

## Functional Constipation in Pregnancy; Need to Furnish Some More Emphasis

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### Abstract

**Objectives:** This study was conducted to determine the occurrence of functional constipation in obstetric population in our context and to explore the extent to which pregnant females were aware of the problem and their usual practices to deal with it.

**Methodology:** This was a cross sectional study conducted on 332 pregnant females, from June 2017 to June 2018 in gynaecology unit 3, Karachi Medical and Dental College (using a convenient sampling technique after taking ethical approval). All the pregnant females visiting antenatal out-patient department from age 17 - 46 years were included in the study. The validated Rome III criteria were used to diagnose functional constipation. Information regarding awareness of constipation and demographic data, with the measure used for relief of constipation identified. The data analysis was performed by SPSS version 20. Qualitative data was presented as frequency and percentage. Bar graph was also used for presentation of the qualitative data.

**Results:** Out of the total of 332 pregnant females, functional constipation was observed in 207 (62.3%) females according to the Rome III Criteria. Evaluating the awareness of constipation and its associated problems during pregnancy our study showed that 61.1% pregnant females responded positively when reporting to doctor about constipation. While encountering functional constipation the most commonly used remedial measure was Ispaghul (Husk) observed in 74 (35.7%) pregnant females. The observations of our study revealed that 89 (43.0%) pregnant women having functional constipation were well aware about constipation and its consequences in pregnancy.

**Conclusion:** It is concluded that functional constipation occurs commonly in pregnancy in our context. Moreover, these females were mostly well aware of constipation and its worst outcomes during pregnancy.

**Key words:** Constipation, association, awareness, pregnancy.

**IRB:** Approved by Ethical and Scientific Review Committee, Karachi Medical and Dental College.

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### Introduction

Constipation is a common health issue that has affected mankind globally<sup>1,2</sup>. The formulation of the proper explanation of constipation is a matter of debate until now<sup>3</sup> and a wide range of presentations are included in this domain such as difficulty in defecation, consistency of stool, sensation of in-

complete evacuation/blockage in anorectal area, frequency of stool passage per week being less than 3 or utilizing extra effort other than intra-abdominal pressure to get stool passed<sup>4,5</sup>. However, it is classified into two groups: one labelled as primary/functional/idiopathic constipation which is not related to any other pathological phenomenon<sup>5,6</sup> whereas the other is labelled as secondary constipation which is due to a drug side effect or a manifestation of an ongoing disease specifically hypothyroidism, diabetes, scleroderma, irritable bowel syndrome, stroke, Parkinson's disease<sup>7-9</sup>. Though we consider constipation as a symptom, but functional and secondary constipation are recognized as proper diseases<sup>5</sup>

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and functional constipation serves a considerable share to the overall complaints of constipation across the world<sup>10</sup>. The pathogenesis behind functional constipation is assumed to have multiple contributing factors, including less liquid and fibre intake, genetic makeup and psychological disturbances<sup>11,12</sup>. Despite the fact that functional constipation does not cause mortality, it certainly serves as a financial burden and effects lifestyle of the individual to a great extent<sup>13</sup>.

It is established and observed that a lot of variations take place during pregnancy in order to accommodate and nourish another life inside mother's body, these changes often lead to gastrointestinal disturbances, out of which constipation is a common issue<sup>14</sup>. Most of these modifications are attributed to hormonal changes and a major role is played by increased progesterone level and its effect on smooth muscles, causing slow movement of gastrointestinal intestinal tract; although other hormones such as aldosterone and motilin also participate<sup>5,14,16</sup>. Besides hormones other factors also play minor roles, including mechanical changes, as uterus pushes abdominal contents and lead to decreased motility, and lifestyle alterations in particular lack of exercise and extended utilization of fat and protein in diet during this period<sup>14</sup>. Similarly, a study has found that constipation in early pregnancy is mainly due to hormonal causes while in late pregnancy constipation is more likely due to mechanical reasons<sup>14</sup>. It has been shown in a previous study that a considerable share for this complaint is contributed by primary constipation<sup>17</sup>, which was either not taken seriously or not identified before by the patient, as pregnancy aggravates the condition<sup>5,18</sup>. Whatever is the reason behind chronic constipation, if left unattended can lead to serious harm to pudendal nerve causing weak pelvic floor muscles and support, this in extreme cases can result in uterovaginal prolapse<sup>19</sup>. Likewise, constipation may alter the approach to delivery as a previous study has determined that females with functional constipation get their baby delivered via caesarean section more than those who do not experience functional constipation; and at very least

