

Impact of Irritable Bowel Syndrome on Quality of Life among Female Patients Attending Internal Medicine Outpatient Clinics in Zagazig University Hospital

Sohair A Hagag^{*1}, Shereen Eassa¹ and Mahmoud Abdou Aashour²

Community Medicine and Public Health¹ & Internal medicine² Departments, Faculty of Medicine, Zagazig University, Egypt

[*dr.sohierhagag@yahoo.com](mailto:dr.sohierhagag@yahoo.com)

Abstract: Introduction: little is known about the health-related quality of life (HRQOL) of patients with irritable bowel syndrome (IBS). Although it is one of the most common gastrointestinal disorders. The illness is characterized by chronic or recurrent abdominal pain and altered bowel habits. These symptoms can adversely affect HRQOL of people who suffer from IBS. Objectives of this study: to assess QOL of females with irritable bowel syndrome and to find the relationship between severity, duration and types of IBS and QOL. Subjects and methods: a case-control study, 93 Female patients suffer from (IBS) attending internal medicine outpatient clinics of Zagazig University Hospital were included in this study, compared to control group (93 females). Data was collected using 1- structured questionnaire covering some socio-demographic data, 2- Rome II criteria of IBS diagnostic questionnaire, 3- a generic QOL (SF 36) questionnaire. Results: females with IBS had worse QOL of physical functioning, role limitation due to physical health, role limitation due to emotional problems, vitality, social functioning, pain, emotional wellbeing and general health perception compared to controls $p < 0.05$. Female patients suffered from severe IBS symptoms had a significantly poor QOL of domains (physical functioning, pain and emotional wellbeing) compared to IBS female patients reported moderate symptoms ($p < 0.05$). Diarrheal-type and mixed-type IBS female patients had worse QOL of the three domains (role limitation due to physical health, role limitation due to emotional problem and emotional wellbeing) than constipated-type of IBS patients $p < 0.05$. Also there was negative significant correlation between duration of IBS and QOL of IBS female patients in domains of physical functioning, role limitation due to emotional problems, social functioning, pain and vitality ($r = -0.4, -0.24, -0.33, -0.39, -0.34$) respectively $p < 0.05$. Conclusion: and recommendation: IBS-symptoms had a great effect on the QOL of female patients so early detection may improve the progress of health problem and decrease the burden of disease on health service. So there is a great need to include QOL as a tool during assessment and evaluation of IBS patient

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1. Introduction

Irritable bowel syndrome (IBS) is a common functional gastrointestinal disorder Agrawal and Whorwell (2006). IBS is widespread in all societies and socioeconomic groups Thompson *et al.* (2000).

The average prevalence of (IBS) was 15% -24% in general population (Hungin *et al.* 2003). It is estimated that only 25%- 60% of persons with (IBS) seek medical care (Talley *et al.* 1995). IBS is characterized by chronic or recurrent abdominal pain and altered bowel habit, the diagnosis is based mainly on the identification of symptoms according to Manning, Rome I, Rome II criteria, it affects females more than males for unexplained pathophysiological reasons. There is increasing awareness of clinicians and clinical researchers on the impact of (IBS) on quality of life (QOL) (Yacavone *et al.* 2001).

IBS patients experience emotional distress, feeling of helplessness depression and irritability. Their lifestyle was being restricted by their

gastro-intestinal symptoms and they organized their day around toilet accessibility. Also they modify their diet and food consumption (Park *et al.*, 2009). Although most IBS patients do not seek medical help, the disease account for huge costs to patients and health care system and worsens patients quality of life (Rhee, 2006). The considerable prevalence of (IBS) indicate that (IBS) has social impact on the country (Park *et al.*, 2009) and has an impact on (QOL) and resources in countries (Hahn *et al.*, 1999).

