

# Extent Of Depression Among Patients With Gastrointestinal Tract Symptoms In Outpatient Clinic Of Al-Hussein Teaching Hospital In Al-Nasiriyah At 2018

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## Abstract

**Background:** Depression is one of the most common mental health conditions in the general population as well as in clinical practice. In clinical studies, there is a strong relationship between gastrointestinal symptoms and depression and the gastrointestinal symptoms remain for longer time and are more serious than inpatients without depression.

**Objective:** To estimate extent of depression in gastrointestinal tract symptoms in medical outpatient clinic attendees.

**Methods:** The study was a cross-sectional analytical study for 154 adult population in the Al-Hussein teaching hospital in Nasiriyah city, conducted at first March 2018 and completed at end of September 2018. Tools of method was questioner and for diagnosis of depression was used Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM- IV) criteria. refusal rate was zero and for statistic analysis was used SPSS version 22.

**Result:** The study showed that 43.5 % of subjects with gastrointestinal symptoms suffer from depression. depression found in 40.7% of females and 47.1% of males. 50.0% of depressed patients were in two age groups of 20 - 44 years and  $\geq 65$  years.

Most of depressed patients were suffering constipation (51.3%), change in appetite (51.3%) and change in weight (50.7%), where only change in appetite had significant association with depression, were p-value = 0.001. More of depressed subjects had GI symptoms with one month duration and  $\geq 7$  numbers of GIT symptoms.

**Recommendation:** Raising awareness of general population about the depression and relation of that with GIT symptoms.

**Key words:** depression, gastrointestinal symptoms, Prevalence, Al-Nasiriyah, 2018.

## Introduction

In the majority of patients with gastrointestinal (GIT) symptoms(40–80%), no pathological cause for their symptoms can be found,[1] and some patients may suffer from several GIT symptoms that have been present for many years.[2] When these symptoms related to disturbance of motility, hypersensitivity of visceral, change in function of mucosal and immunity, altered gut micro biota and change in central nervous system(CNS) processing define as functional disorders.[3]

FGIDs are often associated with affective disorders, such as depression, anxiety, panic, and posttraumatic stress disorder (PTSD).[4]

In patients affected by GIT diseases, depression represents a common recurrent and serious disorder which lead to diminished functioning and quality of life, medical morbidity, and mortality. [2,5,6]

Psychological factors commonly influence onset, severity, and outcome in the functional GIT disorders,[7] which cause the patients often have worse somatic symptoms, need more time for recovery and worse prognosis, so need to consume more medication.[8-10]

Depression is the fourth leading cause of disease burden, accounting for 4.4% in the year 2000, and it causes the largest amount of non-fatal burden, for almost 12% of all total years lived with disability worldwide. [6] Previous studies (Chinese 14.39% and Italian 27% studies) showed that the prevalence of depressive disorders in

patients with GIT disorders was high.[11,12]

Sustained and acute life-threatening stressors play an important role in the onset and modulation of GI symptoms as well as in the development of affective disorders and PTSD. [4] Although GIT diseases are related to mood disorders like depression and anxiety, “40%-90% of patients with depressive disorders” do not receive suitable medical and health services and treatment because majority of patient cannot identified by gastroenterologists ,[13-15] so knowledge about the psychosocial aspects of the functional gastrointestinal disorders (FGIDs) is fundamental and critical to the understanding of the FGIDs and their effective treatment. [2]

## **Methodology**

### **1. Study design**

A hospital based cross sectional analytical study. The study was started in March 2018 and completed end of September 2018.

### **2. Population**

The study included adult patient with gastrointestinal symptoms who attended to the GIT outpatient clinic in Al-Hussein teaching hospital in Al-Nasiriyah city, during the study period.

**3. Inclusion criteria:** participants with age  $\geq 18$ , of either sex presenting with GIT symptoms as abdominal pain, heartburn, reflux, dyspepsia, dysphagia, constipation, diarrhea, vomiting and nausea in stable state. [1]

**4. Exclusion criteria :** patients who were under 18 years, patients with any cognitive

or physical impairment , patients with history of any major systemic disorder (involving any system apart from GIT), Pregnancy, Malignancy, Drug dependency, Seizure disorders, patientwith severe GIT disease and in instable state.

months due to low number of attendants to clinic.

