

Prevalence of gastrointestinal symptoms in Brunei Darussalam

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Abstract

Gastrointestinal (GI) complaints have been shown to be particularly common among female and those with comorbid conditions. However these studies have mainly come from the West. The present study assesses the prevalence of GI symptoms in the Bruneian setting. Relatives ($n = 607$) visiting the wards of a referral hospital were interviewed regarding GI symptoms experienced in the past 12 months. Psychosomatic symptoms of depression were also enquired (anxiety, backache, depression, headache and insomnia). Overall, upper GI symptoms were reported by 33.4%; nausea (9.6%), vomiting (1.3%), reduced appetite (2.1%), dysphagia (0.5%), odynophagia (0.8%), early satiety (10.2%), heartburn (9.8%) and dyspepsia (18.8%), and lower GI symptoms in 20.1%; abdominal bloating (10.2%), abdominal pain (11.5%), irregular bowel habit (2.6%) and bleeding per rectum (5.6%). Female experienced significantly more dyspepsia, early satiety, abdominal pain, and psychosomatic symptoms of depressions (anxiety, headache and insomnia) (all p values <0.05). Presence of any co-morbidity was also significantly associated with the presence of any upper (nausea, early satiety and dyspepsia) and lower GI (abdominal pain and bloating) symptoms, and psychosomatic symptoms of depression (all p values <0.05). Only a small proportion has undergone any endoscopic evaluations. In conclusions, GI symptoms are more common amongst female and those with any co morbid conditions. They also had significantly more psychosomatic symptoms of depression, suggesting functional elements to these complaints.

Keywords: abdominal pain, dyspepsia, heartburn, prevalence in Brunei

Introduction

Gastrointestinal (GI) complaints are one of the most common indications for consultations. GI complaints account for up to 10% of general practice work load in the United Kingdom [1]. Most are self limiting without requiring any investigations. The prevalence of GI symptoms has been reported to be higher in females and patients with numerous chronic comorbid conditions [2-7]. On investigations with endoscopies and radiological imaging, there are often the absence of any significant pathologies and these are considered as functional GI disorders [8, 9]. Such a conclusion is also supported by the fact that female have more psychosomatic complaints. Patients with chronic co

morbid conditions have been shown to have higher prevalence of GI complaints [10-12].

Currently, there is no data available in the Bruneian setting. Similar to what have been reported, we hypothesized that female gender and the presence of comorbid conditions may also be important factors associated with GI complaints in our local population. This cross sectional questionnaire study was conducted to assess the: i) prevalence of both upper and lower GI symptoms, ii) to assess if gender and the presence of any underlying comorbid conditions are associated with higher prevalence of GI symptoms.

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Methods

Relatives visiting the five medical wards (Wards 4, 19, 20, 21 and 22) in the main referral hospital (RIPAS Hospital) were interviewed regarding GI symptoms experienced within the previous 12 months. Subjects were randomly approached on most working hours over a twelve month period. Explanations of the purpose of the survey were

given and verbal consent was obtained prior to the face to face interviews. Data collected included demographic data, background medical conditions, medications use, self medication, GI symptoms (nausea, vomiting, appetite, early satiety, heartburn, dyspepsia, abdominal bloating, abdominal pain, bowel habit and bleeding per rectum) and previous experience with endoscopy. Psychosomatic symptoms of depressions (anxiety, backache, depression, headache and insomnia) were also enquired.

The interviews were conducted by the author in several languages (Malay, English and Chinese) depending on the background of the persons being interviewed. Dyspepsia is described as an abdominal discomfort centered in the epigastrium. No distinctions were made to differentiate the type of dyspepsia (ulcer like, dysmotility like or heartburn like). Heartburn is taken as a retro-sternal burning feeling that radiates upward associated with sour taste in the throat/mouth and regurgitation. Both heartburn and dyspepsia can be described by few terminologies. Similarly, there are various terminologies describing anxiety and depression. Backache, headache and insomnia have well defined terminologies. As various terminologies exist for these various symptoms or complaints, only the commonly used terminologies were used in the questionnaire.

Data were coded and entered into the SPSS (Version 10.0, Chicago, IL USA) program for analysis. The Student-*t* test and chi-square test were used where appropriate. Comparisons were made between the gender and those with and without any comorbid conditions. Association of GI symptoms and presence of any psychosomatic symptoms of depression were tested. Continuous variables were presented as mean and standard deviation (SD). The test was considered statistically significant when *p* was less than 0.05.