QOL assessment is becoming increasingly important in the evaluation of the impact of disease and the effect of therapy as there is often a tendency for a chronic clinical course (Li *et al.*, 2003)

Quality of life in patients with (IBS) is surprisingly poor, particularly in those seeking medical care, when compared with condition carry a high mortality, such as end stage renal disease, asthma and diabetes mellitus (Frank *et al.*, 2002). The impact of (IBS) on QOL of patients has often

been underestimated by physicians and researchers, because patients with (IBS) disorder do not face direct threat to their life and are not disabled in obvious ways. Also, friends and family members of individuals with (IBS) may underestimate the impact of IBS on the patients. Now researchers have shown that these disorder have impact on patients (QOL), which is important for anyone interact with IBS patients (Palsson *et al.*, 2002).

The aim of current work to explore the problem of IBS through the following objectives:

To assess QOL of females with irritable bowel syndrome

To find the relationship between the severity, duration and types of IBS with QOL.

2. Subjects and methods

Study design

This study is a case – control study conducted in Zagazig University Hospital among females attending internal medicine outpatient clinic in the period from September 2010 to December 2010

Sample

Estimated sample size was 93 patient and 93 control by EPI info version 6 with confidence interval 95%, power of test 80%, expected favorable QOL in non- ill 80%, expected favorable QOL in ill 60% "estimated by pilot study"

The studied group was selected by simple random sample

Target population

-Females who were diagnosed by internal medicine physician according to Rome11 criteria of IBS (Harris, 2000).

-The control group females who were accompanying others patients and were comparable with cases in age, level of education and residence, apparently healthy also they must be free of chronic diseases.

Tools of this study

Females included in study were interviewed and the data was collected using the following questionnaires:

I-structured questionnaire: covering socio-demographic variables e.g age, level of education and residence.

II - questionnaire for diagnosis of (IBS): included the following four questions of Rome11 criteria, which widely used and are considered valid and have good predictive value for (IBS) diagnoses Drossman *et al.* (2000) and (Harris, 2000) .

IBS was diagnosed if participants answered yes on the following question

-in the last three months did you often have discomfort or pain in your abdomen

Plus answer yes on two of following questions:

1-does your discomfort or pain get better or stop after you have bowel movement.

2-during discomfort or pain, do you have a change in your usual number of bowel movements "either more or fewer".

3-during discomfort or pain, do you have either softer or harder stools than usual.

III-questionnaire to assess severity of (IBS): the severity of IBS could vary from mild and moderate to severe by self- reported symptom severity question (Park *et al.*, 2009).

Severity of IBS:

Discomfort which referred to pain and associated (IBS) symptoms was classified into:

- Mild degree if participants answer the question with "I can ignore it if I do not think about it"

- Moderate degree if the answer "I cannot ignore but it does not affect my life style

- Severe degree "discomfort usually affects my life style"

According the bowel pattern IBS patients were classified into three types (Thompson *et al.*, 2000)

- Constipation – predominant (IBS) type

- Diarrheal-predominant (IBS) type,

- Mixed (IBS) type

IV- A Generic health related quality of life questionnaire short form -36 (SF- 36) was used in its Arabic translated form; (SF-36) is well established and has been used in epidemiological studies (Abdul-Moshin *et al.*, 1998), Sabbah *et al.*, 2003. The SF-36 includes thirty six items, constructed eight multi-item scales that assess the extent to which an individual health limits their physical, emotional and social function: physical function(10 items),role limitations due to physical health (4 items) , role limitation due to emotional health problems (3 items) , pain (2 items), general health perception (5 items), energy/fatigue (vitality) (4 items) ,social function (2 items), Emotional wellbeing (5 items) and also include a single item that provides an indication of perceived change in health. All questions asked concerned the previous four weeks

Scoring short form 36- item health survey is in two steps

First, each item is scored on a 0 to 100 range, A high score 100 represent a favorable health state and a low score 0 represent a bad health state

Second, the average of the total items of each scale was calculated

A high score defines a more favorable health state and a low score define a bad health state (Ware and Sherbourne 1992, Hagerty *et al.*, (2001).

Pilot study:

A pilot study was conducted during August 2010 to test questionnaire and to estimate sample size. The pilot sample was 20 females which were not included in the study sample

Ethical consideration:

An oral consent was obtained from all participants of present study after explaining its aim to them.

