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## THE IMPACT OF THE COVID-19 PANDEMIC ON IRRITABLE BOWEL SYNDROME

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**Background** Gastrointestinal manifestations of the COVID-19 pandemic may mimic Irritable Bowel Syndrome (IBS), and social distancing measures may affect IBS patients negatively. We aimed to study the impact of COVID-19 on respondents with IBS.

**Methods** We conducted an anonymised survey using MySurvey platform from May to June 2020 in 35 countries. The general public's knowledge, attitudes and practices regarding personal hygiene and social distancing during this COVID-19 pandemic and the psychological impact of COVID-19 were assessed. Statistical analysis was performed to determine the differences in well-being and compliance to social distancing measures between IBS and non-IBS respondents. Factors associated with worsening of IBS symptoms were evaluated. For newly developed IBS-like symptoms, subjects must fulfill ROME IV criteria.

**Results** Out of 2704 respondents, 2024 (74.9%) did not have IBS, 305 (11.3%) had IBS and 374 (13.8%) did not know what IBS was. Respondents with IBS reported significantly worse emotional, social and psychological well-being compared to non-IBS respondents and were less compliant to social distancing (28.2% vs 35.3%,  $p=0.029$ , table 1). Of the non-IBS respondents, 96 (4.7%) developed new IBS-like symptoms. Among IBS respondents, the majority reported no change in symptom severity (61.6%), while 26.6% reported improvement and 11.8% reported worsening in IBS symptoms. A higher proportion of respondents with no change in the severity of IBS symptoms was willing to practice social distancing indefinitely compared to those who deteriorated (74.9% vs 51.4%,  $p=0.016$ , table 2). In multivariate analysis (table 3), willingness

**Abstract IDDF2020-ABS-0205 Table 1** Comparison of demographic variables between respondents with and without IBS

	Non-IBS (n = 2024)	IBS (n = 305)	p
Age	39.7 ± 12.9	40.1 ± 13.0	1.0
Gender			0.6
Male	727 (35.9)	119 (39.0)	
Female	1297 (64.1)	186 (61.0)	
Race			0.2
Bengali	31 (1.5)	2 (0.7)	
Caucasian	24 (1.2)	6 (2.0)	
Chinese	1148 (56.7)	188 (61.6)	
Filipino	45 (2.2)	2 (0.7)	
Indian	154 (7.6)	20 (6.6)	
Japanese	5 (0.2)	0 (0.0)	
Korean	131 (6.5)	28 (9.2)	
Malay	328 (16.2)	39 (12.8)	
Others	158 (7.8)	20 (6.6)	
Economic region			0.3
High	1156 (57.1)	183 (60.0)	
Upper-middle	457 (22.6)	74 (24.3)	
Middle/Low	411 (20.3)	48 (15.7)	
What is your highest education level?			0.8
No formal education/Primary school	9 (0.4)	0 (0.0)	
Secondary school	164 (8.1)	29 (9.5)	
Pre-university	258 (12.7)	44 (14.4)	
Tertiary – undergraduate/postgraduate degree	1593 (78.7)	232 (76.1)	
Employment			0.4
Full-time	1497 (74.0)	213 (69.8)	
Part-time	125 (6.2)	18 (5.9)	
Not working	402 (19.9)	74 (24.3)	
Housing			1.0
Dormitory	61 (3.0)	13 (4.3)	
Government housing with 2 or 3 rooms	306 (15.1)	37 (12.1)	
Government housing with more than 3 rooms	376 (18.6)	62 (20.3)	
Private apartment or condominium	601 (29.7)	89 (29.2)	
Private landed property	680 (33.6)	104 (34.1)	
Annual household Income per capita in USD (total household income/number of people in the household)			1.0
Less than \$1000	259 (12.8)	37 (12.1)	
\$1000 - \$2000	274 (13.5)	46 (15.1)	
\$2000 - \$4000	375 (18.5)	49 (16.1)	
\$4000 - \$6000	211 (10.4)	29 (9.5)	
\$6000 - \$8000	138 (6.8)	24 (7.9)	
\$8000 - \$10000	173 (8.5)	23 (7.5)	
More than \$10000	594 (29.3)	97 (31.8)	
Have you been diagnosed with COVID-19?			1.0
Yes	32 (1.6)	4 (1.3)	
No	1992 (98.4)	301 (98.7)	
Compliance			0.029
Yes	715 (35.3)	86 (28.2)	
No	1309 (64.7)	219 (71.8)	
Not flourishing	1025 (50.6)	207 (67.9)	<0.01
Flourishing	999 (49.4)	98 (32.1)	
Well-being total scores	45.8 ± 14.6	40.5 ± 14.8	<0.01
Emotional well-being	10.3 ± 3.5	9.4 ± 3.6	<0.01
Social well-being	15.0 ± 6.1	12.8 ± 6.1	<0.01
Psychological well-being	20.4 ± 6.6	18.3 ± 6.7	<0.01

**Abstract IDDF2020-ABS-0205 Table 2** Comparison of demographic variables between respondents who reported no change and worsening in severity of IBS

