

## Elderly people and women were more risk to mental emotional disorders

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### Abstrak

**Latar belakang:** Riset Kesehatan Dasar 2007 (*Riskesdas 2007*) dirancang untuk menyediakan data berbasis bukti untuk perencanaan kebijakan kesehatan. Salah satu data yang dikumpulkan adalah gangguan mental emosional atau distres psikologik. Tujuan penelitian ini mengidentifikasi faktor yang berperan terhadap gangguan mental emosional pada penduduk di Jawa Tengah.

**Metode:** Data merupakan sebagian data *Riskesdas 2007* yang dikumpulkan oleh pewawancara yang terlatih melalui survei nasional yang terintegrasi dengan *Susenas 2007*. Kami melakukan analisis terhadap 62.549 subjek yang berasal dari penduduk Jawa Tengah. Gangguan mental emosional dinilai dengan *Self Reporting Questionnaire* yang terdiri dari 2 pertanyaan diberikan pada subyek berumur  $\geq 15$  tahun. Nilai batas pisah kuesioner 5/6, artinya apabila responden menjawab "ya" minimal 6 pertanyaan, mereka diindikasikan mengalami gangguan mental emosional. Pengolahan data menggunakan program statistik STATA versi 10.

**Hasil:** Usia tua (65 tahun atau lebih) dibandingkan usia muda memiliki risiko 63% mengalami gangguan mental emosional [risiko relatif suaian ( $RRa$ ) = 1,63; 95% interval kepercayaan ( $CI$ ) = 1,52-1,75]. Perempuan dibandingkan laki-laki mempunyai risiko 43% lebih tinggi ( $RRa$  = 1.43; 95%  $CI$  = 1,35-1,51) mengalami gangguan mental emosional.

**Kesimpulan:** Usia tua dan perempuan mempunyai risiko lebih tinggi mengalami gangguan mental emosional. Oleh karena itu program kesehatan jiwa harus lebih ditujukan kepada kelompok usia lanjut. (*Health Science Indones 2010; 1: 8 - 13*)

**Kata kunci:** gangguan mental emosional, usia tua, *riskesdas 2007*

### Abstract

**Background:** Baseline Health Research 2007 (*Riset Kesehatan Dasar 2007* or *Riskesdas 2007*) was planned to provide evidence based data for health policy. One of the information collected was on mental emotional disorders or psychological distress. The objective of this study was to identify dominant factors related to mental emotional disorder.

**Methods:** Data were obtained from the *Riskesdas 2007*. We analyzed 62,549 subjects from Central Jawa. Mental emotional disorders were assessed by a *Self Reporting Questionnaire* which consisted of 20 questions given to subjects aged  $\geq 15$  years. Questionnaire cut-off point was 5/6 which meant that if the respondent answered "yes" to at least 6 questions indicated a mental emotional disorder. Interviews were conducted by skilled interviewers. Data were processed by STATA 10 version.

**Results:** Compared to the young, the elderly had a 63% risk to mental emotional disorders [adjusted relative risk ( $RRa$ ) = 1.63; 95% confidence interval ( $CI$ ) = 1.52-1.75]. Women had 43% risk to mental emotional disorders compared to men ( $RRa$  = 1.43; 95%  $CI$  = 1.35-1.51).

**Conclusion:** The elderly and women were more at risk to mental emotional disorders. Therefore, mental health programs should be more addressed to elderly. (*Health Science Indones 2010; 1: 8 - 13*)

**Keywords:** mental emotional disorders, elderly, *riskesdas 2007*

Community Mental Health Survey which can represent Indonesian society is still very limited, especially large scaled national survey. The data obtained such a survey is important to evaluate the community and also for planning any program, since a good health program should be based on evidence found in the population. Based on *Riskesdas* 2007, the prevalence of mental emotional disorder among Indonesian aged more than 15 years was 11.6%.<sup>1</sup> Mental emotional disorder is symptoms people suffering it is being have mental problems. This condition can continue to be serious mental disorder if it was not managed.