Statistical analysis:

Data were collected, coded, entered and were analyzed using (Statistical package for social science). SPSS program version 15. Independent variables were analyzed descriptively by frequency distribution and mean \pm standard deviation. Chi square and Chi square of trend were used to test the significance of qualitative variables as appropriate. While independent samples t-test was used to compare two means. ANOVA test was used to compare more than two means and post hoc test was used to detect significant between each two groups. Pearson correlation test was used to define association between two continuous quantitative variables. p value ≤ 0.05 was considered statistically significant.

3. Results

Some socio demographic data of females participated in this study were shown in table (1). The 186 participants, (93) of them suffer from (IBS) according to Rome11 criteria. Mean age of (IBS) female patients were 28.78 ± 8.8 years. Females enrolled in control group their mean age were 27.72 ± 8.9 years without significant difference with IBS cases ($p=0.366$). The level of education among IBS female patients were 12.9% illiterate, 35.5% primary educated, 17.2% secondary educated and 34.4% university educated compared to 7.5%, 35.5%, 29% and 28% respectively among control females with no significant difference between groups ($p=0.191$). About 26.9% of IBS females

living in urban area compared to (38.7%) of the control, the difference was statistically insignificant ($p = 0.08$).

Severity of Self-reported symptom were shown in figure 1 as 66.7% of IBS female patients had severe symptoms and 33.3% of them had moderate symptoms.

The percentage of IBS of diarrheal-predominant type was 62.4%, constipation-predominant type was 24.7% and only 12.9% had mixed-type (figure 2).

Figure (3) showed the duration of IBS disease, 34.4% of IBS female patients suffered from disease for less than two years, 32.2% patients suffered from the disease for two to four years and 33.4% of patients had the disease for more than four years.

Table (2) illustrated QOL for IBS female patients and control measured by SF-36 questionnaire, IBS female patients had a significant lower score in the eight Domains of QOL in compared to control females ($p < 0.05$).

As regard to the severity of symptoms, the IBS females suffered from severe symptoms had low QOL in physical function, pain and emotional wellbeing compared to those of moderate symptoms. QOL score of physical function (72.7 ± 12.6 versus 84.3 ± 9.1), of pain (54.5 ± 17.9 versus 74.65 ± 11.7) and of emotional wellbeing (56.6 ± 7.9 versus 63.07 ± 9.3), the result was statistically significant $p < 0.05$, While the others five QOL domains showed no significant difference ($p > 0.05$).

Table (4) showed QOL mean score between the different types of IBS, the diarrheal-type of IBS patients and mixed-type IBS had significant low QOL with respect to role limitation due to physical function, role limitation due to emotional problems and emotional wellbeing in comparison to constipated-type ($p < 0.00$). Social function score better among mixed type IBS patients than the other two types and the difference was statistically significant $p < 0.05$.

Table (5) illustrated negative significant correlation between duration of IBS and QOL of IBS female patients in domains of physical functioning, role limitation due to emotional problems, social functioning, pain and vitality r (-0.4, -0.24, -0.33, -0.39, -0.34) respectively $p < 0.05$.

Table1: Some Socio demographic characteristic of females with irritable bowel syndrome and control group.

Variables	Patient(93)		control(93)		Test of Sign	P	
age	Mean \pm SD		28.78 \pm 8.8		27.72 \pm 8.9	* 0.906	0.366
residence	Urban	No (%)	25 (26.9)	36 (38.7)			0.08
	Rural	No (%)	68 (73.1)	57 (61.3)	** 2.95		
Education	Illiterate	No (%)	12 (12.9%)	7 (7.5%)			0.191
	Primary	No (%)	33 (35.5%)	33 (35.5%)			
	Secondary	No (%)	16 (17.2%)	27 (29%)			
	university	No (%)	32 (34.4%)	26 (28%)	*** 4.75		

