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Sr. No.	VOLUME-4 ISSUE-12, DECEMBER 2016 , ISSN: 2321-9637 (Online) Published By: MG Aricent Educational Foundation		Page No.
1	Author	Aysun Coskun	1-6
	Paper Title	Edge Detection Using Ant Colony Optimization with Specific Images	
	DOI	-	
	Cite this article	Aysun Coskun , "Edge Detection Using Ant Colony Optimization with Specific Images ", International Journal of Research in Advent Technology, VOLUME-4 ISSUE-12, DECEMBER 2016, page no. 1-6, www.ijrat.org	
2	Author	Bhakti Sanjay Kate, B. S. Allurkar, S. M. Nagure	7-10
	Paper Title	Modelling And Contact Analysis Of Composite (FRP) Material Lamination On Cylindrical Roller Bearing	
	DOI	-	
	Cite this article	Bhakti Sanjay Kate, B. S. Allurkar, S. M. Nagure , " Modelling And Contact Analysis Of Composite (FRP) Material Lamination On Cylindrical Roller Bearing ", International Journal of Research in Advent Technology, VOLUME-4 ISSUE-12, DECEMBER 2016, page no. 7-10, www.ijrat.org	
3	Author	Rachmah Indawati, Kuntoro, Hari Basuki Notobroto, M. Bagus Qomaruddin, Marlina Setiawati Mahajudin	11-14
	Paper Title	Screening Performance of the Geriatric Depression Scale (GDS-15) for Elderly in the Community, Indonesia	
	DOI	-	
	Cite this article	Rachmah Indawati, Kuntoro, Hari Basuki Notobroto, M. Bagus Qomaruddin, Marlina Setiawati Mahajudin , "Screening Performance of the Geriatric Depression Scale (GDS-15) for Elderly in the Community, Indonesia ", International Journal of Research in Advent Technology, VOLUME-4 ISSUE-12, DECEMBER 2016, page no. 11-14, www.ijrat.org	
4	Author	Ass. Prof. Agung Sujatmiko, SH, MH	15-27
	Paper Title	The Teaching Method of Traditional Knowledge in Indonesia	
	DOI	-	
	Cite this article	Ass. Prof. Agung Sujatmiko, SH, MH , " The Teaching Method of Traditional Knowledge in Indonesia ", International Journal of Research in Advent Technology, VOLUME-4 ISSUE-12, DECEMBER 2016, page no. 15-27, www.ijrat.org	
5	Author	Devi Urianty Miftahul Rohmah, Bambang Dwi Argo, Panji Deoranto	28-34
	Paper Title	Inventory Optimization Using Consecutive Method and Silver Meal Method for Non-Linear Demand Model: Case Study	
	DOI	-	
	Cite this article	Devi Urianty Miftahul Rohmah, Bambang Dwi Argo, Panji Deoranto , " Inventory Optimization Using Consecutive Method and Silver Meal Method for Non-Linear Demand Model: Case Study ", International Journal of Research in Advent Technology, VOLUME-4 ISSUE-12, DECEMBER 2016, page no. 28-34, www.ijrat.org	
6	Author	V. Mallikarjuna, Dr.B.James Prasad Rao, G. Kishore	35-41
	Paper Title	Navigation of Automatic Vehicle by Using AI Technologies	
	DOI		

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Screening Performance of the Geriatric Depression Scale (GDS-15) for Elderly in the Community, Indonesia

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Abstract-The objectives is to assess the Geriatric Depression Scale (TGDS-15) when screening among elderly in community. A cross-sectional study of 450 elderly in Indonesia. All of respondent were given a GDS-15 questionnaire. The magnitude depression were calculated. A comparison between the groups demographic characteristics was carried out. Results were 25.8% of the elderly were found to have depression (cut-off score of ≥ 7). The mean that in community-based study confirms the high level of depressive. The range of GDS-15 score were severe variation (0-15). Results GDS-15 score (criteria cut-off point score depression in community is average >4.76) show that most of elderly in population is high risk 49.6%. Approximately increases 23.8%. An important determinant factors of depression symptoms in community. The GDS-15 scale was effective for diagnosis social-psychology problem specially elderly in the community. East Java, Indonesia must began to consider social problem relating to health for the elderly specially depressive symptoms.

