

The Correlation Between Depression and Gastroesophageal Reflux Disease Questionnaire (GERD-Q) Score Among Dyspepsia Patient in Atma Jaya Hospital

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ABSTRACT

Background: In adults, the symptoms of gastroesophageal reflux disease (GERD) are often complained of in daily life and their prevalence has increased. Symptoms of GERD are often found along with the occurrence of dyspepsia. One of the factors that affect the symptoms of GERD is depression. Due to the limited data available in Indonesia, this study was conducted to see the correlation between depression and gastroesophageal reflux disease questionnaire score (GERD-Q).

Method: This study was conducted on dyspepsia patients at Atma Jaya Hospital (RSAJ) beginning at June to September 2018. The study was conducted using a cross-sectional design and using the GERD-Q and Depression questionnaire, Anxiety, Stress Scale 42 (DASS 42) which has been translated and validated by other researchers to measure GERD scores and depression scores.

Results: The total respondents of this study were 53, with the percentage of men and women being 30.2% and 69.8% respectively. The average age of patients was 57.2, with those who were overweight/obese as many as 64.2%, and those who smoked as many as 9.4%. As many as 73.6% respondents had a GERD-Q score of ≥ 8 . Moreover, 35.8% of respondents had mild depression, 15.1% had moderate depression, and 3.8% had severe depression. The results showed a significant correlation between depression and GERD-Q score in Atma Jaya Hospital dyspepsia patients ($p = 0,000$, $r = 0,496$).

Conclusion: There is a correlation between depression and GERD-Q score of dyspepsia patients at Atma Jaya Hospital

Keywords: gastroesophageal reflux disease questionnaire (GERD-Q) score, depression, dyspepsia

ABSTRAK

Latar belakang: Pada orang dewasa, gejala gastroesophageal reflux disease (GERD) merupakan gejala yang sering dikeluhkan dalam kehidupan sehari-hari dan prevalensinya mengalami peningkatan. Gejala GERD sering kali ditemukan bersamaan dengan terjadinya dispepsia. Salah satu faktor yang dapat mempengaruhi gejala GERD adalah depresi. Karena keterbatasan data yang ada di Indonesia, maka penelitian ini dilaksanakan untuk mencari hubungan antara depresi dengan skor gastroesophageal reflux disease questionnaire (GERD-Q).

Metode: Penelitian ini dilakukan terhadap pasien dispepsia pada Rumah Sakit Atma Jaya (RSAJ) pada Juni hingga September 2018. Penelitian dilakukan dengan metode potong lintang dan menggunakan kuisioner GERD-Q dan depression, anxiety, stress scale 42 (DASS 42) yang telah ditranslasi dan divalidasi oleh peneliti lain untuk mengukur skor GERD dan skor depresi.

Hasil: Total responden penelitian ini adalah 53, dengan persentase laki-laki dan perempuan yaitu 30,2%

dan 69,8%. Rerata usia pasien adalah 57,2 dengan responden yang overweight/obesitas sebanyak 64,2% dan yang merokok sebanyak 9,4%. Sebanyak 73,6% responden memiliki skor GERD-Q ≥ 8 , 35,8% responden dengan depresi ringan, 15,1% dengan depresi sedang, dan 3,8% dengan depresi parah. Hasil penelitian menunjukkan adanya hubungan yang bermakna antara depresi dengan skor GERD-Q pada pasien dispepsia Rumah Sakit Atma Jaya ($p = 0,000$, $r = 0,496$).

Simpulan: Terdapat hubungan antara depresi dengan skor GERD-Q pada pasien dispepsia Rumah Sakit Atma Jaya.

Kata kunci: Skor gastroesophageal reflux disease questionnaire (GERD-Q), depresi, dispepsia

INTRODUCTION

GERD is a common disease commonly found in the upper digestive tract.¹ In the past few decades, several studies on the prevalence of GERD in Asia based on symptoms or endoscopic results showed an increase from previous studies.¹ Several typical symptoms of GERD include heartburn (burning sensation in the retrosternal chest area) and regurgitation.² There are many factors that can affect GERD symptoms, such as old age, gender, family medical history, economic status, increase in body mass index (BMI) and cigarette use³.