**5. Response rate:** No subject refused to participate in the study, so the response rate was 100%.

**6. Sample size calculation**

Size of sample was calculated according the sample formula: [16]

$$n = (z^2pq) / d^2$$

n= sample size

z= z statistic for a level of significance

p= estimated prevalence rate in WHO which was(3.7%) in Iraq.[17]

q= (1-p)

d= precision

$$N = \frac{(1.96)^2 * p(1-p)}{(0.04)^2} * 1.8$$

$$N=153.9 \sim 154$$

**7. Sampling procedure:** For collect the population of study I gone to clinic for 5 day per week and use systematically random way and was selected them as every 2 attendants to outpatient clinic and then take third one if had the inclusion criteria . We select the participants after diagnosis of symptoms was related to GIT system by the doctor. We gave the questionnaires to them for self answering because there is Arabic version of CIDI questionnaire, but if there was illiterate, their relative or me read the questionnaire without any difference for them.

Period of collection of data last for 2

**8. The study tools:**

**The data collected through two questionnaire forms, the first one consist of two sections:**

**Section 1:**

This includes questions about the name, age, sex, number of family members, number of children, occupation, marital status, monthly income, education level, and address.

**Section 2:**

It includes the GIT symptoms that participants suffer from , and duration of symptoms. It also includes history of psychiatric visit if present and drug history.

**Second questionnaire**

The second questionnaire is the depression modules of the CIDI to MDD. The CIDI interview includes three screening (known as STEM) questions about sadness/depressed mood, feelings of discouragement, and loss of interest lasting several days or longer. Participants who select any of the three questions will give the depression module. Those who failed to endorse any of the three STEM questions will be skipped out of the depression module". [18]

In accordance with DSM-IV criteria,<sup>[19]</sup> can diagnose depression with present of “ five (or more) from following symptoms during the same 2-week period ; at least one of the key symptoms is either (1) Loss of interest or pleasure or (2) Depressed mood.

(1) Depressed mood indicated by either subjective report or observation made by others most of the day, nearly every day.

(2) Markedly diminished pleasure or

interest in all, or almost all, activities most of the day, nearly every day

(3) Significant weight change when not dieting (e.g., a change of more than 5% of body weight in a month), or change in appetite nearly every day.

(4) Hypersomnia or insomnia nearly every day

(5) Psychomotor retardation or agitation nearly every day

(6) Loss of energy or fatigue nearly every day

(7) Feelings of worthlessness or excessive or inappropriate guilt nearly every day

(8) Indecisiveness, or diminished ability to think or concentrate

(9) Recurrent thoughts of death, recurrent suicidal ideation, or a suicide plan or attempt for committing suicide

#### Severity of depressive episode [19]

Severity of depressive episode can be divided in to mild, moderate and severe according to number of symptoms (criterion A and B) and functional impairment .

#### A: Depressive mood

Loss of interest and enjoyment in activities decrease activities and reduced energy

#### B:

Reduce confidence and self esteem

Unworthiness and feel of guilt

Negative thought

Disturbed sleep

Diminished appetite

Ideas of self harm

**Mild:** 5-6 symptoms but mild in severity and functional impairment or >1 from

column A plus 1-2 from column B.

**Moderate:** 7-8 symptoms but moderate functional impairment or >1 from A plus 2-3 from B.

**Severe :** All 3 from A plus >3 from B. or fewer symptoms but any of severe functional impairment, psychotic symptoms, recent suicide attempt, specific suicide plan."

In this study, the current MDD defined in the past 12 months and there was no organic causes and for diagnosis and detection of severity I take help from my supervisor.

#### 9.Pilot study:

the pilot study was performed at first of March 2018 on fifteen participants to know time ,cost and feasibility that required for the final study and also to know the refusal rate . At end of this study results were discussed with the supervisor for modified and managed.

#### 10.Definition of variables

**Age:** last birthday in years and all  $\geq 18$  years were involved in the study .

**Sex (male or female)**

**Marital status:** classified as:

Married

single (unmarried)

Widow

Divorced

#### Socioeconomic status:

It was measured depending on following scoring system [20]:

Living in owned or rented/illegal house

scored as 1 or 0.

