

Dyspeptic Syndrome in Urban Population in Jakarta

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ABSTRACT

Background: *Dyspeptic syndrome is experienced by many patients who visit general practitioners and gastroenterologist. In Indonesia, a small number of epidemiological data about dyspeptic syndrome are available. The aim of this study was to obtain data on prevalence, characteristics and factors/lifestyle associated with dyspeptic syndrome in urban population of Jakarta.*

Method: *The study was conducted by interview to 1,645 respondents representing the population of Jakarta in the year 2007 using the Steps WHO version 1.4 instruments. The selection of respondents was performed by multistage cluster random sampling, i.e. each municipality is represented by one district and each was represented by a number of villages and respondents interviewed at random. Dyspeptic syndrome is defined whenever there is one or more complaints of nausea, vomiting, belching, epigastric pain, no appetite, early satiety, bloating. Scoring was performed for each category of questions using wstep1 method prior to the analysis. Data analysis was performed with Chi-square test or t-test.*

Results: *Of the 1,645 respondents, the prevalence of dyspeptic syndrome was 58.1%. The most apparent clinical complaint ranges consecutively, i.e. nausea 30.1%, epigastric pain 28.7%, bloating 23.8%, etc. Dyspeptic syndrome is significantly more often experienced by female respondents ($p < 0.001$). Dyspeptic syndrome were more common in respondents who have less/no fruit ($p < 0.001$) and vegetables ($p = 0.049$) intake. Dyspeptic syndrome is more common in respondents with anxiety and depression ($p < 0.001$) also in respondents who consume non-steroidal anti-inflammatory drugs (NSAIDs) ($p < 0.001$).*

Conclusion: *Prevalence of dyspeptic syndrome in Jakarta urban population is 58.1%. Dyspeptic syndrome was more common in female, respondents who have less/no fruit and vegetables intake, in respondents who experienced anxiety and depression and respondents who consume NSAIDs.*

Keywords: *dyspeptic syndrome, Jakarta, urban population, prevalence*

INTRODUCTION

One third of patients who visit general practitioners and 60% patients who visit the gastroenterologist have dyspeptic syndrome.¹⁻⁴ Dyspeptic syndrome is defined as complaints of pain or discomfort in upper abdominal

region. The discomfort includes bloating, distention, anorexia, fullness, nausea, vomiting, a sense of early satiety, belching.^{3,5-11} Dyspeptic syndrome based on the cause of organic disorders can be divided into organic dyspepsia and functional dyspepsia. Most patients with functional dyspepsia were up 60% of cases of dyspeptic syndrome.^{11,12}

Dyspeptic syndrome may occur due to imbalance between aggressive and defensive factors, which aggressive factors are stronger than the defensive factors.¹³⁻¹⁶ Aggressive factors are gastric acid, pepsin, bile reflux, nicotine, alcohol, non-steroidal anti-

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inflammatory drugs (NSAID), corticosteroids, *Helicobacter pylori* infection, while defensive factors such as mucosal blood flow, surface epithelial cells, prostaglandin, mucus, bicarbonate secretion, motility, and others.

In the United States and Western countries, 25% of the population suffers from dyspeptic syndrome, and only a quarter of them visit the doctor. Sixty percent of patients with dyspepsia who underwent thorough examinations including upper gastrointestinal endoscopy is only experiencing functional dyspepsia.^{17,18} In Indonesia, there is a little number of epidemiological data on dyspeptic syndrome.

The aim of the study was to obtain data on the prevalence of dyspeptic syndrome in urban population in Jakarta, the characteristics of patients with dyspepsia and the existence of other lifestyle factors associated with the occurrence of dyspeptic syndrome.

METHOD

The study was conducted by interview to 1,645 respondents representing the population of Jakarta in the year 2007 using Steps WHO version 1.4 instruments. The selection of respondents was performed by multistage cluster random sampling, i.e. each municipality was represented by one district and each was represented by a number of villages and respondents were randomly interviewed. Prior to the interview, each selected respondent was given an explanation by the interviewer and filled in the informed consent form.