Index Terms- Screening, depression, GDS-15, elderly, community

1. INTRODUCTION

People aged 65 and over continued to increase (table 1). This means East Java are aging. Changes in population structure toward the elderly are also affected by life expectancy at birth that continue to increase (Dinas Kesehatan Propinsi Jawa Timur, 2007; Dinas Kesehatan Propinsi Jawa Timur, 2009; Dinas Kesehatan Propinsi Jawa Timur, 2010; Badan Pusat Statistik Propinsi Jawa Timur, 2011; Dinas Kesehatan Propinsi Jawa Timur, 2012; Profil Kesehatan Propinsi Jawa Timur, 2011; Dinas Kesehatan Propinsi Jawa Timur, 2013; Profil Kesehatan Propinsi Jawa Timur, 2012; Dinas Kesehatan Propinsi Jawa Timur, 2014). This situation is certainly an effect on social welfare issues.

Table 1. Ageing population in East Java before and after the census in 2010

No	Category	Before			Census
		2006[1)]	2008[2)]	2009[3)]	2010[4)]
1	Number population	37,102,673	37,436,164	37,746,485	37,476,757
2	Sex 65+ Male Female	 1,188,297 1,345,235	 1,479,121 1,173,689	 1,169,907 1,515,557	 1,122,917 1,527,496
3	Age 65+ (%)	5.92	7.08	7.11	7.07
4	Life expectancy -at birth	68.25[4)]	69.10[4)]	69.35[4)]	69.57

Continue

No	Category	After		
		2011[5)]	2012[6)]	2013[7)]
1	Number population	38,026,550	38,052,950	38,318,791
2	Sex 65+ Male Female	 1,195,185 1,530,243	 1,151,197 1,558,943	 1,182,955 1,581,850
3	Age 65+ (%)	7.17	7.12	7.22
4	Life expectancy-at birth	69.81[6)]	70.09[6)]	NA

Sources: 1) Profil kesehatan propinsi Jawa Timur 2006; 2) Profil kesehatan propinsi Jawa Timur 2008; 3) Profil kesehatan propinsi Jawa Timur 2009; 4) Profil kependudukan hasil sensus penduduk Jawa Timur 2010; 5) Profil kesehatan propinsi Jawa Timur 2011; 6) Profil kesehatan propinsi Jawa Timur 2012; 7) Profil kesehatan propinsi Jawa Timur 2013; NA= not available

Furthermore, the first assumption, families with psycho-social problems are coming from vulnerable families. So based on Table 2. The identified that most of population 13.65% have psychological social problems. The second assumption, if the elderly are the most vulnerable groups, the psychological social problems of population aged 65 years and over as much as 6.79% will be at risk of developing depression. The third assumption, based on data showing that the number of violent acts experienced by the elderly varies widely (Badan Pusat Statistik

Propinsi Jawa Timur, 2013; Badan Pusat Statistik Propinsi Jawa Timur; 2013).

Table 2. Population and welfare in East Java, Indonesia 2012

No	Area geographic	Total population *	Poor family	Vulne-rable family	Family with social-psychol ogic problem	65+ years old (%) **	Eelderl y who experi ence violen ce ***
1.	Pacitan	544,229	36,488	2,468	10	11.18	37
2.	Ponorogo	860,218	23,250	689	168	9.90	0
3.	Trenggalek	678,791	18,289	2,912	145	8.85	4
4.	Tulungagung	999,640	22,280	78	13	8.45	171
5.	Blitar	1,126,151	33,294	391	80	8.88	0
6.	Kediri	1,514,132	36,333	973	256	7.47	36
7.	Malang	2,473,612	75,680	3,481	1,651	7.46	27
8.	Lumajang	1,014,625	30,536	820	109	7.12	56
9.	Jember	2,355,283	96,120	150	236	7.03	0
10.	Banyuwangi	1,568,956	117,891	1,699	367	8.23	163
11.	Bondowoso	744,067	105,257	8,104	527	8.03	89
12.	Situbondo	654,153	50,832	639	104	7.00	0
13.	Probolinggo	1,108,584	68,220	1,151	79	6.46	43
14.	Pasuruan	1,531,025	107,590	4,740	238	4.57	8
15.	Sidoarjo	1,981,096	15,081	742	205	3.45	22
16.	Mojokerto	1,039,477	33,725	694	125	6.05	15
17.	Jombang	1,214,086	28,275	443	89	6.65	31
18.	Nganjuk	1,025,416	49,180	1,804	411	8.12	99
19.	Madiun	666,519	45,942	1,046	100	9.17	60
20.	Magetan	626,851	34,170	965	58	11.22	0
21.	Ngawi	826,213	55,271	706	5	9.28	0
22.	Bojonegoro	1,217,850	69,309	4,694	99	7.72	37
23.	Tuban	1,129,050	NA	6,616	10	6.88	0
24.	Lamongan	1,191,239	1,763	335	169	7.01	39
25.	Gresik	1,196,124	11,800	3,697	56	4.00	0
26.	Bangkalan	919,002	11,713	24	43	6.25	75
27.	Sampang	891,982	145,059	1,148	0	5.27	0
28.	Pamekasan	808,057	52,947	60	1,113	5.02	15
29.	Sumenep	1,051,763	37,389	371	105	7.32	0
30.	Kota Kediri	271,655	1,815	230	42	5.82	0
31.	Kota Blitar	133,578	3,451	353	205	7.21	24
32.	Kota Malang	829,094	4,890	242	88	5.24	10
33.	Kota Probolinggo	220,086	3,457	76	30	5.12	2
34.	Kota Pasuruan	188,545	4,089	82	44	4.29	0
35.	Kota Mojokerto	121,645	4,386	92	5	5.28	0
36.	Kota Madiun	172,351	5,132	21	18	7.65	1
37.	Kota Surabaya	2,791,761	21,306	811	285	4.28	2
38.	Kota Batu	192,807	2,023	54	6	6.36	2
	Jumlah	37,879,713	1,464,233	53,451	7,294	6.79	1,068