Having or not having a private car scored as 1 or 0.

The number of electrical appliances in the household are scored as:

# presence of up to 2 electrical appliance scored as (1).

#presence of 3-5 electrical appliances scored as (2).

# presence of 6 or more electrical appliances scored as (3).

The overall socioeconomic status was calculated for each subject as following:

#scoring of  $\leq 2$  was considered as low socioeconomic status,

#scoring of 3-4 was considered as moderate socioeconomic status,

#scoring of  $> 4$  was considered as high socioeconomic status.

#### Education level measurement

It was classified as: [21]

**Illiterate** which mean a person who is unable to read or write

**Primary schools** is typically the first stage of formal education, coming after preschool and before secondary education include 6-12 years.

**Intermediate present or middle school** is an educational stage which exists in some countries, providing education between primary school and secondary school.

**Secondary schools is** both an organization that provides secondary education and the building where this takes place. Some secondary schools can provide both lower secondary education and upper secondary education (levels 2 and 3 of the

ISCED scale), but these can also be provided in separate schools ,as in the American middle school- high school system.

**College** is an educational institution or a constituent part of one.

**Occupation level measurement:** classified as:

Employed (governmental)

Non-employed

Self-employed

House-wife

Student

Retired

**Residency:** urban, rural, semi urban

#### 11. Ethical consideration

An ethical clearance was obtained from Al-Hussein teaching hospital management to perform the study. An inform consent also was taken from all participants .

**12. Statistical analysis:** SPSS version 23 was used for data analysis. Descriptive statistic, frequencies, percentages, association, testes of significance were used for analysis of categorical variables. Chi-square was used for categorical variables and Fishers exact test was used when more than 20% of expected variable was less than 5. P-value  $<0.05$  was considered statistical significant.

## Result

A total of one hundred and fifty four (154) participants included in this cross sectional study with mean age  $37.74 \pm 14$  years with male to female ratio (0.7:1). More than half of the participants (55.9 % of males and 51.2 % of females) were falling within the age group 20-44 years old and minority of them (1.6 % of males and 3.5 % of females) were falling within the age group  $\geq 65$  years. Nearly 2/3 of them (65.6%) lived in urban area and 11.7% lived in rural area. Regarding the occupation there was significant differences between the two sexes, nearly one third of males either employed (29.4 %) or self employed (39.7 %), majority of females (81.4 %) were housewives. The educational level shows significant differences between the two sexes, nearly third of the females either illiterate (34.9%) or primary (29.1 %), and nearly third of the males were primary level (30.9%). About 3/4 of the participants (79.2%) at the moderate socioeconomic status and 11.7% of them were at high socioeconomic status . More than 2/3 of them belong to family with more than 6 members . Most of them were married (70.1 %) as show in table 1.

Table 2 shows distribution of the participants according to the depression state and sociodemographic characteristics . There was no significant association between the depression state and each of the following ; age, sex, residency, occupation , educational level , socioeconomic status, family member and marital status , where the p- value more than 0.05. It was observed two age group with high prevalence, 50.0% of depressed patient located at 20-44 years, and 50.0% of  $\geq 65$  years . The 40.7% were from females and 47.1% from males , more than half (66.7%) were from rural area , 55.9% students , 56.5% from secondary education, 50.0% from high social class , 43.3% of family with 4-6 members and 43.6% of family  $> 6$  members and 87.5% of widow participants .

Table 3 show relationship between symptoms of the studied population and depression. It was show association between prevalence of depression and change in appetite ( $p=0.001$ ) , where p-value less than 0.05 , but there was no significant association with each of the following abdominal pain, heart burn, dyspepsia, dysphagia, nausea or vomiting, abdominal distention, diarrhea, and constipation, where p-value more than 0.05. This table also show that more of half (57.1%) of depressed participants had history of psychological disease .