Question	No change (n = 183)	Worsen (n = 35)	p
Age	38.8 ± 12.2	40.1 ± 14.3	1.0
Gender			1.0
Male	71 (38.8)	14 (40.0)	
Female	112 (61.2)	21 (60.0)	
Economic region			0.1
High	110 (60.1)	28 (80.0)	
Upper-middle	44 (24.0)	6 (17.1)	
Middle/Low	29 (15.8)	1 (2.9)	
What is your highest education level?			1.0
Secondary school	18 (9.8)	4 (11.4)	
Pre-university	22 (12.0)	5 (14.3)	
Tertiary – undergraduate/postgraduate degree	143 (78.1)	26 (74.3)	
Employment			0.2
Full-time	132 (72.1)	26 (74.3)	
Part-time	7 (3.8)	4 (11.4)	
Not working	44 (24.0)	5 (14.3)	
Work from home			1.0
Yes	45 (32.1)	8 (26.7)	
No	95 (67.9)	22 (73.3)	
Compliance			1.0
Yes	54 (29.5)	10 (28.6)	
No	129 (70.5)	25 (71.4)	
Which of the following would you consider as main reason for compliance with social distancing measures?			<b>0.034</b>
Fear of getting COVID 19	90 (49.2)	11 (31.4)	
Fear of family members getting COVID 19	86 (47.0)	19 (54.3)	
Fear of fines/punitive measures	7 (3.8)	5 (14.3)	
Would you willingly participate in the contact tracing app?			1.0
Yes	143 (78.1)	27 (77.1)	
No	40 (21.9)	8 (22.9)	
For how long are you willing to practice social distancing behaviour to keep yourself and others safe?			<b>0.016</b>
As long as it takes	137 (74.9)	18 (51.4)	
For another 2–3 weeks	4 (2.2)	4 (11.4)	
For another 1 month	12 (6.6)	6 (17.1)	
For another 3 months	14 (7.7)	5 (14.3)	
For another 6 months	13 (7.1)	1 (2.9)	
I want social distancing to stop now	3 (1.6)	1 (2.9)	
Flourishing			<b>&lt;0.01</b>
Yes	64 (35.0)	3 (8.6)	
No	119 (65.0)	32 (91.4)	
Well-being total scores	40.5 ± 15.0	35.4 ± 13.3	0.1
Emotional well-being	9.5 ± 3.5	7.7 ± 3.6	<b>0.014</b>
Social well-being	12.7 ± 6.3	11.7 ± 4.7	0.8
Psychological well-being	18.3 ± 6.9	15.9 ± 6.5	0.1

**Abstract IDDF2020-ABS-0205 Table 3** Univariable and multivariable regression of factors associated with worsening in severity of IBS (with no change in severity of IBS group as reference)

Question	OR (95% CI)	p	AdjOR(95%CI)	p
Do you wash your hands before and after handling food?*				
Never (ref)	1.00	-	-	-
Seldom	0.0 (0.0)	1.0	-	-
50% of the time	0.0 (0.0)	1.0	-	-
Most of the time	0.0 (0.0)	1.0	-	-
Always	0.0 (0.0)	1.0	-	-
Do you cover your mouth when you sneeze or cough?*				
Never (ref)	1.00	-	-	-
Seldom	0.0 (0.0)	1.0	-	-
50% of the time	0.0 (0.0)	1.0	-	-
Most of the time	0.0 (0.0)	1.0	-	-
Always	0.0 (0.0)	1.0	-	-
Which of the following would you consider as main reason for compliance with social distancing measures?				
Fear of getting COVID 19 (ref)	1.00	-	1.00	-
Fear of family members getting COVID 19	1.8 (0.8 – 4.0)	0.1	2.0 (0.9 – 4.7)	0.1
Fear of fines/punitive measures	<b>5.8 (1.6 – 21.6)</b>	<b>&lt;0.01</b>	<b>5.9 (1.4 – 25.6)</b>	<b>0.017</b>
For how long are you willing to practice social distancing behaviour to keep yourself and others safe?				
As long as it takes (ref)	1.00	-	1.00	-
For another 2–3 weeks	<b>7.6 (1.7 – 33.1)</b>	<b>&lt;0.01</b>	<b>6.0 (1.2 – 28.8)</b>	<b>0.026</b>
For another 1 month	<b>3.8 (1.3 – 11.4)</b>	0.017	2.9 (0.9 – 9.0)	0.1
For another 3 months	2.7 (0.9 – 8.4)	0.1	3.1 (0.9 – 10.2)	0.1
For another 6 months	0.6 (0.1 – 4.7)	0.6	0.6 (0.1 – 4.7)	0.6
I want social distancing to stop now	2.5 (0.3 – 25.7)	0.4	1.3 (0.1 – 22.3)	0.9
Emotional well-being	<b>0.9 (0.8 – 1.0)</b>	<b>&lt;0.01</b>	<b>0.9 (0.8 – 1.0)</b>	<b>0.042</b>

to continue social distancing for only another 2–3 weeks was significantly associated with higher odds of worsening IBS while better emotional well-being was associated with lower odds.

Flourishing was excluded from analysis due to overlap with emotional well-being.

\*Excluded from multivariable analysis due to 0 respondents in reference categories for respondents with no change in control IBS

**Conclusions** Our study showed differences in well-being and compliance to social distancing between IBS and non-IBS respondents, and these factors influence the worsening in severity of IBS. Further research will focus on how occupational stress and dietary changes may influence IBS symptoms