*t test **chi square test *** chi square of trend test

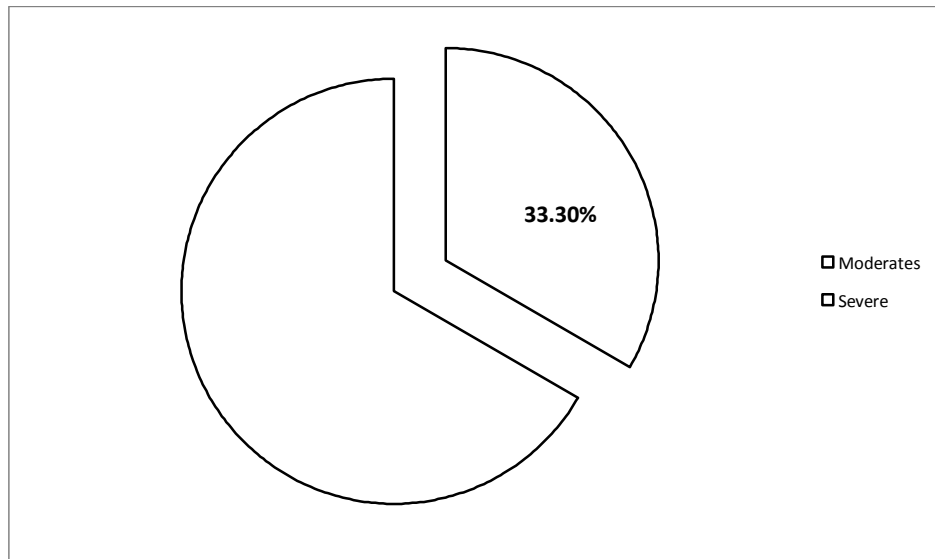


Figure 1: shows percent of severity of irritable bowel syndrome among female patients

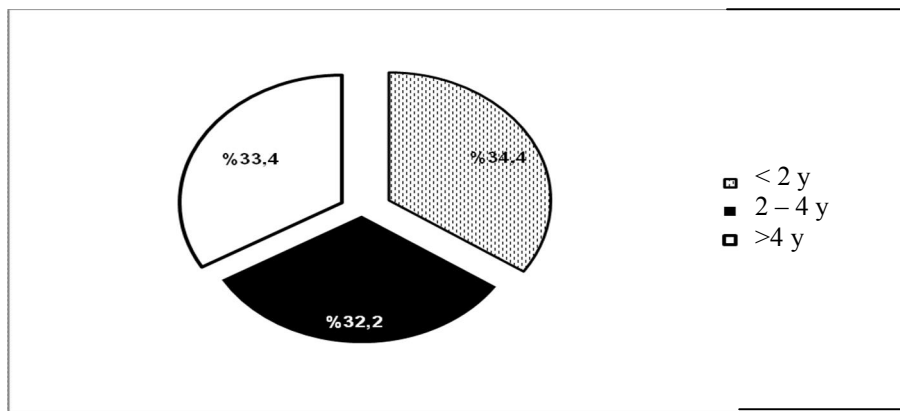


Figure2 : Duration of irritable bowel syndrome among female patients

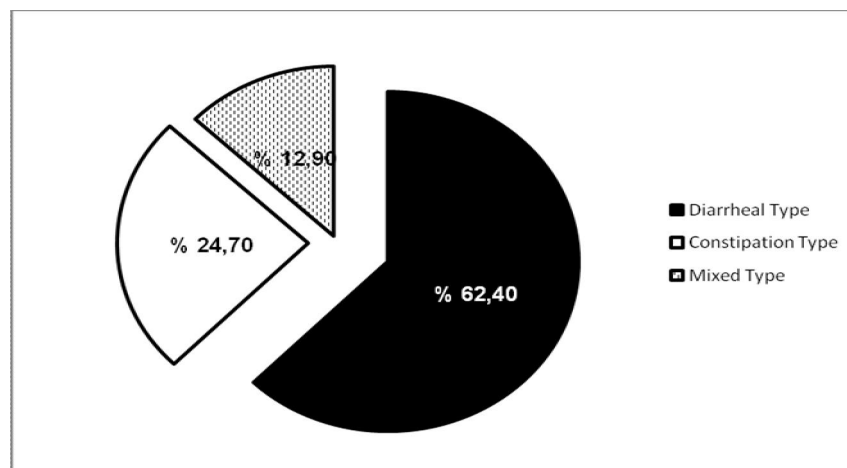


Figure3: illustrate types of irritable bowel syndrome among female patients

Table 2: illustrate quality OF life among irritable bowel syndrome female patients and control