**Table1: Socio-demographic characteristics of the studied participant according the gender.**

Variables	Males No.%	Females No.%	Total No. (%)	$\chi^2$	P
<b>Age *</b>				4.740	.186
15-19 years	3(4.2)	12(13.9)	15(9.7)		
20 -44 years	38(55.9)	44(51.2)	82(53.2)		
45 -64 years	26(38.3)	27(31.4)	53(34.5)		
≥ 65 years	1(1.6)	3(3.5)	4(2.6)		
<b>Residency</b>				4.342	.114
Urban	46(67.5)	55(63.9)	101(65.6)		
Semi urban	18(26.6)	17(19.8)	35(22.7)		
rural	4(5.9)	14(16.3)	18(11.7)		
<b>Occupation*</b>				105.858	.000
employed	20(29.4)	7(8.1)	27(17.5)		
non-employed	7(10.3)	0(0.0)	7(4.5)		
self-employed	27(39.7)	0(0.0)	27(17.5)		
house-wife	0(0.0)	70(81.4)	70(45.5)		
student	9(13.2)	9(10.5)	18(11.7)		
retired	5(7.4)	0(0.0)	5(3.3)		
<b>Educational level</b>				13.458	.009
Illiterate	11(16.2)	30(34.9)	41(26.6)		
Primary	21(30.9)	25(29.1)	46(29.9)		
Elementary	8(11.8)	14(16.3)	22(14.3)		
Secondary	12(17.6)	11(12.8)	23(14.9)		
collage	16(23.5)	6(6.9)	22(14.3)		
<b>Socioeconomic state</b>				1.416	.493
Low	10(14.7)	8(9.3)	18(11.7)		
Medium	51(75.0)	71(82.6)	122(79.2)		
High	7(10.3)	7(8.1)	14(9.1)		
<b>Family Member*</b>				5.570	.065
<4	3(4.4)	4(4.7)	7(4.5)		
4-6	19(27.9)	11(12.8)	30(19.5)		
≥ 6	46(67.7)	71(82.5)	117(76.0)		
<b>Marital state*</b>				4.684	.182
Married	50(73.5)	58(67.4)	108(70.1)		
Single	16(23.5)	17(19.8)	33(21.4)		
Divorced	2(3.0)	3(3.5)	5(3.2)		
Widow	0(0.0)	8(9.3)	8(5.3)		
<b>Total</b>	68(100)	86(100)	154(100)		

**Table 2: Distribution of socio-demographic characteristic of the studied population according to their depression state.**

Variables	Depression no.%	No depression no.%	Total no. (%)	$\chi^2$	P
<b>Age*</b>				4.525	0.201
20 < years	7(46.7)	8(53.3)	15(100)		
20 -44 years	41(50.0)	41(50.0)	82(100)		
45 -64 years	17(32.1)	36(67.9)	53(100)		
≥ 65 years	2(50.0)	2(50.0)	4(100)		
<b>Sex</b>				.625	0.429
Male	32(47.1)	36(52.9)	68(100)		
Female	35(40.7)	51(59.3)	86(100)		
<b>Residency</b>				4.549	0.102
Urban	40(39.6)	61(60.4)	101(100)		
Semiurban	15(42.9)	20(57.1)	35(100)		
Rural	12(66.7)	6(33.3)	18(100)		
<b>Occupation*</b>				5.287	0.386
Employed	9(33.3)	18(66.7)	27(100)		
non-employed	3(42.9)	4(57.1)	7(100)		
self-employed	14(51.9)	13(48.1)	27(100)		
house-wife	30(42.9)	40(57.1)	70(100)		
Student	10(55.9)	8(44.4)	18(100)		
Retired	1(20.0)	4(80.0)	5(100)		
<b>Educational level</b>				2.524	0.640
Illiterate	16(39.0)	25(61.0)	41(100)		
Primary	21(45.7)	25(54.3)	46(100)		
Intermediate	9(40.9)	13(59.1)	22(100)		
Secondary	13(56.5)	10(43.5)	23(100)		
College	8(36.4)	14(63.6)	22(100)		
<b>Socioeconomic state</b>				1.026	0.599
Low	6(33.3)	12(66.7)	18(100)		
Medium	54(44.3)	68(55.7)	122(100)		
High	7(50.0)	7(8.0)	14(100)		
<b>Family member*</b>				0.089	0.999
<4	3(42.9)	4(57.1)	7(100)		
4-6	13(43.3)	17(56.7)	30(100)		
≥ 6	51(43.6)	66(56.4)	117(100)		
<b>Marital state*</b>				5.748	0.104
Married	48(44.4)	60(55.6)	108(100)		
Single	11(33.3)	22(66.7)	33(100)		
Divorced	1(20.0)	4(80.0)	5(100)		
Widow	7(87.5)	1(12.5)	8(100)		
<b>Total</b>	67(43.5)	87(56.5)	154(100)		

\*Exact fisher test.