Depression drives a person to have feelings and behaviours that are different from their usual self. Someone with depression often feels inferior, feels guilty; unable to control feelings, and even has the desire to commit suicide. In addition, someone with depression has an interest in abusing alcohol and drug that can make depression become even more difficult to eliminate and worsen.⁴ Someone with depression has increased serotonin levels and has HPA axis activation. The increase in serotonin levels and activation of the HPA axis, is known to cause disturbances in gastrointestinal activity, such as disrupting the smooth muscle work in the stomach and disturbing emptying of gastric contents.^{5,6}

Due to limited amount of data regarding the relationship between depression and GERD disease, especially in Indonesia, the researcher was interested in conducting further study on the correlation between depression and GERD disease. It is expected that this study can be beneficial for all concerned parties to maintain psychological health in order to avoid depression in an effort to reduce the risk of GERD.

METHOD

This study was a descriptive analytic study with a cross sectional design that was a correlative analysis study whose objective was to find the correlation between depression and GERD-Q scores of dyspepsia

patients at Atma Jaya Hospital Jakarta. The researcher observed without intervening and observed the dependent variable in a certain amount of time, and retrieved data through a questionnaire. This study was conducted at the Social Security Administrator for Health polyclinic Atma Jaya Hospital, Jakarta during June to September of 2018. The sampling technique in this study was conducted consecutively, which included all respondents who experienced dyspepsia who met the inclusion criteria, namely respondents at all ages who were willing and signed an informed consent; and excluded respondents who were undergoing proton pump inhibitor (PPI) therapy, histamine 2 receptor antagonists (H2RAs), antacids, prokinetics, anti-depressants, and psychotherapy for the past 2 weeks, and respondents who experienced liver and kidney disease, upper gastrointestinal bleeding and heart disease such as myocardial infarction.

The data taken were GERD-Q scores using the GERD-Q questionnaire and depression scores using the DASS 42 questionnaire.^{7,8} Spearman correlation test was used to analyse the data. This study was examined and accepted ethically by the Ethics Department of the Faculty of Medicine, Atma Jaya Catholic University, Jakarta and has received a letter of ethical approval. Samples recruited in this study, had previously been given information about research and had signed an agreement sheet.

RESULTS

The total respondents in this study were 53 respondents, with 39 respondents (73.6%) experiencing symptoms of GERD and 14 respondents (26.4%) not experiencing symptoms of GERD. Most of the respondents in this study were female who amounted to 37 respondents (69.8%) while 16 respondents (30.2%) respondents were male. The average age of the respondents was 57.2, with 22 respondents (41.5%) aged < 57 years and 31 respondents (58.5%) aged ≥ 57 years. Most of the respondents experienced overweight/

obesity, which is 34 respondents (64.2%). In this study, the number of respondents who smoked was very small, that was 5 out of 53 respondents. Furthermore, 24 respondents (45.3%) did not experience depression and 29 respondents experienced depression. The incidence of depression in the study included mild depression (35.8%), followed by moderate depression (15.1%) and severe depression (3.8%) (Table 1).

The results of this study showed that there were 49% respondents with depression who experienced symptoms of GERD, while those without depression who had no symptoms of GERD amounted to 19%. Through analysis of data using the Spearman correlation test, the values of p 0,000 and r 0,496 were obtained, indicating that there was a significant correlation between depression and GERD-Q score with moderate correlation strength (Table 2). Tests for logistic regression analysis for overweight/obesity and smoking p values were 0.623 and 0.999, which means there was no significant relationship between overweight/obesity and smoking with GERD-Q scores (Table 3).