In 2000 Indonesia implemented decentralization, which resulted in an expansion of provinces as well as regions/municipalities. Until 2005 it has been administratively noted that there were 33 provinces consisting of 349 regions and 91 municipalities. Based on Law no 32 year 2004, which declared that in the decentralization era, program planning will be implemented at the regional/municipal level. Hence all provinces, even regions and municipalities, required an area based data.<sup>2</sup>

Central Java as one of the provinces in Java is located between two large provinces: West Java and East Java. Its location is 5°40' and 8°30' South Latitude and between 108°30' and 111°30' East Longitude (including the Karimunjawa Island). The farthest distance from West to East is 263 km and from North to South 226 km (excluding Karimunjawa Island). Administratively, the Central Java Province is divided into 29 regions and 6 municipalities. Area coverage of Central Java in 2006 was 3.25 million hectares or approximately 25.04% of the area of the Island of Java (1.70% of the entire Indonesian area).<sup>3</sup>

Based on the National Economic and Social Survey (*Susenas*) in 2006, the population of Central Java was 3218 million or around 14% of the Indonesian population. This puts Central Java as the third most densely populated area in Indonesia after West Java and East Java. The population of women is larger than men and this is indicated by the sex ratio (the ratio of male

inhabitants against female inhabitants) of 99 574.<sup>4</sup>

The population of Central Java is not equally distributed within the entire area of Central Java. In general, the population is concentrated in municipalities compared to regions. On average the population density in Central Java is 989 per square kilometer, and the most densely populated area is Surakarta City with a density level of approximately 12 thousand persons per square kilometer.<sup>3,4</sup> The number of households decreased from 8.64 million in 2005 to 8.43 million in 2006 or 2.37%. However, the average population per household has not changed. In 2006 the average population per household in Central Java was 3.8 persons.<sup>4</sup> Based on age group, this province have 27% from 0-14 years, 65.2% from 15-64 years and 7.8% from 65 and more years.<sup>2</sup>

The objective of this study was to identify dominant factors related to mental emotional disorders.

## METHODS

The population of this study was inhabitants of Central Java. They were from selected households in selected census blocks. This analysis made use of the data provided by the data center of *Riskesdas* 2007. There were 62,549 subjects. *Riskesdas* 2007 was a survey designed to describe the health issues of inhabitants throughout Indonesia comprehensively, accurately and oriented towards the interest of policy makers at the provincial and regional/municipal level.<sup>1</sup>

The population for *Riskesdas* 2007 was the entire members of a household or individuals throughout Indonesia. Source population was household members from chosen households in the census blocks. Household samples and household members in *Riskesdas* 2007 were identical to the list of household samples and household members in *Susenas* 2007. Hence, it can be said that the calculation methodology and sampling method for *Riskesdas* 2007 is identical to the *two stage sampling* implemented in *Susenas* 2007.

Of each region/municipality included in the sample frame, a number of census blocks were taken proportionally to the number of region/municipality in the respective region/municipality. The possibility of a census block being included into a census block sample of a region/municipality was in proportion to the number of households in a region/municipal. If in a census block there were 150 (one hundred fifty) households, in sampling at this level a census sub-block will be formed. Overall, based on the census block sample in Susenas 2007 in Central Java there were 1578 census block samples.<sup>4</sup>

*Riskesdas* was conducted simultaneously from July till December 2007. An inclusion criterion was member of a household included in a chosen household of a chosen census block at Susenas 2007. Respondents whose mental health was assessed must at least be 15 years old and willing to participate in the research.<sup>1</sup>

