore methodology tool and environment and plan to overcome these problems.

Ethical considerations

- Permission from research committee in the joint program of family medicine in Makkah Al-Mukarramah has been obtained

- Permission from the Makkah joint program of family medicine has been obtained.
- Permission from the Directorate of Health Affairs of the Holy Capital Primary Health Care has been obtained.
- Permission from administration of public health in Makkah Al-Mukarramah has been obtained.
- Written consents from all participants in the questionnaire has been obtained.
- All information will be confidential, and a result has been submitted to the department.

Budget

The research has been self-funded.

Results

Table 1: Distribution the socio-demographic details of study participants of depression among elderly patients attending to primary health care center (n=200)

	N	%
Age		
60-70	96	48
70-80	70	35
>80	34	17
Gender		
Female	76	38
Male	124	62
Marital status		
Married	90	45
Widow	110	55
Education		
Illiterate	88	44
Primary	62	31
Preparatory	24	12
Secondary	26	13
Clinical variables		
Chronic diseases	178	89
Physical or mental disabilities	110	55
Social problems	136	68
Family history of depression	90	45
Medicines continuously	70	35

There were 200 participants, and the majority age were(48.0%) in (60-70)years, followed by (70-80) were(35.0%). The majority of them were male(62.0%), while female(38.0 %). The most of the participants were widow(55.0%) while married were(45.0%), regarding the

education level the most of participant Illiterate were (44.0%) while primary education were(31.0%), regarding Clinical variables the majority of participants have Chronic diseases were(89.0%) while Social problems were (78.0%) followed by Physical or mental disabilities were(55.0%)

Table 2: Distribution history of depression in participants during the spread of the Corona virus .

Depression		
	N	%
Negative	134	67
Positive	66	33
Total	200	100
Chi-square	X ²	22.445
	P-value	<0.001*

Table 2 show that regarding the negative depression among elderly patients during the spread of the Corona virus the most of (67.0%) participants have negative depression while (33.0%) have positive depression while is a significant relation between depression were P-value=0.001 and X² 22.445

Figure 1 Distribution history of depression in participants during the spread of the Corona virus

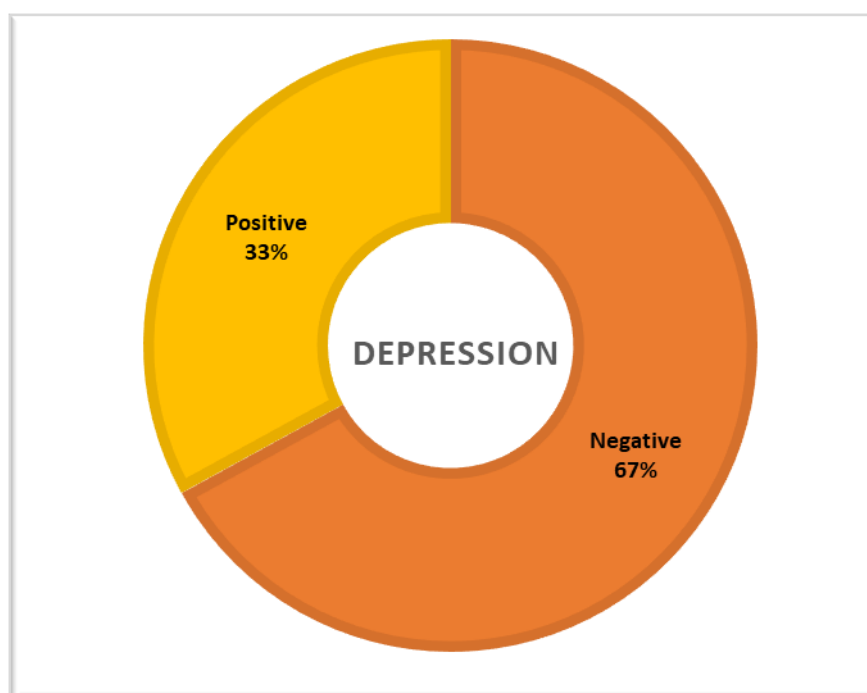


Table 3: Distribution the relation between depression and socio-demographic data (age, Gender , Marital status and education) among elderly patients during the spread of the Corona virus.