Sources:*= Survei sosial ekonomi nasional 2012 & Jawa Timur dalam angka 2013; **= Survei sosial ekonomi nasional 2012; ***= there is no standard criteria with the elderly according to Jawa Timur dalam angka 2013; NA= not available

GDS-15 score is an instrument that can be used to measure the level of depression in the elderly either in hospital or in the community. The GDS-15 score had a sensitivity of 92% and a specificity of 89% (Kurlowicz, 1999). Thus, this instruments can be used as a suitable tool for screening the level of depression in the elderly in the community.

Depression is a mental illness that is often found in the elderly with symptoms that are not common. It is estimated that nearly 40% of depression in the elderly is not detected (Nyoto, 2014). The research objective was to assess the level of depression in the elderly through community screening and comparing with magnitude of depression according to the characteristics of the elderly in society.

2. METHOD

This study was conducted in East Java and using a cross-sectional design. The study population of 450 elderly of 60 years of age or over. Each elderly was evaluated by the interviewer using the geriatric depression scale (GDS-15). The inclution study were male or female, hearing and able to communicate. The study was approved by the ethics committee of the public health school of Airlangga University, and all elderly home Gave informed consent. Each respondent completed the Geriatric Depression Scale (GDS-15).

The Geriatric Depression Scale (GDS- 15) as developed by Yesavage (1983) (Yesavage et al., 1983). Instrument GDS-15 available on the internet at www.hartfordign.org so translate it from English into Indonesia (The Indonesian version of GDS-15). The criteria used to included the presence of depression is 7 (Nyoto, 2014).

Pearson's correlation was used to find validity instrument. Reliability refers to the internal consistency of a measure in a multiple-item construct, and assessed using Cronbach's alpha (cut-off point 0.7) (Cronbach, 1951). Chi-square analyses were performed on nominal categorical variables. Alpha level 0.05 was used for determining significance.

3. RESULTS

The GDS-15 was valid, it was found that Pearson's correlation items-total score was significant at the 0.05 level (p value <0.05). In terms of internal consistency, it was found that Cronbach's alpha for the entire questionnaire was good (Cronbach's alpha = 0.7). The overall mean score on the GDS-15 was 4.76 with standard deviation was 0,14 (range 0-15). A total of 450 elderly had depressive symptoms was 25.8% (with the edge presence of depression is 7). This mean that in community-based study confirms the high level of depressive.

Mean of age was 67.95 years (range 60-92 years). Almost 62.44% were 65 years old or more; 74% were female. Most of them (52.7%) reported elementary school and only 2.0% graduate. More than 50% widow and 1.5% had no partners. Most of them (53.1%) not job and 42.7% engaged in an occupation.

The demographic characteristics and their magnitude depression are given in table 3. According characteristic variable showed GDS-15 score were severe variation (range 0-15). An important determinant of depression symptoms.