Parameters	IBS patients(93) Mean ± SD	Control(93) Mean ± SD	t	p
Physical function	76.6 ±12.8	83.4± 18.0	2.981	0.003
Role limitation due to physical health	68 ± 17.1	74± 19.3	2.37	0.0190
Role Limitation due to emotional problems	60.5 ± 16.4	79.1 ± 19.9	6.9	.0000
Social function	63.4 ± 14.9	76.1 ± 21.9	4.6	.000
pain	65.9 ±22.7	82.96 ± 21.4	5.2	.000
Vitality	68.9 ± 17.4	84.1±14.7	6.4	000
Emotional wellbeing	58.8 ±8.9	69.2± 14.8	5.78	.000
General health perception	67 ± 15.35	72.8 ± 17.99	2.36	0.019

there is a statistical significant difference in QOL of eight domains between IBS female patients and controls $p < 0.05$

Table3: Quality of life of females suffering from irritable bowel syndrome as regard its severity

Parameter	Moderate(31) Mean ± SD	Severe(62) Mean ± SD	Test of significant	P value
Physical functioning,	84.3 ± 9.1	72.7± 12.6	4.542	0.0000
Role Limitation due to Physical health	71.22 ± 11.95	66.53 ± 19.1	1.245	0.216
Role limitation due to Emotional problems	61.8 ±15.16	59.9±16.9	0.516	0.607
Social functioning	65.57± 22.33	62.3±9.48	0.987	0.326
Pain	74.65± 11.73	54.52 ± 17.9	32.2	0.000
Vitality	72 ± 16.88	67 ± 17.7	1.195	0.235
Emotional wellbeing	63.07 ± 9.37	56.67±7.92	3.454	.001
General health perception	71.18 ± 12.52	64.92 ± 16.2	1.88	.063

This table demonstrates that QOL among females suffer from severe IBS symptoms is significantly lower than QOL of females with moderate IBS symptoms as regards physical functioning, pain and emotional wellbeing $p < 0.05$

Table 4: Quality of life of female patients complaining from irritable bowel syndrome (IBS) as regards to its type

parameters	Diarrheal type No (58) Mean ± SD	Constipation No (23) Mean ± SD	Mixed type No (12) Mean ± SD	F test	P
Physical functioning	76.97 ± 11.25	76.42 ± 15.87	75.29 ± 14.47	0.09	0.918
Role Limitation due to Physical health	62.71 ± 14.27	84 ± 14.31	63.54 ± 17.23	18.07	0.0000
Role limitation due to Emotion function	56 ± 13.49	74.6 ± 17.32	55.55 ± 12.96	14.4	0.0000
Social functioning	60.6 ± 13.84	63.72 ± 15.6	76.34 ± 13.24	6.09	0.003
Pain	63.16 ± 19.94	75.3 ± 20.63	61 ± 34.34	2.75	0.06
Vitality	67.77 ± 19.7	74.58 ± 8.52	63.88 ± 17.15	1.8	0.16
Emotional wellbeing	57 ± 8.35	64.45 ± 7.1	56.65 ± 10.62	6.96	0.001
General health perception	66.48 ± 11.15	70.5 ± 24.85	62.98 ± 6.75	1.04	0.356

Post hoc test shows that QOL was significantly affected among females complaining from diarrheal type and mixed type of IBS than constipated type of IBS as regards to role limitation due to physical health, role limitation due to emotional problems and emotional wellbeing ($p < 0.05$)

Constipated type and diarrheal types of IBS female patients affected socially more than mixed type IBS female patients ($p < 0.05$)

Table (5): correlation between quality of life dimensions and duration of IBS among IBS female patients