RESULTS

There were a total of 607 subjects who participated in this questionnaire study and the subjects demographic and clinical profiles are shown in Table 1. Overall, there were slightly more female and more Malay subjects who participated in this study. The average age of subjects was 40.5 years.

Table 1. Demographic and clinical profiles of subjects (n = 607)

Gender	
<i>Male</i>	244 (40.2)
<i>Female</i>	363 (59.8)
Race	
<i>Malays</i>	516 (85.0)
<i>Chinese</i>	43 (7.1)
<i>Indigenous</i>	7 (1.2)
<i>Others</i>	41 (6.8)
Co-morbid conditions	221 (36.4)
<i>Cardiovascular disorders</i>	20 (3.5)
<i>Diabetes mellitus</i>	63 (11.1)
<i>Hypertension</i>	112 (19.7)
<i>Hyperlipidemia</i>	49 (8.6)
<i>Neurological disorders</i>	23 (4.0)
<i>Respiratory disorders</i>	23 (4.0)
<i>Others</i>	45 (7.9)
Smoker	96 (15.8)
Use of prescribed medications	190 (31.3)
Self medicating *	147 (24.2)

Figures presented as absolute number and percentage (parentheses)

* Use of non-prescribed medications including over the counter medications and complementary and alternative medications

The prevalence of upper and lower GI symptoms experienced over the previous 12 months are shown in Table II. Overall 43.5% ($n = 264$) had reported experiencing any GI symptoms with 33.4% ($n = 203$) experiencing any upper GI symptoms and 20.1% ($n = 120$) experiencing any lower GI symptoms. The mean number of upper GI symptoms and lower GI experienced were 1.6 (0.9) and 1.2 (0.5) symptoms respectively.

Table 2. Prevalence of gastrointestinal (GI) symptoms experienced within the last 12 months

<i>Symptoms</i>	<i>n (%)</i>
Upper GI symptoms	203 (33.4)
<i>Nausea</i>	58 (9.6)
<i>Vomiting</i>	8 (1.3)
<i>Dysphagia</i>	3 (0.5)
<i>Odynophagia</i>	5 (0.8)
<i>Reduced appetite</i>	13 (2.1)
<i>Heartburn</i>	60 (9.8)
<i>Early satiety</i>	62 (10.2)
<i>Dyspepsia</i>	114 (18.8)
Lower GI symptoms	122 (20.1)
<i>Non epigastrium abdominal pain</i>	70 (11.5)
<i>Bloating</i>	62 (10.2)
<i>Irregular bowel habit</i>	16 (2.6)
<i>Bleeding per rectum</i>	34 (5.6)

Overall, compared to male subjects, female reported significantly higher prevalence of overall upper GI symptoms (38.3% vs. 26.2%, $p = 0.002$), especially early satiety and dyspepsia. There was no significant difference in the overall lower GI symptoms (22% vs. 17.2%, $p = 0.146$) but there was a significantly higher prevalence of non-dyspepsia abdominal pain. This is shown in Figure 1.

Female also reported significantly more psychosomatic symptoms of depression, in particularly anxiety (8.0% vs. 3.3%, $p = 0.017$) and headache (43.8% vs. 24.6%, $p < 0.001$).

The presence of any comorbid conditions was significantly associated with the presence of any upper GI symptoms (41.6% vs. 28.8%, $p = 0.001$) especially nausea, dyspepsia and early satiety (Figure 2). They also had significantly more of any lower GI symptoms (25.8% vs. 16.8%, $p = 0.008$) especially non-epigastric abdominal pain and bloating. Subjects with comorbid conditions also experienced more psychosomatic symptoms of depressions (anxiety [10.9% vs. 3.4%, $p < 0.001$], backache [27.1% vs. 13%, $p < 0.001$], depression [2.7% vs. 0.5%, $p = 0.022$], headache [44.3% vs. 31.3%, $p = 0.001$] and insomnia [21.7% vs. 9.1%, $p < 0.001$].

In total, 6.3% ($n = 38$) and 1.8% ($n = 11$) of subjects had previously undergone upper GI and lower GI endoscopy respectively for evaluation of their GI complains. None had any significant findings based on what patients could remember.