Table 1. Characteristic of the respondents

Characteristic	n (%)
GERD-Q Score	
≥ 8	39 (73.6)
< 8	14 (26.4)
Depression	
Normal	24 (45.3)
Mild	19 (35.8)
Moderate	8 (15.1)
Severe	2 (3.8)
Very severe	0 (0)
Smoking	
Smoking	5 (9.4)
Not smoking	48 (90.6)
Overweight/obesity	
Overweight/obesity	34 (64.2)
Not overweight/obesity	19 (35.8)
Sex	
Male	16 (30.2)
Female	37 (69.8)
Age*	
< 57 years	22 (41.5)
≥ 57 years	31 (58.5)

Table 2. Correlation between depression and GERD-Q score

	Coef-ficient	Wald	df	p	OR	95% CI	
						Min	Max
Overweight/obesity	-0,318	0,241	1	0,623	0,727		
Smoking	-20,261	0,000	1	0,999	0,000	0,204	2,592

Table 3. Multivariate variables that were influenced GERD-Q score

	GERD-Q Score	
Depression	r	0,496
	p	0,000
	n	53

DISCUSSION

In this study, a Spearman test for depression score and a GERD-Q score was carried out, yielding result of p -value at 0,000 and r at 0,496. Those results mean that the correlation was statistically significant between depression score and GERD-Q score with moderate correlation strength. In accordance with this study, a study by Yang et al. found that there was a relationship between depression and GERD, in which depressed patients had an increase in symptoms of GERD 1.7 times compared with patients without depression. This increase in GERD symptoms, which can be caused by depression, affects the appearance of reflux symptoms, increases sensitivity to the occurrence of reflux symptoms, and increases reflux symptoms in patients with depression.⁹

The cohort study conducted by Kim et al also supports this study, that there is a correlation between depression and GERD, where the incidence of GERD is higher in patients with depression (16.3%). This is because depression can reduce LES pressure, change oesophageal motility, increase gastric acid secretion, and reduce acid cleansing in the oesophagus so that it can cause reflux. Also, it is estimated that someone with depression experiences a decrease in the oesophageal sensation so that it is more sensitive to changes that occur in the oesophagus.¹⁰ Another study that supports the results of this study is the one conducted by On et al, where there is a correlation between depression and GERD, this is thought to be caused by poor sleep quality in patients with depression.¹¹

Multivariate analysis of logistic regression was carried out in this study, to conduct an analysis of confounding factors that cannot be analysed in this study, because it cannot be separated. Based on the multivariate tests that have been conducted, it was found that smoking and overweight/obesity did not have an effect on the GERD-Q score, with p -values of 0.623 and 0.999. The study by Shaha et al and Locke et al.^{12,13} found similar results that there was no correlation between smoking and the GERD-Q score. Data in that particular study showed that GERD-Q scores were higher in non-smoking respondents compared to smoking respondents.^{12,13} A study by Cela et al stated that there was a relationship between smoking and symptoms of GERD.¹⁴ This gave different perspective from the results of the study by Cela et al. The difference was predicted because in this study smoking variables were only differentiated into smoking and not smoking while in the study by Cela et al smoking variables were distinguished into active smoker, former smoker, and non-smoker.¹⁴

Studies conducted by Solhpour et al and Jacobson et al support the results of this study, that there is no significant correlation between overweight/obesity and the occurrence of GERD.^{15,16} This is estimated because the cause affecting the symptoms of GERD is not a state of overweight/obesity but rather an increase in body weight.¹⁶ The study by Dore et al however, gave different result to this study, that there was a relationship between overweight/obesity and GERD.¹⁷ This was estimated because in the study by Dore et al. The diagnosis of GERD was done using endoscopy, which had a lower sensitivity value (< 50%) compared to the GERD-Q15 questionnaire.¹⁷

CONCLUSION

There is a correlation between depression score and GERD-Q score of dyspepsia patients at RSAJ. Future research is expected to be able to use research instruments that can diagnose diseases more accurately, for example by using research instruments which are gold standards or by using research instruments that have high sensitivity and specificity values.

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