Table 3. Demographic characteristic and GDS-15 score for elderly in community

No	Variable	Total n (%)	GDS-15 score	
			Mean (standard deviation)	Range
1	Age groups (years)			
	60-64	169 (37.6%)	4.29 (2.92)	0-15
	65-69	99 (22.0%)	4.50 (2.79)	0-12
	70-74	87 (19.3%)	5.28 (3.09)	0-13
	75-79	44 (9.8%)	5.27 (2.71)	0-12
	80-84	36 (8.0%)	5.97 (2.50)	0-11
	≥85	15 (3.3%)	4.40 (1.88)	0-8
2	Sex			
	Male	117 (26.0%)	4.35 (2.87)	0-13
	Female	333 (74.0%)	4.91 (2.88)	0-15
3	Education			
	Not educated	158 (35.1%)	5.56 (2.75)	0-12
	Elementary school	237 (52.7%)	4.55 (2.78)	0-15
	Yunior school	28 (6.2%)	4.25 (3.66)	0-13
	High school	18 (4.0%)	2.17 (1.76)	0-6
	Graduate	9 (2.0%)	3-11 (2.47)	0-7
4	Marital status			
	Married	199 (44.2%)	4.33 (2.79)	0-14
	Widow	244 (54.2%)	5.07 (2.91)	0-15
	Separated	7 (1.5%)	6.29 (2.81)	0-9
5	Job			
	Job	192 (42.7%)	4.35 (2.59)	0-15
	Pension	19 (4.2%)	2.63 (2.1)	0-6
	Not job	239 (53.1%)	5.48 (3.1)	0-14
		Total	4.76 (0.14)	0-15

Results GDS-15 score (criteria depression in community is average >4.76) show that most of them have depressive symptoms 223 (49.6%). This means depressive symptoms in elderly population is high risk. The characteristics demographic and depression showed that women have more problems than men ($X^2 = 5.57$; $p<0.05$); level of education have an effect on depressive symptoms ($X^2 = 23.31$; $p<0.05$); age groups had significant depressive symptoms ($X^2 = 15.57$; $p<0.05$); marital status and job have different an effect significant on GDS-15 score in elderly population.

Table 4. GDS-15 across categories for characteristics demographic

No	Variable	GDS-15 score		Total (%)	X^2 (P value)
		≤4.76	>4.76		
1	Age groups (years)				$X^2 = 15.57$
	60-64	101 (59.8%)	68 (40.2%)	169 (100%)	(p<0.05)
	65-69	52 (52.5%)	47 (47.5%)	99 (100%)	
	70-74	37 (42.5%)	50 (57.5%)	87 (100%)	
	75-79	18 (40.9%)	26 (59.1%)	44 (100%)	
	80-84	11 (30.6%)	25 (69.4%)	36 (100%)	
	≥85	8 (53.3%)	7 (46.7%)	15 (100%)	
2	Sex				$X^2 =$
	Male	70 (59.8%)	47 (40.2%)	117 (100%)	5.57
	Female	157 (47.1%)	176 (52.9%)	333 (100%)	(p<0.05)
3	Education				$X^2=$
	Not educated	60 (38.0%)	98 (62.0%)	158 (100%)	23.31
	Low education	127 (53.6%)	110 (46.4%)	237 (100%)	(p<0.05)
	Middle education	18 (64.3%)	10 (35.7%)	28 (100%)	
	High education	16 (81.5%)	5 (18.5%)	27 (100%)	
4	Marital status				$X^2=$
	Married	114 (57.3%)	85 (42.7%)	199 (100%)	6.68
	Separated	113 (45.0%	138 (55.0%)	251 (100%)	(p<0.05)
5	Job				$X^2=$
	Job	81 (42.2%)	111 (57.8%)	192 (100%)	13.24
	Pension	15 (78.9%)	4 (21.1%)	19 (100%)	(p<0.05)
	Not job	131 (54.8%)	108 (45.2%)	239 (100%)	

4. DISCUSSION

Mean scores on the GDS-15 was 4.76 elderly in community. Among the category of characteristics demography of elderly, almost the overall GDS-15 is same as the total average of 4.76. the cut-off score in this study nearly same Compared with out patients's clinics and homes an average of 5 or 6 (Mitchell, Bird, Rizzo, 2010). In general, Elderly visiting health care centers are those who have complaints or health problems. Thus, depressive symptoms were very common, example patient with Parkinson's desease (Meara, Mitchelmore, Hobson, 1999).

Depression symptoms in community were difficult, to be recognized. Although the results of screening in the community find many elderly people experiencing depression. To find depression symptoms in community, Indonesia should use a cut off point of 4 or 5 criteria. Assumed that elderly often elderly people experiencing a crisis of life such as losing a role, the death of someone, withdraw from their environment. Screening is used to see mild depressive disorders. Mild depressive disorders may include mood disorders or mood (depressed, feeling useless) (Darmojo, 2014). Symptoms of mild depression can be fatal to the health of the elderly.

5. CONCLUTIONS

East Java, Indonesia must began to consider social problem relating to health for the elderly specially depressive symptoms.

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