		Depression				Total		Chi-square	
		Negative (N=134)		Positive(N=66)					
		N	%	N	%	N	%	X ²	P-value
Age	60-70	44	32.84	52	78.79	96	48	37.81	<0.001*
	70-80	62	46.27	8	12.12	70	35		
	>80	28	20.90	6	9.09	34	17		
Gender	Female	18	13.43	58	87.88	76	38	100.886	<0.001*
	Male	116	86.57	8	12.12	124	62		
Marital status	Married	75	55.97	15	22.73	90	45	18.424	<0.001*
	Not married	59	44.03	51	77.27	110	55		
Education	Illiterate	61	45.52	27	40.91	88	44	36.014	<0.001*
	Primary	54	40.30	8	12.12	62	31		
	Preparatory	13	9.70	11	16.67	24	12		
	Secondary	6	4.48	20	30.30	26	13		

Table 3 show that is a significant relation between depression and age (increase in aged between 60-70 years by the Positive depression (78.79%) where total (48.0%) and P-value=0.001 and X² 37.81 followed by age between 70 -80 years by the negative depression were (46.27%) years while total (35.0%). Regarding the gender is a significant relation between depression and gender (increase in male gender in negative were (86.57%) while Total 62.0% and P-value=0.001 X² 100.886 followed by gender in female by the Positive depression were (87.88%) . Regarding the Marital status show that is a significant relation between depression and marital status(increase in married were (55.97%) while Total 45.0% and P-value=0.001 X² 18.424 followed by Not married by the Positive depression were (77.27%). Regarding the education level is a significant relation between depression and education (increase in Illiterate in negative were (45.52%) while Total 44.0% and P-value=0.001 X² 63.014 followed by Primary by the negative depression were (40.30%) .

Figure 2 Distribution the relation between depression and socio-demographic data (age, Gender , Marital status and education) among elderly patients during the spread of the Corona virus.