Dyspeptic syndrome can be confirmed if respondents complained about one or more of these symptoms: nausea, vomiting, belching, epigastric pain, no appetite, early satiety, bloating.⁹ Scoring was performed for each category of questions with wstep1 method prior the analysis. Data analysis was performed using Chi-square test or t-test, with 95% confidence interval.

RESULTS

In this study, a total of 1,645 respondents were enrolled and there were 40.9% males and 59.1% females with mean age ± SD was 44.05 ± 10.72 years with a minimum age of 25 years old and maximum age of 64 years old. Of the 1,645 respondents, we found 956 (58.1%) respondents who experienced dyspeptic syndrome (figure 1).

Based on the location of respondents in the five municipality of Jakarta, we found the prevalence of dyspeptic syndrome which is almost similar and varied between 46 to 66.2% (table 1).

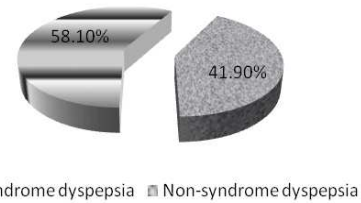


Figure 1. The prevalence of dyspeptic syndrome in urban population of Jakarta

Table 1. The prevalence of dyspepsia in five areas in Jakarta

Municipality	Prevalence (%)
North Jakarta	59.0
East Jakarta	46.0
Central Jakarta	66.2
West Jakarta	60.6
South Jakarta	58.2

Based on the symptoms of upper gastrointestinal disorder, it can be seen that the proportion of nausea was 30.1%, epigastric pain was 28.7%, bloating was 23.8%, a sense of early satiety was 21.9%, no appetite was 21.2%, belching was 20.2%, and vomiting was 8.7% (table 2).

Table 2. Complaints in respondents with dyspeptic syndrome

Complaints	Proportion (%)
Nausea	30.1
Vomiting	8.7
Bleching	20.2
Epigastric pain	28.7
No appetite	21.2
Early satiety	21.9
Bloating	23.8

Dyspepsia was more common in female than male respondents ($p < 0.001$). Other characteristics such as age, ethnic, level of education and occupation was not associated with dyspeptic syndrome ($p > 0.05$) (table 3).

Dyspeptic syndrome was not associated to smoking and alcohol consumption ($p > 0.05$). Moreover, dyspeptic syndrome was more common in respondents who consumed little or no fruit ($p < 0.001$) and vegetables ($p = 0.049$). This study also found that respondents who complained of anxiety and depression experienced more dyspeptic syndrome ($p < 0.001$). Dyspeptic syndrome was also found more in the respondents who consume NSAIDs ($p < 0.001$) (table 4).

Table 3. Characteristics of respondents with dyspeptic syndrome

Characteristics	Dyspeptic syndrome		P
	Positive (%)	Negative (%)	
Sex			
Male	53.1	46.9	< 0.001
Female	63.1	36.9	
Age (years)			
25 – 34	61.1	38.9	> 0.05
35 – 44	56.0	44.0	
45 – 54	61.9	38.1	
55 – 64	53.2	46.8	
Ethnic			
Betawi	64.0	36.0	> 0.05
Javanese	54.3	45.7	
Sundanese	62.6	37.4	
Others	56.9	43.1	
Level of education			
No school	64.2	35.8	> 0.05
No pass elementary	65.3	34.7	
Elementary school	59.9	40.1	
Junior high school	62.0	38.0	
Senior high school	54.2	45.8	
Academy/diploma	46.2	53.8	
University & post graduate degree	56.7	43.3	
Occupation			
Government employee	50.7	49.3	> 0.05
Private employee	55.9	44.1	
Self employee	52.8	47.2	
Family employee without salary	64.3	35.7	
Student	64.5	35.5	
Housewife	65.6	34.4	
Retirement	39.7	60.3	
Have ability but no work	59.4	40.6	
No ability no work	62.5	37.5	