Discussion

This study showed that GI symptoms are common in our population with over 40% of subjects ever experiencing some GI complaints within the previous 12 months, with a third having had upper GI complaints and one fifth having lower GI symptoms. The most common upper GI symptom in our study was dyspepsia followed by early satiety, nausea and heartburn. These are also comparable to what have been reported from other countries [2-7, 13]. In an earlier review of ten studies from the West, the prevalence of upper abdominal pain ranged from 8 to 54% and heartburn ranged from 10 to 48% [14]. A study in Hong Kong showed that the prevalence of uninvestigated dyspepsia was 18.4%.

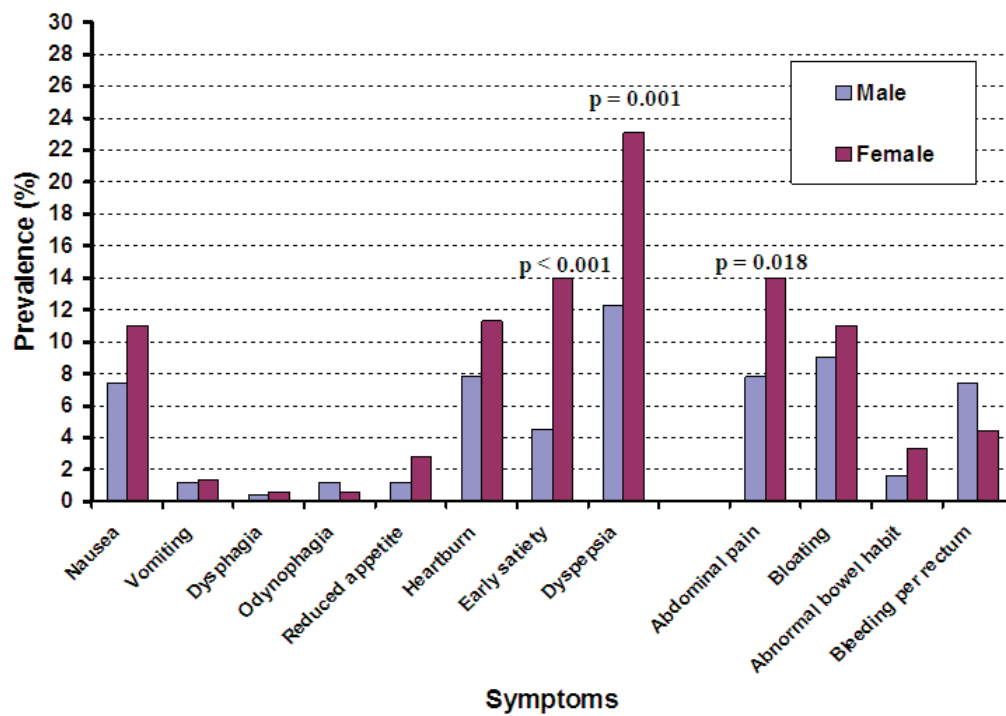


Figure 1. Prevalence of GI symptoms between male and female

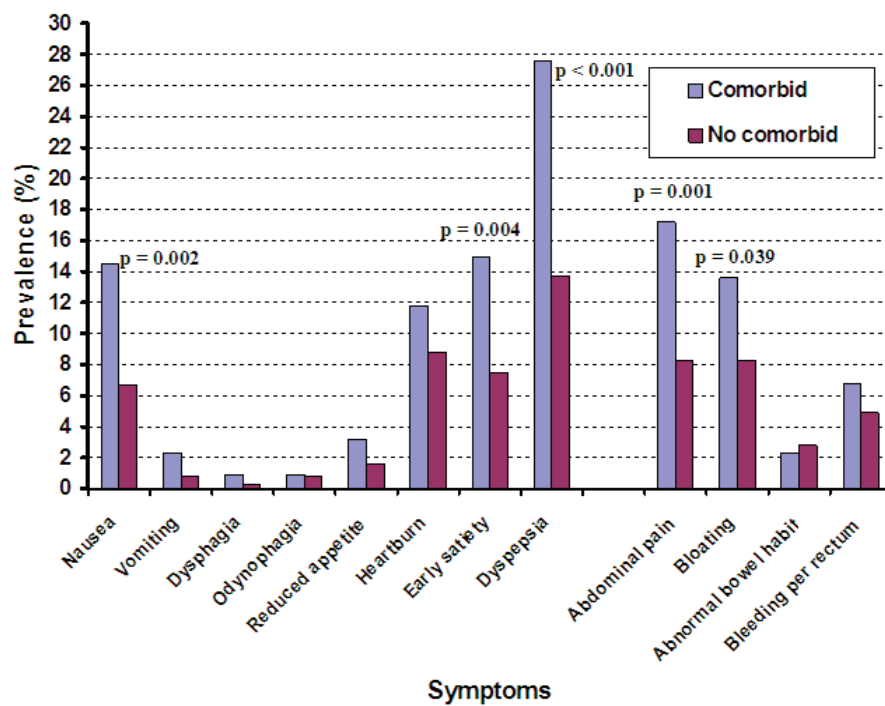


Figure 2. Prevalence of GI symptoms between those with and without co morbid conditions.

[15] Similarly the prevalence of heartburn or GORD is comparable to what have been reported both in the East and West.

The prevalence of lower GI symptoms is also comparable. Abdominal bloating and non-epigastric abdominal pain were equally common. Importantly, 5.6% had experienced bleeding per rectum and only 1.8% had undergone lower GI evaluations. This suggests that most of these complaints were probably self-limiting not requiring any consultations.

Female had higher prevalence of both upper and lower GI symptoms compared to male in our local setting. This again is comparable to what have been reported [8, 9]. Our female subjects generally experienced more GI complaints but this was only significant for early satiety, dyspepsia and abdominal bloating. More male experienced bleeding per rectum. Consistent to what have been shown, our female subjects also had significantly more psychosomatic symptoms of depression. The higher prevalence suggests that the GI complaints were most likely to be functional in origin. This is further supported by the fact that only a small proportion of subjects ever had endoscopies for the GI complaints.

Presence of any comorbid condition was significantly associated with both upper and lower GI symptoms. Numerous studies have shown increased prevalence of GI symptoms in patients with chronic non-psychiatric disorders. Not unexpectedly, presence of any comorbid condition was also significantly associated with psychosomatic symptoms of depression. Such findings are not unexpected as chronic disorders have been shown to be associated with significantly more functional complaints, including functional GI disorders [10-12,16]. However, other studies have not found such