Table 3: relationship between GIT symptoms of the studied population and depression .

Variables	Depression no.%	No depression no.%	Total no. (%)	$\chi^2$	P
<b>Abdominal pain*</b>				0.794	0.373
Yes	64(44.4)	80(55.6)	144(100)		
No	3(30.0)	7(70.0)	10(100)		
<b>Heart burn</b>				0.238	0.626
Yes	32(41.6)	45(54.8)	77(100)		
No	35(45.5)	42(54.5)	77(100)		
<b>Dyspepsia</b>				0.245	0.620
Yes	12(48.0)	13(52.0)	25(100)		
No	55(42.6)	74(57.4)	129(100)		
<b>Dysphagia</b>				0.618	0.432
Yes	7(53.8)	6(46.2)	13(100)		
No	60(42.6)	81(57.4)	141(100)		
<b>Nausea or vomiting</b>				0.638	0.424
Yes	45(45.9)	53(54.1)	98(100)		
No	22(39.3)	34(60.7)	56(100)		
<b>Abdominal distention</b>				2.722	0.099
Yes	50(48.1)	54(51.9)	104(100)		
No	17(34.0)	33(66.0)	50(100)		
<b>Change of appetite</b>				1.979	0.001
Yes	60(51.3)	57(48.7)	117(100)		
No	7(18.9)	30(81.1)	37(100)		
<b>Change of weight</b>				2.529	0.112
Yes	34(50.7)	33(49.3)	67(100)		
No	33(37.9)	56(62.1)	87(100)		
<b>Diarrhea</b>				0.000	0.993
Yes	27(43.5)	35(56.5)	62(100)		
No	40(43.5)	52(56.5)	92(100)		
<b>Constipation</b>				1.285	0.257
Yes	20(51.3)	19(48.7)	39(100)		
No	47(40.9)	68(59.1)	115(100)		
<b>Psychological disease*</b>				0.555	0.456
Yes	4(57.1)	3(42.9)	7(100)		
No	63(42.9)	84(57.1)	147(100)		
<b>Total</b>	67(43.5)	87(56.5)	154(100)		

\*Exact fisher test.

## Discussion

A hospital based observational, cross-sectional study extended over 7 months to include (154) attendants to gastrointestinal outpatient clinic in Al-Hussein teaching hospital in Al-Nasiriyah city to study the prevalence of depression in subjects suffering from gastrointestinal symptoms. The current study showed that the high prevalence of depression distributed in participants was 43.5%, like the Indian studies [22,23] were 43.1 %, 37.1 %. The factors that caused high prevalence in our study were may be due to methods or tools, population, setting of population, and season. The unstable condition of Iraq, where included successive wars in the previous years and absence of security in recent years, also may affected the people psychologically, and the state of unemployment and loss of suitable services had left people desperate, that also can play important role for appear of MDD.

Regarding severity of depression, participates with mild (30(44.8%) members) severity had higher prevalence than other degrees, followed by moderate (19(28.4.4%) members) and sever (18 (26.8 %) members). This differences in severity, may be returns to going of patient who with sever degree to specialist and subjects which suffers from mild degree come to clinic due to mild symptoms or not aware from their depressed condition.

In current study 50.0% of participants with age 20-44 and  $\geq 65$  had depression, that this high prevalence is similar to

Korean study [24] 57% for 18-44 and Indian study [22] that were 52.8% for age 20-29.

Regarding the sex, 47.1% of males had depression in the current study that is similar to Indian study (47.2%), [16] but regarding the females 40.7% and 52.9% were results for our study and Indian [22] study respectively, that are no similar.

