Prevalence of Functional Gastrointestinal Diseases(FGID) and the Comparison of Psychological Symptoms according to the Presence of FGID in Psychiatric Out-patients at a University Hospital

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AIM: This study investigated the prevalence of functional gastrointestinal disease(FGID) and comparison of psychological symptoms according to the presence of FGID in psychiatric out-patients at a University Hospital.

METHODS: The study was conducted with a total of 170 outpatients visiting the Department of Psychiatry at a University Hospital. After excluding 26 patients due to unreliable responses, the remaining 144 patients were included in the data analysis. FGID was identified in accordance with the Rome III questionnaire - Korean version. Demographic factors were recorded, and psychosocial factors were evaluated using the Hospital Anxiety Depression Scale (HADS), Patient Health Questionnaire-15 (PHQ-15), Childhood Trauma Questionnaire-Korean (CTQ-K), and State-Trait Anger Expression Inventory (STAXI). Chi-squared test, one-way ANOVA, Student’s *t*-test and the Pearson’s correlation coefficient was used as statistical analysis methods.

CONCLUSIONS: This study found that patients with psychiatric disorders had a high prevalence of FGIDs, and psychiatric out-patients with FGIDs showed higher psychopathology. These results suggest that FGIDs could be evaluated and managed for the treatment of psychiatric out-patients.

Table 3. Comparison of anxiety, depressive symptom, somatic symptoms and childhood trauma among FGID subtypes

	IBS		FD		FC		NERD	
	Negative (n=120)	Positive (n=24)	Negative (n=115)	Positive (n=29)	Negative (n=118)	Positive (n=26)	Negative (n=80)	Positive (n=64)
Anxiety (HADS)	7.54±5.83	11.71±6.03	7.09±5.56	12.79±5.81	8.11±5.99	8.81±6.35	6.41±5.47	10.52±5.99
	t=-3.106, p=0.002		t=-4.893, p<0.001		t=-0.531, p=0.596		t=-4.286, p<0.001	
Depressive symptom (HADS)	8.69±5.34	11.21±5.39	8.36±5.21	12.10±5.25	8.79±5.17	10.58±6.27	7.79±5.18	10.77±5.27
	t=-2.105, p=0.037		t=-3.459, p<0.001		t=-1.534, p=0.127		t=-3.402, p<0.001	
PHQ-15	7.21±6.13	12.08±6.01	6.26±5.23	15.00±5.68	7.85±6.45	8.81±6.01	5.10±4.95	11.67±6.06
	t=-3.565, p<0.001		t=-7.906, p<0.001		t=-0.695, p=0.488		t=-7.162, p<0.001	
CTQ-K	43.20±13.03	43.79±18.69	43.20±12.86	43.69±18.33	44.13±14.51	39.54±11.24	42.79±13.04	43.94±15.31
	t=-0.188, p=0.851		t=-0.167, p=0.868		t=1.514, p=0.132		t=-0.487, p=0.627	

N : Numer, FGID : Functional gastrointestinal disorder, NERD : Nonerosive reflux disease, FD : Functional dyspepsia, FC : Functional constipation, IBS : Irritable bowel syndrome, HADS : Hospital Anxiety Depression Scale, PHQ-15 : Patient Health Questionnaire-15, CTQ-K : Childhood Trauma Questionnaire-Korean

Table 4. Comparison of trait anger, state anger, anger-in, anger-out and anger control among the FGID subtypes

	IBS		FD		FC		NERD	
	Negative (n=120)	Positive (n=24)	Negative (n=115)	Positive (n=29)	Negative (n=118)	Positive (n=26)	Negative (n=80)	Positive (n=64)
Trait anger	22.08±6.78	28.04±9.24	21.38±6.68	28.00±8.79	22.98±7.81	23.50±6.33	21.44±6.36	25.13±8.41
	t=-3.683, p<0.001		t=-4.148, p<0.001		t=-0.315, p=0.753		t=-2.994, p=0.003	
State anger	18.47±7.89	16.74±5.30	17.79±7.54	21.28±8.26	18.43±7.94	18.77±7.18	17.20±7.88	20.11±7.41
	t=-0.071, p=0.928		t=-2.181, p=0.031		t=-0.199, p=0.843		t=-2.259, p=0.025	
Anger-in	16.74±5.30	19.67±5.37	16.63±5.22	19.59±5.56	17.22±5.50	17.27±5.05	16.14±5.39	18.59±5.13
	t=-2.463, p=0.015		t=-2.684, p=0.008		t=-0.042, p=0.967		t=-2.772, p=0.006	
Anger-out	15.87±4.86	18.46±5.19	15.69±4.85	18.72±4.91	16.22±5.01	16.65±5.08	15.23±4.78	17.64±4.96
	t=-2.355, p=0.020		t=-3.005, p=0.003		t=-0.399, p=0.690		t=-2.958, p=0.004	
Anger-control	19.57±5.71	20.75±5.89	19.65±5.81	20.21±5.47	19.85±5.71	19.38±5.89	19.39±5.91	20.23±5.52
	t=-0.923, p=0.358		t=-0.464, p=0.643		t=0.372, p=0.711		t=0.880, p=0.380	