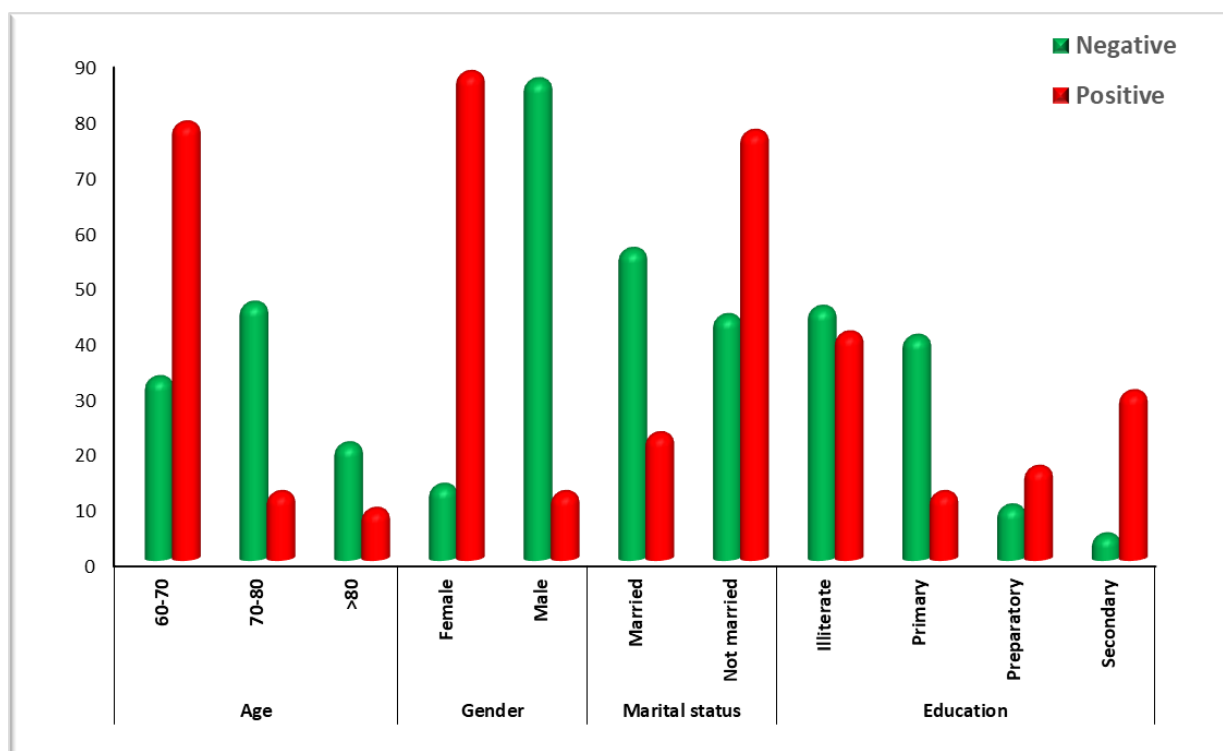


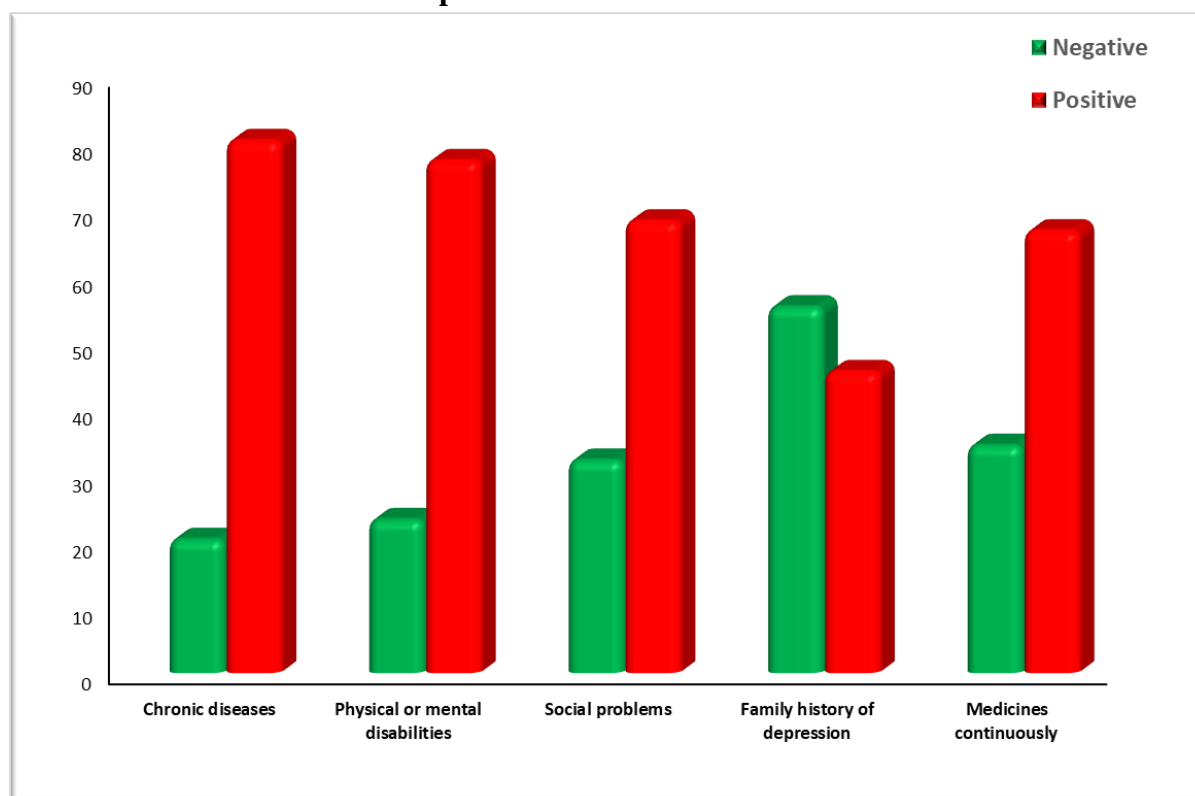
Table 4: Distribution history of depression and disease in participants during the spread of the Corona virus

Clinical variables	Depression				Total		Chi-square	
	Negative		Positive					
	N	%	N	%	N	%	X ²	P-value
Chronic diseases	27	20.15	53	80.30	178	89.0	8.450	0.004*
Physical or mental disabilities	31	23.13	51	77.27	110	55.0	4.878	0.027*
Social problems	43	32.09	45	68.18	136	68.0	0.045	0.831
Family history of depression	74	55.22	30	45.45	90	45.0	18.615	0.000*
Medicines continuously	46	34.33	44	66.67	70	35.0	0.044	0.833

Table 4 show that is a significant relation between depression and Chronic diseases (increase in positive were (80.30%) where total 89.0% and P-value=0.004 and X²8.450 . Regarding the Physical or mental disabilities is a significant relation between depression and Physical or mental disabilities (increase in positive were (77.27%) where total 55.0% and P-value=0.027 and X²4.878 . Regarding the Social problems is no significant relation between depression and Social problems (increase in positive were (68.18%) where total 68.0% and P-value=0.831 and X² 0.045. Regarding the Family history of depression is a significant

relation between depression and Family history of depression (increase in negative were (55.22%) where total 45.0% and P-value=0.000 and X^2 18.615. Regarding the Medicines continuously is no significant relation between depression and Medicines continuously (increase in positive were (66.67%) where total 35.0% and P-value=0.833 and X^2 0.044.