the patient is left with discomfort and compromised daily life<sup>2,19</sup>. Therefore, it must be recognized using a thorough clinical evaluation during antenatal visits, and this assessment must include previous obstetric history and iron intake during pregnancy, as a study reports the risk of constipation to be increased if the pregnant patient has a history of constipation during previous pregnancy or has increased iron intake during current pregnancy<sup>14</sup>. Furthermore, it is highly recommended to identify whether it's a functional constipation with no associated disease or it is associated with previous history of a disease as the management may vary; nevertheless, all the acknowledged cases should be addressed at the earliest<sup>5,9,11</sup>. The recent clinical practice to deal with constipation during pregnancy is to advise the consumption of roughage and liquids in diet with prescription of any form of allopathic medicine being reserved for the non-responsive cases<sup>14,11</sup>. When all the standard remedies fail to resolve the condition then referring to the specialist for further evaluation is recommended<sup>5</sup>.

The scarcity of epidemiological data regarding constipation in pregnancy specially in this region of world has led to an inefficient clinical approach towards this health problem by clinicians and poor outcomes of otherwise preventable issue. The rationale of this study is to determine the occurrence of functional constipation in our context during pregnancy.

### Patients and Methods

This cross sectional study was conducted from June 2017 to June 2018 in Gynaecology Unit-III, Abbasi Shaheed Hospital and Karachi Medical and Dental College using a convenient sampling technique after taking ethical approval. The sample size calculation has been done by using WHO (World Health Organization) recommended software open EPI. The reference study used for this sample size calculation was Jewell DJ, Young G. Interventions for treating constipation in pregnancy. Cochrane Da-

tabase Syst Rev 2001(2):CD001142.7 and for our study the sample size calculated was of 332.

All the pregnant females visiting antenatal outpatient department of Abbasi Shaheed Hospital from age 17-46 years in all three trimesters were included in the study and every pregnant woman who denied consent for the study; who was suffering from hypothyroidism, Crohn's disease, irritable bowel syndrome and abnormalities of anal region (fistula and haemorrhoids); who was taking Salbutamol, ritodrine and magnesium sulphate for the prevention of preterm labour; who currently have multiple gestation were excluded from this. Convenient sampling technique was applied for data collection.

The data collection was done from all pregnant ladies coming in antenatal outpatient department of Gynaecology unit 3 regarding functional constipation and were evaluated according to Rome III criteria in local language (Urdu & English), for which post graduates were assigned, who after getting consent, conducted the interviews. Moreover, the confidentiality of all the participants was ensured and forms were filled by researchers and post graduates under their supervision. The questionnaire was designed to get obstetric history, identify func-

tional constipation in current pregnancy and to get an idea about approach of pregnant ladies regarding constipation and its management.

Rome III criteria were used to identify functional constipation. A patient must encounter minimum of two symptoms from the stated list of five symptoms (hard consistency of stool, need excessive abdominal pressure to defecate, need other methods to facilitate the passage, feeling of dissatisfaction after defecation and sensation of obstacle in passage of stool) for the shortest period of 12 weeks in order to satisfy the criteria.

The data analysis was performed by SPSS version 20. Data was presented as frequency and percentage regarding number of patients having functional constipation according to Rome III criteria. Bar graph was also used for representation of the data. Chi-square test was used to assess the association. P-value of  $\leq 0.05$  was taken as significant.

### Results

This study explored the frequency of functional constipation in pregnancy and knowledge concerning the constipation among 332 pregnant females residing in Karachi. During our study the most common educational status of pregnant females was found to be matriculation with the frequency of 120 (36.1%). On the other hand, the least common level of education was graduation, observed in 41 (12.3%) females. Regarding occupation of the pregnant women enrolled to our study, most common was housewife with frequency of 288 (86.7%). Similarly, least common occupation was recorded to be related to the nursing profession. The type of wash-room used by the pregnant women in our study were Asian water closet and commode. The frequency of Asian water closet usage in pregnant females was found to be 282 (84.9%) while that of commode was 50 (15.1%) in our study Table 1.

When asked about any bowel complaints at the time of study, 95 (28.6%) pregnant ladies answered to have this problem. Moreover, constipation

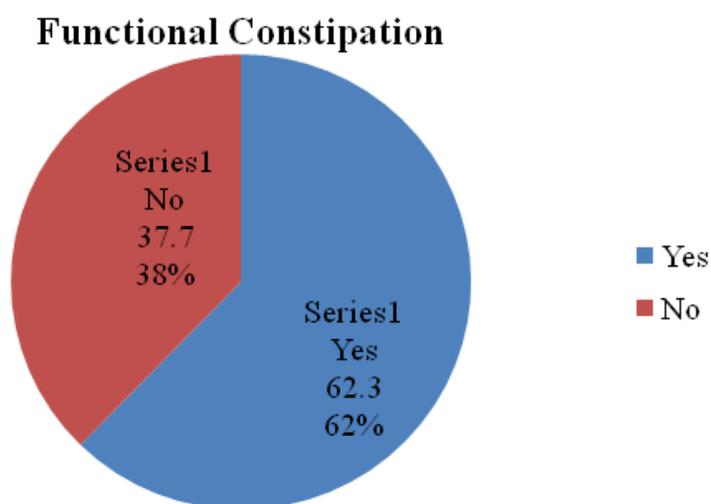


Fig 1. Frequency of functional constipation according to Rome III Criteria (n=332).