The current study show no significant association between occupational state and depression and the highest percentage was found with those who were students (55.9%), while in Iranian study, [25] participants that has job were include more prevalent of depression. And regarding the educational state, were secondary school level (56.5%) had high percentage, where was similar to Pakistan study (57.0%), [26] where the secondary school level. Regarding the socioeconomic state, percentage of depression were higher in participants with high socioeconomic level (50.0 %) were not similar finding reported from Indian study (low level= (47.1).[22]

In current study seen the prevalence of depression were high in widow participants (87.5%), but there was no significant association, like to other study which the Widow (66.7%) was more prevalent. [22]

The distribution of depression in rural area were (66.7%) in current study, where in Indian study [22] also the rural area had higher level (44.4%). [22] In present study, most frequent GIT

symptoms were abdominal pain (95.5 %), change in appetite (89.6 %), abdominal distention (74.6 %), nausea and vomiting (67.2 %) and change in weight (50.7%) , while the more frequent symptoms in depressive participants were constipation (51.3%), change in appetite (51.3%), change in weight (50.7%) and abdominal distention (48.7%), and there was significant association among depression and change in appetite, where p-value =0.001. In other study [27].

Regarding the GIT symptoms, more of depressive participants were suffer from  $\geq 7$  symptoms (55.9%) like Saudi study [27] that (43.92%) from participants were suffer from multiple complaints.

In this study (63.3%) of participants had 1 month duration of symptoms, while in

Saudi study [96] 51.7% of subjects had suffer from complaints for 6-30 years.

## Conclusion

- 1.The study findings revealed that depression were high in Al-Nasiriyah population .
2. Most of the participants with depression were in two age groups 20-44 years and  $\geq 65$  years.
- 3.In this population study, more of depressive participants had more than 7 GIT symptoms .
- 4.In this study 57.1% of participants were with history of psychiatric disease, that this result show importance of psychological history for incidence of depression.

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## مدى انتشار مرض الكآبة لدى الأشخاص الذين يعانون من أعراض الجهاز الهضمي في أستراليا مستشفى الحسين التعليمي في الناصرية عام ٢٠١٨

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### الخلاصة:

واحد من أكثر حالات الصحة العقلية شيوعا في الممارسة السريرية وفي عموم السكان هو الاكتئاب. في الدراسات السريرية ، هناك علاقة قوية بين أعراض الجهاز الهضمي والاكتئاب. وتبقى الأعراض المعوية لفترة أطول وأكثر خطورة في المرضى الذين يعانون من الاكتئاب. الهدف: دراسة مدى انتشار الاكتئاب لدى مراجعي عيادة الجهاز الهضمي. المواد والأساليب: كانت الدراسة دراسة مقطعية للبالغين في مستشفى الحسين التعليمي في مدينة الناصرية ، أجريت في أول مارس 2018 وانتهت في نهاية سبتمبر عام 2018. كانت جمع البيانات من خلال استخدام استبانة معدة لهذا الغرض وذلك بإجراء مقابلة مع المراجعين الموافقين على المشاركة بالدراسة حسب معايير DSM-IV الذي أجريت على 154 مشارك. كان معدل الرفض صفر ولأغراض التحليل الإحصائيتم استخدام SPSS الإصدار ٢٢. النتيجة: أظهرت الدراسة أن % ٤٣,٥ من الأشخاص الذين يعانون من أعراض الجهاز الهضمي يعانون من الاكتئاب. الاكتئاب وجد في % ٤٠,٧ من الإناث و % ٤٧,١ من الذكور. % ٥٠,٠ من المرضى المصابون بالاكتئاب كانوا من الفئتين العمريتين 20-44 سنة و 65 ≤ سنة. معظم المرضى المصابين بالاكتئاب يعانون من الإمساك ( % ١,٣ وتغير في الشهية ) ، ( % ١,٣ وتغير في الوزن ) ، ( % ٥٠,٧ حيث كان التغيير في الشهية يرتبط ارتباطا كبيرا مع الاكتئاب ، كانت قيمة  $p = 0.001$  معظم الأشخاص المكتئبين يعانون من المشاكل في الجهاز الهضمي لمدة شهرا واحدا و كانت لديهم أكثر من 7 أعراض. توصية: رفع الوعي العام حول الاكتئاب وعلاقة ذلك مع أعراض الجهاز الهضمي. الكلمات المفتاحية: الاكتئاب ، أعراض الجهاز الهضمي ، الانتشار ، الناصرية ، ٢٠١٨