



**COMORBIDITY OF
IRRITABLE BOWEL
SYNDROME, PANIC
DISORDER, AND
AGORAPHOBIA IN THE
GENERAL POPULATION
IN JAPAN**

HIROAKI KUMANO, M.D.^{1,2)}

Hisanobu Kaiya M.D.^{1,2)}

Gaku Yamanaka M.D.^{1,2,3)}

Tomifusa Kuboki M.D.¹⁾

**¹ Department of Psychosomatic
Medicine, Graduate School of Medicine,
The University of Tokyo; ² Warakukai
Incorporated Medical Institution;
³ Tokyo Women's University Daini
Hospital; in Japan**



Introduction

Irritable bowel syndrome (IBS) is considered a transcultural functional bowel disorder with high comorbidity of psychiatric disorders, but well-designed epidemiologic studies have never been done in Japan.

The purpose of this study was to obtain the prevalence of IBS and the comorbidity rates of panic disorder (PD) and agoraphobia by the first large-scale survey using stratified random sampling in Japan.



Subjects and Methods

Subjects were recruited using stratified random sampling by gender, age by 10-year interval from 20 to 69 years and 10 districts from all over Japan.

As a result, a total of 4,000 subjects (response rates, 69%) completed a questionnaire and the results were weighted for representing the Japanese general population.

The questionnaire asked about key symptoms of IBS, PD and agoraphobia.

IBS was defined by the presence of abdominal pain relieved by defecation, with symptoms either in frequency or in consistency of stools and without symptoms of exclusion criteria (Table 1).

PD and agoraphobia were defined by DSM-IV except not to limit agoraphobic situations to ones with fear of panic attack or panic-like symptoms.

Table 1. Diagnosis of Irritable Bowel Syndrome

Items Suggesting Irritable Bowel Syndrome

A. Indicate the symptoms that keep happening or often happen during more than 3 months in the past 12 months.

1. Loose or watery stools
2. Lumpy or hard stools
3. Alternating watery and lumpy stools
4. More than three bowel motions each day
5. Less than three bowel motions each week
6. Abdominal pain or discomfort relieved with defecation

Items for Red Flags

B. Have you ever had an operation on gastrointestinal tract in the past 5 years?

C. Do you find blood mixed in the stools?

D. Have you recently lost your weight a lot without dieting?

The diagnosis of IBS :

'yes' to #6 and at least one of #1, 2, 3, 4, and 5 and 'no' to all of the items for red flag symptoms.

Subtypes of IBS

Diarrhea-predominant IBS: either #1 or 4 without #3.

Constipation-predominant IBS: either #2 or 5 without #3.

IBS with alternating bowel habits: #3 or fulfilling both criteria for diarrhea- and constipation-predominant IBS.



Result 1: The Prevalence

The prevalence of IBS was 6.1% in total, and it was significantly higher in females than in males.

Diarrhea- and constipation-predominant IBS were prevalent in males and females, respectively (Table 2).

Table 2. Prevalence of Irritable Bowel Syndrome

	Total ^a			Diarrhea type ^a			Constipation type ^a			Mixed type		
	n	%	(95%CI)	n	%	(95%CI)	n	%	(95%CI)	n	%	(95%CI)
Total	246	6.1	(5.4-6.9)	77	1.9	(1.5-2.4)	99	2.5	(2.0-3.0)	70	1.7	(1.4-2.2)
Female	155	7.8	(6.6-9.0)	25	1.2	(0.8-1.8)	89	4.5	(3.6-5.5)	41	2.1	(1.5-2.8)
Male	91	4.5	(3.7-5.5)	52	2.6	(2.0-3.4)	10	0.5	(0.2-0.9)	29	1.4	(1.0-2.1)

^ap<0.01 for difference between men and women.

Abbreviations: CI = confidence interval.



Result 2: The Comorbidity

The comorbidity rates of PD and agoraphobia were significantly higher in IBS than in non-IBS subjects, and they were significantly higher in female than in male non-IBS subjects while they were not significantly different between female and male IBS subjects (Table 3).

Table 3. Comorbidity of Panic Disorder and Agoraphobia

	IBS subjects			non-IBS subjects		
	n	%	(95%CI)	n	%	(95%CI)
Total (n)	(246)			(3754)		
PD	23	9.3	(6.0-13.7) ^b	104	2.8	(2.3-3.4)
agoraphobia	81	33.1	(27.3-39.4) ^b	757	20.2	(18.9-21.5)
PD with agoraphobia ^a	17	6.7	(3.9-10.6) ^b	62	1.6	(1.3-2.1)
Female (n)	(155)			(1843)		
PD	17	11.0	(6.5-17.0) ^b	80	4.3	(3.5-5.4) ^c
agoraphobia	55	35.2	(27.7-43.3) ^b	435	23.6	(21.7-25.6) ^c
PD with agoraphobia ^a	12	7.5	(3.9-12.8) ^b	48	2.6	(1.9-3.5) ^c
Male (n)	(91)			(1911)		
PD	6	6.4	(2.2-13.6) ^b	24	1.3	(0.8-1.9)
agoraphobia	27	29.6	(20.4-40.1) ^b	321	16.8	(15.2-18.6)
PD with agoraphobia ^a	5	5.4	(1.7-12.5) ^b	13	0.7	(0.4-1.2)

^aSubgroup of the patients with panic disorder and those with agoraphobia.

^bp<0.01 for difference with non-IBS subjects.

^cp<0.0001 for difference between men and women.

Abbreviations: CI = confidence interval, IBS = irritable bowel syndrome, PD = panic disorder.



Conclusion

The prevalence of IBS and its comorbidity with PD and agoraphobia almost similar to those reported in Western industrialized countries were demonstrated for the first time in a Japanese representative sample.