We used trained interviewers to collect the data using the questionnaire. The questionnaire consisted of several questions included respondents background. Assessment of mental health was conducted by means of an interview by a trained interviewer using the *Self Reporting Questionnaire (SRQ)* consisting of 20 questions. Although basically this interview should be self-administered, in a situation where many of the inhabitants were illiterate, an interview administered process is permitted.<sup>5,6</sup> A respondent was indicated as suffering from a disorder if the total "yes" answers exceeds the set cutting-off point. In research in various countries, the SRQ cutting-off point ranges between 3 to 10.<sup>5,6,7</sup> In *Riskesdas* it is set at 5/6 as cutting-off point meaning that respondents answering "yes" to 6 or more questions will be considered suffering from emotional mental disorder or distress which was potential for a mental disorder if further examined by a psychiatrist.<sup>6</sup>

Cutting-off point 5/6 was set according to the validity test research implemented by Iwan Gani Hartono, researcher at the National Institute of Health Research and Development of the Ministry of Health in 1955.<sup>8</sup> In his research, SRQ sensitivity was 88% and

specificity 81%, positive predictive value 60% and negative predictive value was 92%. This validity test procedure is mandatory to obtain the cutting-off point and to produce a good questionnaire in various settings.<sup>9,10</sup> The cutting-off point varies from one research to another, depending on sample taking methods, language used, and research objective.<sup>6</sup> In this survey, SRQ used is purely 20 questions. SRQ-20 consists of questions focusing more on neurosis experienced during the last 30 days

We divided sociodemographic characteristics into 3 subgroups (15-34, 35-64, and 65-97 years). Education was based on the last diploma obtained by the respondent and same-level schools are grouped together. In job divisions, subgroups were employee as civil servant, retired, Army/Police employees, and other employees. Self-employed were merchants or owners of business. Level of expenditure per capita originally was divided into 5 levels or 5 quintile, with quintile 5 as the highest quintile and the lowest or poorest quintile is 1. In this study, higher was grouped quintile 3, 4 and 5, and lower was quintile 1 and 2).

Editing was implemented by each regional technical supervisor. After editing, data cleaning and data merging with Susenas data was completed, data analysis was done.

Data analysis used the STATA 10. Data processing was undertaken after the data was clean. Bivariate analysis was used to assess association between categorical variables. After bivariate analysis, we continued to analyze using multivariate analysis. We calculated the relative risk to assess the relationship between the determinants and mental emotional disorder.

This survey was conducted with approval by the Ethics Committee at National Institute of Health Research and Development Ministry of Health.

## RESULTS

*Riskesdas* in Central Java involved 1,578 census blocks in 35 regions/municipalities. Out of 1,578 Susenas census blocks there were 25,478 households. The number of households visited by *Riskesdas* was 25,248 households or a

response rate of 97.3%. Out of 62,549 subjects, 55,467 (88.7%) did not have mental emotional disorders and 7,082 (11.3%) have mental emotional disorders. The ratio between those with mental emotional disorders and those without mental emotional disorder was 1:8.

Subjects with old age, low education, jobless, divorce, low level expenditure, and rural residence were more likely to have mental emotional disorder compared to the reference group.

Table 1. Some sociodemographic characteristics and the risk of mental emotional disorder

	Mental emotional disorder				Crude relative risk	95% confidence interval	P
	No (n=55 467)		Yes (n= 7 082)				
	n	%	n	%			
Education							
High	12,429	93.5	861	6.5	1.00	Reference	
Middle	27,179	90.0	3,015	10.0	1.33	1.11-1.59	0.002
Low	15,769	83.2	3191	16.8	2.46	2.08-2.90	0.000
Occupation							
Employee	9249	93.6	627	6.3	1.00	Reference	
Self employed	32,185	89.7	3,711	10.3	1.63	1.50- 1.77	0.000
Household	8209	86.4	1,293	13.6	2.15	1.95-2.36	0.000
Jobless	5795	80.0	1,445	19.7	3.13	2.85-3.43	0.000
Marital status							
Unmarried	11,256	91.1	1,101	8.9	1.00	Reference	
Married	39,397	89.2	4,766	10.8	1.22	1.14- 1.30	0.000
Divorce	4814	79.8	1,215	1,21	2.27	2.09-2.46	0.000
Level of expenditure							
High	20,371	89.7	2,347	10.3	1.00	Reference	
Low	35,049	88.1	4,733	11.9	1.15	1.09-1.20	0.000
Residence							
Urban	25,982	90.4	2,748	9.56	1.00	Reference	
Rural	29,485	87.2	4,334	12.8	1.34	1.27-1.40	0.000

Table 2 revealed two dominant factors for the risk of mental emotional disorder, age and gender. The older subjects had more risk to be mental emotional disorder compared to subjects aged 15-34 years. Those aged 35-64 and ≥65

years had 33% and 63% increased risk to be mental emotional respectively. Women increased the risk of mental emotional disorder 43%.