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Table 1. Demographic and clinical characteristics of participants

		FGID-positive (n=63)	FGID-negative (n=81)	χ ² /t	p
Sex, n (%)	Male	32 (50.8)	45 (55.6)	0.323	0.570
	Female	31 (49.2)	36 (44.4)		
Age	M±SD	43.22±15.13	45.44±14.52	0.890	0.375
Marital status, n (%)	Unmarried	26 (41.3)	37 (45.7)	1.460	0.834
	Married	24 (38.1)	30 (37.0)		
	Separated	2 (3.2)	2 (2.5)		
	Divorced	6 (9.5)	9 (11.1)		
	Bereaved	5 (7.9)	3 (3.7)		
Education, years (%)	None	1 (1.6)	0 (0.0)	10.139	0.017
	<6	8 (12.7)	10 (12.3)		
	6-9	28 (44.4)	32 (39.5)		
	10-12	20 (31.7)	30 (37.0)		
	>12	6 (9.6)	9 (11.2)		
Diagnosis, n (%)	Schizophrenia	36 (57.1)	30 (37.0)	6.717	0.152
	Mood disorder	18 (28.6)	32 (39.5)		
	Anxiety disorder	2 (3.2)	5 (6.2)		
	Cognitive disorder	4 (6.3)	5 (6.2)		
	AUD	3 (4.8)	9 (11.1)		
Smoking, n (%)	Yes	19 (30.2)	25 (30.9)	0.008	0.927
	No	44 (69.8)	56 (69.1)		
Alcohol, n (%)	Yes	29 (46.0)	39 (48.1)	0.814	0.606
	No	34 (54.0)	42 (51.9)		
Antacid agent, n (%)	Yes	6 (9.5)	13 (16.0)	1.318	0.324
	No	57 (90.5)	68 (84.0)		
Chronic disease, n (%)	Yes	23 (36.5)	27 (33.3)	0.158	0.691
	No	40 (63.5)	54 (66.7)		

FGID : Functional gastrointestinal disorder, N : Number, M : Mean, SD : Standard deviation, AUD : Alcohol use disorder

Table 2. Comparison of psychiatric disorder by FGID group

		Schizophrenia n (%)	Mood disorder n (%)	Anxiety disorder n (%)	Cognitive disorder n (%)	Alcohol use disorder n (%)
IBS (n=24)	Negative	60 (90.9)	39 (78.0)	4 (57.1)	9 (100)	8 (66.7)
	Positive	6 (9.1)	11 (22.0)	3 (42.9)	0 (0.0)	4 (33.3)
χ ² =11.408, p=0.022						
FD (n=29)	Negative	58 (87.9)	35 (70.0)	5 (71.4)	7 (77.8)	10 (83.3)
	Positive	8 (12.1)	15 (30.0)	2 (28.6)	2 (22.2)	2 (16.7)
χ ² =6.085, p=0.193						
FC (n=26)	Negative	55 (83.3)	41 (82.0)	7 (100)	6 (66.7)	9 (75.0)
	Positive	11 (16.7)	9 (18.0)	0 (0.0)	3 (33.3)	3 (25.0)
χ ² =3.439, p=0.487						
NERD (n=64)	Negative	43 (65.2)	23 (46.0)	2 (28.6)	6 (66.7)	6 (50.0)
	Positive	23 (34.8)	27 (54.0)	5 (71.4)	3 (33.3)	6 (50.0)
χ ² =6.975, p=0.137						

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