Table 4. Life style of the respondents with dyspeptic syndrome

Life style	Dyspeptic syndrome		P
	Positive	Negative	
Smoking (%)			> 0.05
Yes	57.9	44.3	> 0.05
No	58.9	41.0	
Alcohol consumption (%)			> 0.05
Yes	58.3	41.7	> 0.05
No	58.0	42.0	
Daily fruits consumption (mean ± SD)	1.44 ± 0.93	1.56 ± 0.95	< 0.001
Daily vegetables consumption (mean ± SD)	1.58 ± 0.76	1.61 ± 0.74	0.05
Anxiety (%)			< 0.001
Yes	74.5	25.5	< 0.001
No	47.4	52.6	
Depression (%)			< 0.001
Yes	76.6	23.4	< 0.001
No	50.8	49.2	
NSAID consumption (%)			< 0.001
Yes	66.3	33.7	< 0.001
No	53.8	46.2	

DISCUSSION

Prevalence of dyspeptic syndrome in urban population in Jakarta is 58.1%. When compared with the population of other countries, this varies between countries. Agreus et al in his study found that dyspepsia in Sweden population is 14%.¹⁹ Data in the United States and Western countries estimate that the prevalence of dyspeptic syndrome is 15-25%.^{4,20} El-Seragq et al in a meta-analysis study found that the prevalence of uninvestigated dyspepsia is 10-40%.²¹

Most complaints of dyspeptic syndrome in this study was epigastric pain (28.7%), which is similar with other findings that epigastric pain is the most frequent complaint as many as 57.5%.^{2,22}

This study shows that dyspeptic syndrome was more common in female respondent. Such finding is consistent with a study in Sweden which found that most dyspepsia patients are female. Female patients with dyspeptic syndrome are more susceptible to disruption in their lives than men.^{23,24} Other characteristics were not associated with dyspeptic

syndrome, which is similar with other findings in the USA.²⁴

Based on the literature, lifestyle and habits affect the occurrence of dyspeptic syndrome.^{2,5,6,13} This study showed that smoking was not associated with dyspeptic syndrome, when compared to other study results, it may vary. Our result is contrary to the results of other studies findings that cigarette and the nicotine content may cause gastritis and dyspeptic syndrome. A great number of literatures suggest that smoking/nicotine is one of aggressive factors on dyspeptic syndrome.^{2,5,6,13,24,25,26}

In this study, we found that there was no association between alcohol consumption habits and the incidence of dyspeptic syndrome, which is in accordance with studies in the USA.²⁶ Such result is contrary to literatures suggesting that alcohol is one of aggressive factors on dyspeptic syndrome.^{2,5,6,13}

This study found that consumption of fruits and vegetables reduces the proportion of incidence of dyspeptic syndrome, which is consistent with the literatures suggesting that eating plenty of fiber may improve gastric emptying time and may reduce complaints of dyspeptic syndrome.²⁷⁻³¹ Some kinds of fruits can increase mucus production has anti-ulcer and free radicals antioxidants effects as well as inhibit the growth of *Helicobacter pylori* bacteria.²⁷⁻³⁰

We found that dyspeptic syndrome occurs more frequently in the depressed respondents. Such fact is in accordance with the literature, which found that anxiety and depression is one of the triggering and severing factor of dyspeptic syndrome.⁶ Treatment of dyspeptic syndrome with anxiety can be provided with anti-anxiety drug. Some studies demonstrate a quite good result with anti-anxiety drug administration.⁶ Treatment of dyspeptic syndrome with depression may be performed with antidepressants. Several studies obtain results that are also quite effective with these antidepressant agents.^{10,11,32,33}

The present study revealed that respondents who consumed NSAIDs (66.3%) were more affected by dyspeptic syndrome compared to the respondents who did not consume NSAIDs. Such finding is in accordance with literatures suggesting that NSAID is one of the aggressive factors that cause dyspeptic syndrome.^{20,34,35}

CONCLUSION

Prevalence of dyspeptic syndrome in Jakarta urban population is 58.1%. Dyspeptic syndrome was more common in female respondents who have low or no fruit and vegetables intake, in respondents with anxiety and depression and in respondents who consume NSAIDs.

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