association. One study failed to show any difference in GI symptoms between type I diabetes mellitus patients compared to control [17]. These differences may be due to difference in the methodologies, symptoms definitions and also duration of symptoms enquiry. However, certain co morbid conditions have underlying pathogenesis that predispose to GI symptoms. Conditions such as chronic renal failure and diabetes have been shown to be associated with motility disorders and bacterial overgrowth that can results numerous numbers of GI symptoms [18, 19].

Despite the high prevalence of GI symptoms reported, only a minority of the subject interviewed actually had any endoscopic investigations. Although no details of the endoscopic findings were available, none of the subjects who had endoscopic evaluations had any significant findings such as neoplasms or peptic ulcer diseases. This suggest that majority of the complaints were mild and perhaps self-limiting. This is also reflected by the fact that 24.2% of our subjects had actually practiced self-medication for various complaints or ailments. The strong association with psychosomatic symptoms of depression also suggests functional elements of these GI complaints.

In clinical practice, it important to know the prevalence and the changing trends of medical disorders so that health care provisions can be improved to manage these disorders appropriately. At present, data on the prevalence of GI symptoms is lacking in our local setting and this study will provide useful information for clinicians managing these disorders. However, the findings of this study were based on sampling of subjects visiting a tertiary referral centre and as such the results may not be generalisable to the general population. Despite this, the differences are likely to be small as the ethnic break down of the samples is comparable to the population break down. However further studies are required.

In conclusion, GI complaints were more common amongst female and in those with comorbid conditions in our local setting. They also had significantly more psychosomatic symptoms of depression suggesting functional elements. Despite, the higher prevalence of any GI complaints, only a small fraction had undergone any endoscopic evaluation indicating that these symptoms were generally mild and self-limiting.

References

1. Jones R 2008. Primary care research and clinical practice: gastroenterology. *Postgrad Med J*. 84: 454-8.
2. Holtman G, Goebell H, Talley NJ 1994. Dyspepsia in consultants and non-consulters: prevalence, health seeking behaviour and risk factors. *Eur J Gastroenterol Hepatol* 5: 917-24.