had been reported by 191 (57.5%) pregnant females. Evaluating the awareness of constipation and its associated problems during pregnancy our study showed that 203 (61.1%) pregnant females responded positively to reporting doctor about constipation, when inquired while 129 (38.9%) denied. In addition to that 214 (64.5%) pregnant females were found to be aware of health complications associated with experiencing constipation during pregnancy Table 2.

Our study concluded a significant association ( $p < 0.001$ ) between females experiencing constipation in pregnancy and it being functional constipation, in accordance with that 184 (88.9%) pregnant ladies who were having constipation were found to have functional constipation according to the Rome III criteria while 7 (5.6%) having constipation did not meet the criteria of functional constipation Table 3.

Those pregnant women who practice self-management for constipation were found to be 157 (75.8%) while having functional constipation and the association has statistical significance ( $p < 0.001$ ). Furthermore, our study described that the type of measure used to resolve constipation and having functional constipation during pregnancy have a statistically significant association (0.010) and while encountering functional constipation the most commonly used measure was Ispaghul (Husk) and 74 (35.7%) pregnant females were using this. The observations of our study revealed that 89 (43.0%) pregnant ladies having functional constipation were having good awareness about constipation and its consequences in pregnancy while 44 (21.3%) ladies were unaware of the fact, additionally there was found an association statistically significant ( $p = 0.005$ ) between experiencing functional constipation and having awareness in this context Table 3.

Out of the total of 332 pregnant females, functional constipation was observed in 207 (62.3%) females according to the Rome Criteria Fig 1.

## Discussion

Constipation is a very prevalent gastrointestinal disturbance encountered by the world population. Several factors serve their role in its pathogenesis. Constipation which cannot not be explained as having anatomical or physiological aetiology is described as functional constipation<sup>2</sup>. Many studies have proven that it is more commonly seen in female population with greater occurrence during pregnancy<sup>2,11,12</sup>. The reason behind increased prevalence is being linked to the alteration in physiology during this period, which leads to the predisposing factors for gastrointestinal disturbances and therefore, pregnant females frequently encounter problems such as constipation, irritable bowel syndrome, diarrhoea and haemorrhoids<sup>22-24</sup>. Our study intended to explore the prevalence of functional constipation among pregnant female population of Karachi. Besides this, the level of awareness about the condition was also assessed.

During our study the usual educational status of pregnant females was found to be matriculation in 36.1% of females. Aziz KF et al., evaluated educational status of 370 pregnant females and concluded that most of them are graduated from secondary school<sup>25</sup>.

Our study results showed that 86.7% women were housewives and not involved in any occupation. Similar results were drawn by Aziz KF et al., according to which 65.9% pregnant women were housewives<sup>25</sup> Frequency of pregnant females encountering constipation during pregnancy was found to be between 11% to 38% by Vazquez et al<sup>22</sup>. On the contrary, the occurrence of constipation during pregnancy was observed to be present in 57.5% pregnant females in our study. Moreover, the frequency of the females having functional constipation was 88.9% in our study. Another work on this subject done from July 2012 till January 2014 and 1698 cases were studied the results showed similar findings of increased occurrence of functional constipation during pregnancy than otherwise<sup>2</sup>.

It has been observed that among women who had constipation during pregnancy, the most common highest educational status was masters or higher<sup>2</sup>. While exploring the association of occupation on experiencing constipation during pregnancy, a study described more prevalence in females having professions which favour inactive lifestyles<sup>2</sup>. Our study suggested that housewife is the most common profession in pregnant women who have highest frequency of functional constipation. Shi W et al reported that upon inquiring about mode of delivery in pregnant females with functional constipation, 66.97% had their babies delivered via caesarean section in comparison to 27.29% of those whom did not have functional constipation<sup>2</sup>. In our study it was observed that 139 (67.1%) pregnant females with functional constipation delivered their babies via normal vaginal delivery while only 68 (32.9%) needed caesarean section. Gomes CF et al found that functional constipation was more prevalent during 1<sup>st</sup> trimester with frequency of 35% and 2<sup>nd</sup> trimester with frequency of 39%<sup>14</sup>. A different study conducted on 104 pregnant ladies discovered that 75% of them had functional bowel disorder during first trimester<sup>18</sup>. Furthermore, Stukan M et al., described that 1<sup>st</sup> trimester of pregnancy is more prone to encounter constipation<sup>23</sup>. Findings in our study concluded that functional constipation is more frequent among pregnant women in their 3<sup>rd</sup> trimester i.e. 47.8%.