Parameter	r	P
Physical functioning	- 0.4	0.001
Role limitation due to Physical function	- 0.14	0.17
Role limitation due to emotional problems	- 0.24	0.018
Social functioning	- 0.33	0.001
Pain	- 0.39	0.000
Vitality	- 0.34	0.001
Emotional wellbeing	- 0.18	0.078
General health perception	-0.19	0.06

There was negative significant association between duration of IBS complaint and QOL domains (physical functioning, role limitation due to emotional problems, social functioning, pain and vitality) $p < 0.05$

4. Discussion

Although IBS is not a life threatening condition but it has a serious impact on patients daily activities. In the present study, QOL of IBS female patients was significantly impaired in all dimensions compared with controls, this is consistent with the results of many studies such as those of United- states and United kingdom by Hahn *et al.* (1999), Gralnek *et al.* (2000), in Crete Faresjo *et al.* (2006) in China survey by Huang *et al.* (2007), and also in Korea by Park *et al.* 2009 found that IBS cases had worse quality of life.

Whitehead *et al.* (1996) reported that QOL scales score of general health perception, social function, physical functioning, bodily pain were more significantly lower in IBS patients who asked medical help as the severity of IBS expected to be increased among this group.

Severity of IBS was associated with poor QOL, in the current study 66.7% of IBS females suffered from severe symptoms while 33.3% had moderate symptoms this finding is higher than that found by Coffin *et al.* (2004) who found that 8.3%, 41.3% and 50.4% of IBS patients had mild, moderate and severe symptoms respectively, the discrepancy due to difference in the level of tolerance and acceptance of abdominal pain in different countries.

Severe IBS female patients showed significant poorer QOL score of physical functioning, pain and emotional wellbeing than IBS females patients who reported moderate symptoms ($p < 0.05$), while QOL scale score of vitality, limitation due to physical health, role limitation due to emotional problems, social function, general health perception statistically insignificant $p > 0.05$. This agree with study carried by Coffin *et al.*, (2004) and study in Korea done by Park *et al.* (2009) who reported a negative impact of IBS on QOL.

In present study the percentages of diarrhea-predominant type of IBS, constipation predominant type and mixed type were 62.4%, 24.7% and 12.9% respectively compared to 32%, 41.3% and 26.7% in France at a study conducted by Coffin *et al.* (2004), the difference in IBS subtypes may be due

to the difference in climate and type of food consumption.

QOL among IBS female patients as regards IBS subtypes (constipation IBS, diarrheal IBS and mixed IBS) was tested and it was poor among diarrheal and mixed types as regard to QOL of three domains; role limitations due to physical health, role limitations due to emotional problems and emotional wellbeing in compared to constipation type of IBS patients $p < 0.05$. Social function was bad among diarrheal IBS and constipated IBS female patients compared to mixed IBS patients $p < 0.05$. this result differ from that of Korea study by Park *et al.* (2009) that showed no significant difference in QOL score among patients with the three subtypes of IBS. Also in other study IBS Patients with constipation –predominant, diarrhea- predominant and mixed bowel patterns had a similar degrees of QOL (El- Serag *et al.* 2002)). this difference can be explained by difference in culture and present of facility in public places.

The current study, illustrated that there was negative significant correlation between duration of IBS disease and five of QOL domains; physical functioning, role limitation due to emotional problems, social functioning, pain and vitality. This result differ with Coffin *et al.*, (2004) who found that no correlation between duration of IBS disease and QOL. This can be explained by the difference in case management, treatment and the effectiveness of health service in both countries.

Conclusion and Recommendations:

IBS- symptoms had a great effect on the eight domains of QOL of female patients, patients suffered from diarrheal type and mixed type of IBS had poorer QOL than constipated IBS type. Long duration of IBS was associated with worse QOL domains. So early detection may improve the progress of health problem and decrease the burden of disease on health service. So there is a great need to include QOL as a tool during assessment and evaluation of IBS patient. Further researches to find the best methods for IBS patients to alleviate their

suffer and improve QOL domains.

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Corresponding author

Sohair A Hagag

Community Medicine and Public Health, Department, Faculty of Medicine, Zagazig University, Egypt.

dr.sohierhagag@yahoo.com

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