3. El-Serag HB, Talley NJ 2004. Systematic review: the prevalence and clinical course of functional dyspepsia. *Ailment Pharmacol Ther* 19:643-54.
4. Van Kerkhoven LA, Eikendal T, Laheij RJ, van Oijen MG, Jansen JB 2008. Gastrointestinal symptoms are still common in a general Western population. *Neth J Med*. 66: 18-22.
5. Diaz-Rubio M, Moreno-Elola-Olaso C, Rey E, Locke GR 3rd, Rodriguez-Artalejo F 2004. Symptoms of gastro-oesophageal reflux: prevalence, severity, duration and associated factors in a Spanish population. *Aliment Pharmacol Ther* 19: 95-105.
6. Locke GR 3rd, Talley NJ, Fett SL, Zinsmeister AR, Melton LJ 3rd 1997. Prevalence and clinical spectrum of gastroesophageal reflux: a population-based study in Olmsted County, Minnesota. *Gastroenterology* 112:1448-56.
7. Lim SL, Goh WT, Lee JM, Ng TP, Ho KY 2005. Community Medicine GI Study Group - Changing prevalence of gastroesophageal reflux with changing time: longitudinal study in an Asian population. *J Gastroenterol Hepatol* 20: 995-1001.
8. Welén K, Faresjö A, Faresjö T 2008. Functional dyspepsia affects women more than men in daily life: a case-control study in primary care. *Gend Med* 5: 62-73.
9. Flier SN, Rose S 2006. Is functional dyspepsia of particular concern in women? A review of gender differences in epidemiology, pathophysiologic mechanisms, clinical presentation, and management. *Am J Gastroenterol* 101: S644-53.
10. Altay M, Turgut F, Akay H, Kanbay M, Babali A, Akcay A, et al. 2008. Dyspepsia in Turkish patients on continuous ambulatory peritoneal dialysis. *Int Urol Nephrol* 40: 211-7.
11. Delgado-Aros S, Locke GR 3rd, Camilleri M, Talley NJ, Fett S, Zinsmeister AR, et al. 2004. Obesity is associated with increased risk of gastrointestinal symptoms: a population-based study. *Am J Gastroenterol* 99: 1801-6.
12. Niklasson A, Strid H, Simren M, Engstrom CP, Bjornsson E 2008. Prevalence of gastrointestinal symptoms in patients with chronic obstructive pulmonary disease. *Eur J Gastroenterol Hepatol* 20: 335-41.
13. Kang JY, Ho KY 1998 Different prevalences of reflux oesophagitis and hiatus hernia among dyspeptic patients in England and Singapore. *Eur J Gastroenterol Hepatol* 11: 845-50.
14. Heading RC 1992 Prevalence of upper gastrointestinal symptoms in the general population: a systematic review. *Scand J Gastroenterol Suppl* 231: 3-8.
15. Hu WH, Wong WM, Lam CL, Lam KF, Hui WM, et al. 2002. Anxiety but not depression determines health care seeking behaviours in Chinese patients with dyspepsia and irritable bowel syndrome: a population based study. *Aliment Pharmacol Ther* 16: 2081-8.
16. Stanghellini V 1999 Relationship between upper gastrointestinal symptoms and lifestyle, psychosocial factors and comorbidity in the general population: results from the Domestic/International Gastroenterology Surveillance Study (DIGEST). *Scand J Gastroenterol Suppl* 231: 29-37.
17. Maleki D, Locke GR 3rd, Camilleri M, Zinsmeister AR, Yawn BP, Leibson C, et al. 2000. Gastrointestinal tract symptoms among persons with diabetes mellitus in the community. *Arch Intern Med* 160: 2808-16.
18. Strid H, Simren M, Stotzer PO, Ringstrom G, Abrahamsson H, Bjornsson ES 2003. Patients with chronic renal failure have abnormal small intestinal motility and a high prevalence of small intestinal bacterial overgrowth. *Digestion* 67: 129-37.
19. Hirako M, Kamiya T, Misu N, Kobayashi Y, Adachi H, Shikano M, Matsuhisa E, et al. 2005. Impaired gastric motility and its relationship to gastrointestinal symptoms in patients with chronic renal failure. *J Gastroenterol* 40: 1116-22.