Figure 3 Distribution history of depression and disease in participants during the spread of the Corona virus



Discussion

Growth in the average life expectancy of people in the KSA is increasing with 5 percent of the population (1.2 million individuals) classified as being elderly (28). This indicates that the elderly population in the country is increasing every year, with all the economic and social implications this has. In our study, there were 200 participants, and the majority age were (48.0%) in (60-70) years, followed by (70-80) were (35.0%). The majority of them were male (62.0%), while female (38.0 %). The most of the participants were widow (55.0%) while married were (45.0%), regarding the education level the most of participant illiterate were (44.0%) while primary education were (31.0%), regarding Clinical variables the majority of participants have Chronic diseases were (89.0%) while Social problems were (78.0%) followed by Physical or mental disabilities were (55.0%). (See table 1)

Ageing is affected by the development of a variety of psychiatric illnesses, the most prevalent among them being depression. The proportion of depression among elderly patients attending chronic disease clinic in primary health care center in Makkah Al-Mukarramah, 2022 . show that regarding the negative depression among elderly patients during the spread of the Corona virus the most of (67.0%) participants have negative

depression while (33.0%) have positive depression while is a significant relation between depression were $P\text{-value}=0.001$ and $X^2 22.445$ (See table 2)

Of the five rural Indian community-based studies, three reported a high prevalence of depression among elderly persons. All these studies used the shorter version of the Geriatric Depression Scale-15 (GDS-15) for diagnosis of depression, which has a high sensitivity but low specificity. Therefore, there is a possibility of overestimating the true prevalence due to high false-positive results.(29) A cross-sectional community-based study conducted by. Joury et al. (2014) found among 82 persons aged over 60 years in a rural area of Hooghly district of West Bengal estimated the prevalence of depression as 53.7% (26). This high prevalence may be explained by a small sample size and the tool (Bengali version of the GDS-15) used to identify depression.(21) . estimated the prevalence of depression as 47% from the rural area of Valadi of Tamil Nadu. (21), conducted a community-based study among elderly persons in six villages in Maval Taluka of Pune, Maharashtra and estimated the prevalence as 41.1%.(22) The high prevalence of depression among elderly persons in the above studies could be due to the use of GDS-15, a screening tool, while we used a diagnostic interview to confirm the diagnosis. On the basis of GDS-30 (screening tool) in our study, the prevalence of depression was 19.2% (95% CI 15.7%–23.4%), which was similar to the estimated prevalence for Indian studies (21.9%) in the meta-analysis done by. (29) as well as the prevalence found in the study conducted by in rural areas of duped strict of Karnataka (21.7%).(29)

Show that is a significant relation between depression and age (increase in aged between 60-70 years by the Positive depression (78.79%) where total (48.0%) and $P\text{-value}=0.001$ and $X^2 37.81$ followed by age between 70 -80 years by the negative depression were (46.27%) years while total (35.0%). Regarding the gender is a significant relation between depression and gender (increase in male gender in negative were (86.57%) while Total 62.0% and $P\text{-value}=0.001$ $X^2 100.886$ followed by gender in female by the Positive depression were (87.88%) . Regarding the Marital status show that is a significant relation between depression and marital status(increase in married were (55.97%) while Total 45.0% and $P\text{-value}=0.001$ $X^2 18.424$ followed by Not married by the Positive depression were (77.27%). Regarding the education level is a significant relation between depression and education (increase in Illiterate in negative were (45.52%) while Total 44.0% and $P\text{-value}=0.001$ $X^2 63.014$ followed by Primary by the negative depression were (40.30%) . (see table 3)

The Saudi culture and traditional social values dictate high respect for and care of the elderly by members of the extended family (24) The association between more privacy and depression can be explained by the tendency of the elderly in the extended family system of Saudi Arabia to associate more privacy with alienation and neglect by other family members. The finding of more depression in the widowed is in keeping with numerous other studies. (22) In the present study, age was a significant predictor for depression in multivariate analysis. This finding differs with other support by other studies reporting no effect of age on depressive symptomatology.(23) regarding the distribution history of depression and disease in participants during the spread of the Corona virus show Figure(3). Depression was higher among illiterates compared to literates in this study. Similar findings were reported by (23) These observations strengthen the fact that poor educational background is an important risk factor for depression . Though the prevalence of depression decreased with increase in

educational level, it was not statistically significant. Similar to The presence of chronic medical illness has been found to increase the risk of depression in studies reported by Torun, et al.(2020).(30)

Conclusions

Results here showed the COVID-19 pandemic is having a significant impact on patients with depression in elderly regardless of infection status. physical inactivity may be a factor that leads to an increase in depression in elderly during Covid-19 Pandemic, the pandemic is having a significant impact on those without infections also, depression is common among elderly persons in. Individuals providing healthcare to elderly persons need to be trained to identify depression and take appropriate action elderly persons with chronic diseases deserve special attention, there is a need to screen them for depression. Around one third elderly patients attending the primary health care setting were found to be suffering from depression .

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