According to a study conducted by Aziz KF et al 68.4% of pregnant women did not take any attempts to address their constipation during pregnancy<sup>25</sup>. Regarding management of constipation during pregnancy period, Turkina SV et al suggested that it must be ideally managed with dietary efforts and medicines should be avoided<sup>24</sup>. Verghese TS et al supported this idea in their study and dietary remedies were described as increased fibre and fluid intake<sup>5</sup>. Furthermore, these dietary modifications have been proved to protect pregnant females from experiencing functional constipation in a study by Shi W et al<sup>2</sup>. On the contrary Farghali MM et al found no appreciable significance of dietary efforts in improving constipated condition dur-

ing pregnancy<sup>11</sup>. Discovering association of management practices and presence of functional constipation, our study showed statistical significance (<0.001) with functional constipation being more common in pregnant women who are using measures to reduce the complaint as 75.8% of study participants fell in this category. Furthermore, there was an association, statistically significant (0.010) among different types of measures used for relieving constipation and experiencing functional constipation and most frequently used measure that was noted while having functional constipation was Ispaghul and 35.7% pregnant females were recorded to have functional constipation while using Ispaghul.

More research and studies are needed to determine the frequency in our obstetric population in various contexts as very scanty local data is available. More awareness of doctors, healthcare providers and midwives regarding diagnosis of functional constipation by using Rome III criteria is needed. The problem of constipation should be addressed early in antenatal period to improve quality of life of pregnant females and prevent complications.

### Conclusion

Functional constipation in a frequent complain effecting 62.3% of our pregnant women out of them 61% are aware and appreciate their bowel habits, 37.7% of women who are suffering from functional constipation had no idea about their constipation. This is what we need to emphasize on, these are the sufferers in silence.

### Conflict of Interests

Authors have no conflict of interests and received no grant/funding from any organization.

Table 1. Descriptive analysis of demographic and general variables (n=332).

Variables		N	%
Educational Status	Uneducated	65	19.6%
	Middle /Primary	64	19.3%
	Matriculate	120	36.1%
	Intermediate	42	12.7%

Occupation	Graduate	41	12.3%
	Housewife	288	86.7%
	Teacher	23	6.9%
	Nurse	2	0.6%
	Job	19	5.7%
Mode of Previous births	Normal(normal vaginal)	212	63.9%
	Operation(caesarean section)	120	36.1%
Trimester of Pregnancy	1st	54	16.3%
	2nd	106	31.9%
	3rd	172	51.8%
Housing	Temporary	165	49.7%
	Permanent	167	50.3%
Type of Washroom	Water closet (WC)	282	84.9%
	Commode	50	15.1%

**Table 2.** Descriptive analysis of patients according to Rome III criteria and their awareness score(n=332).

	Yes		No	
	N	%	N	%
Straining during at least 25% of defecation	177	53.3	155	46.7
Lumpy or hard stools in at least 25% of defecation	174	52.4	158	47.6
Sensation of incomplete evacuation for at least 25% of defecation	140	42.2	192	57.8
Sensation of ano-rectal obstruction/blockage for at least 25% of defecation	132	39.8	200	60.2
Manual manoeuvres to facilitate at least 25% of defecation (digital evacuation or supports of the pelvic floor)	53	16.0	279	84.0
Fewer than three defecations per week	121	36.4	211	63.6
Loose stools are rarely present without the use of laxatives	117	35.2	215	64.8
Irritable Bowel Syndrome insufficient criteria	88	26.5	244	73.5
Did you tell your doctor about constipation?	203	61.1	129	38.9
Did the attending doctor ask specifically about constipation?	229	69.0	10	3.1
Measures used for constipation?	200	60.2	132	39.8
Do you know that constipation can cause haemorrhoids?	188	56.6	144	43.4
Do you know that constipation can cause health issues?	214	64.5	118	35.5

**Table 3.** Association of functional constipation with level of awareness (n=332). and measures used for its cure.

Variables	Functional Constipation		p-value
	Yes n (%)	No n (%)	
Type of Measures used For Constipation	Ispaghool (Husk)	74 (35.7)	0.010
	Fruits & Vegetables	45 (21.7)	
	Homemade Remedy	39 (18.8)	
	Allopathic	49 (23.7)	
Awareness Score	Good Awareness	89 (43.0)	0.005
	Awareness	38 (18.4)	
	Slight Awareness	36 (17.4)	
	No Awareness	44 (21.3)	

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