Table 2. The relationship between age, gender and risk mental emotional disorder

	Mental emotional disorder				Adjusted relative risk*	95% CI	P
	No (n=55,467)		Yes (n=7,082)				
	n	%	n	%			
Age (years)							
15-34	22,202	90.7	2,280	9.3	1.00		
35-64	27,667	89.1	3,382	10.9	1.33	1.07-1.20	0.000
65-97	5,598	79.8	1,420	20.2	1.63	1.52-1.75	0.000
Gender							
Male	27,074	91.3	4,881	8.7	1.00		
Female	28,393	86.2	5,119	13.7	1.43	1.35-1.51	0.000

\*Adjusted each other between variable listed on this table, education, occupation, and residence.

## DISCUSSION

Based on the results of *Riskesdas* 2007, the prevalence of mental emotional disorder or psychological distress in Central Java was 11.3%. The prevalence of mental emotional disorder in Central Java was approximately the same as the prevalence of mental emotional disorder at national level which is 11.6%.<sup>1,12</sup> In a quite similar survey in Brazil, the prevalence of psychological distress or mental emotional disorder was 22.7% but in relation to stressful life event experience.<sup>13</sup> The inhabitants of Al Ain in Pakistan showed a prevalence of 15.6%.<sup>14</sup> In Vietnam, the prevalence of mental distress 19.3%. The prevalence was almost same in Ethiopia, 11.6%.<sup>15</sup> All these surveys were conducted towards population and used SRQ as one of its measuring instrument. The difference prevalence was probably caused of different situation, characteristics and cut off points. Vietnam and Brazil surveys used 8, whereas Al Ain in Pakistan as well as Ethiopia used 6 as a cut off.<sup>14, 16</sup>

According to age, these results were quite similar to Brazil that revealed the elderly was 26% at risk to be mental emotional disorder than young, although they categorized > 55 years as elderly.<sup>17</sup> This study showed the trend of occupation at risk to mental emotional disorder increased from employee, self employed, household to jobless. Elderly (aged ≥ 65 years) with no job were more at risk than the young.

In this survey, a simple SRQ was used. Although this instrument is very simple, it has been proven to be quite a cost-effective tool because it is easy to use and hence suitable for developing countries with illiterate population and does not require a lot of funding.<sup>5</sup> Other surveys, such as the mental health survey in Iraq also uses SRQ as a research measuring instrument with the addition of other questionnaires which is more able to disclose a more specific diagnosis such as Composite International Diagnostic Interview (CIDI).<sup>18</sup> This method is better at disclosing the society's mental health status although not all respondents given the SRQ questions will also

be interviewed with other more specific instruments such as CIDI.<sup>17</sup>

Another article revealed that age contributes the strongest association to mental emotional disorder.<sup>12</sup> That results were slightly different with this study, in this study the strongest association was an insufficiency of job (jobless), while another strong association was low education. In the final model, socioeconomic and marital status did not appear, while in previous study these factors were measured.

In conclusion, elderly and women were more at risk to mental emotional disorders. For future development of mental health surveys, it would be better if diagnosis given by an SRQ interview can be followed-up by an interview using a more specific instrument by taking an existing sub-sample and can, thus, be more cost-effective like Iraq mental health survey.

The limitations of this study were not including other variables contributing to mental health, such as social support, personality, life events stressors, physical morbidity, etc. The cross sectional approach did not reveal the real relationship between variables and mental emotional.

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