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Adapun penelitian tersebut layak dilakukan dan menghasilkan output yang sangat baik, meskipun belum ada ***Uji Ethical Clearance*** karena merupakan penelitian yang menggunakan data sekunder.

Demikian surat keterangan ini kami buat untuk dapat dipergunakan sebagai persyaratan pengusulan Jabatan Fungsional Guru Besar.

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Demographic Transition and Conditions of Health to Elderly People in East Java Province, Indonesia

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Abstract
Population dynamic changes in East Java has marked the fifth stage of the demographic transition. To understand it is necessary to look at the health transition. The objective is to identify the structure of the population and the health condition. This study was a 'secondary analysis of data'. Source of data derived from various sources journal. The proportion of elderly who have health complaints is more than 50%. The percentage of women larger than the males in all age groups. Proportion of 65+ is more than 7%. Good improvement in life expectancy can threaten health and the emergence of infectious diseases, degenerative diseases. East Java is in the second phase and has moved into the third phase of such a stroke in 2007 was 7.7% and in 2013 increased to 16%. In 2007, hypertension was 7.5% and in 2013 increased to 10.8%. High rates of infectious diseases HIV/AIDS. It can be interpreted as a failure on the second phase of the epidemiologic transition. Although the mortality rate of HIV/AIDS is very high and the results projected life expectancy continues to increase. Conclusion, need new thinking to meet the needs of public health, especially in the older age group.

Key Words: *Demographic transition, health conditions, elderly, East Java province*

I. INTRODUCTION

East Java has experienced a demographic transition. Some indicators showed improvement when compared to census figures Indonesia before 2000. If the results of the census of 1971 to 1990 is a triangular pyramid shape, in 2010 pyramid shape is a triangle with the top more widened. Another indicator of the 2010 population census data show that the proportion aged 65+ was 7.07%, the median age was 31.03 years (midpoint move toward old age). And the age structure of the population by the aging index was 28.76 with a dependency ratio was 51.29.

Life expectancy in 2010 in East Java was 69.57 years and has increased compared to five years earlier (Central Bureau of Statistics of East Java Province, 2011). Change the dynamic of this population mean that the East Java experience the fifth stage of the demographic transition that is characterized by low birth and death rates and increasing life expectancy. This condition is referred to as the aging population (Albert & Freedman, 2010; Morgan & Kunkel, 2007; Oizumi, Kajiwara, & Aratame, 2006).

East Java is one of the provinces in Indonesia which are aging faster (Central Bureau of Statistics Indonesia, 2014). Long life expectancy will affect the health problem. Linkages demographic transition and population health is called epidemiologic transition. Epidemiologic transition focused on the pattern of changes in health and disease as well as the interaction between demographic factors, social, and economic and consequently (Omran, 2005; Weisz, & Olszynko-Gryn, 2010; Ponnapalli, Ponnapalli, & A. Subbiah, 2013). To understand the epidemiologic transition it is necessary to look at the health transition, especially in the older people and the elderly, the purpose of the study is to identify the structure of the population and the health conditions of the elderly in East Java. The benefit is to provide information about the aging population and epidemiologic transition phase as well as the health status of the population.

II. METHODS

This research is a 'secondary analysis of data' means to obtain information about the aging population and demographic structure and health condition is done by reviewing the data from various sources. Source of data derived from Ministry of Health of Indonesia, the central bureau of statistic Indonesia, the central bureau of statistic East Java province, health office of East Java province. Data analysis using descriptive analysis by performing a frequency distribution. Identify the number of elderly, gender differences, population distribution by region, and health conditions.

III. RESULTS

Population structure

Population in East Java is constantly increasing. The increase in population, followed by changes in the demographic structure. Total 65+ age group shows that the number of men less than women either before or after the year 2010 (boundary transition). The sex ratio showed a large number of women (except in 2008).

The proportion aged 65+ also continued to increase (over 7%). The proportion aged 0-14 years despite declining but still relatively large (over 23%). And the proportion aged 15-64 years is still quite large (more than 60%). This is consistent with the shape of a pyramid in East Java that is triangular with the top widened. Dependency ratio shows the ratio of 1: 2, which means that 100 people of working age and old age bear young age between 40-50 people. This condition indicates that the East Java has undergone aging population.

Table 1. Demographic structure as the aging population in East Java before and after the demographic transition in 2010

No	Category	Before			Transition bounds	After		
		2006[1)]	2008[2)]	2009[3)]	2010[4)]	2011[5)]	2012[6)]	2013[7)]
1	Number population	37,102,673	37,436,164	37,746,485	37,476,757	38,026,550	38,052,950	38,318,791
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	 1,195,185 1,530,243	 1,151,197 1,558,943	 1,182,955 1,581,850
3	Sex Rasio 65+ (%)	88.33	126.0	77.19	73.51	78.10	73.85	74.78
4	Dependency Rasio (%)	51.0	44.23	43.92	51.29	43.73	44.94	44.42
5	Age (%) 0-14 15-64 65+	 25.22 69.99 5.92	 23.56 69.25 7.08	 23.40 69.48 7.11	 24.58 68.35 7.07	 23.26 61.65 7.17	 23.89 68.99 7.12	 23.54 64.16 7.22
6	Life expectancy-at birth	68.25[4)]	69.10[4)]	69.35[4)]	69.57	69.81[6)]	70.09[6)]	-

Sources: 1) Health Office of East Java Province (2007); 2) Health Office of East Java Province (2008); 3) Health Office of East Java Province (2010a); 4) Health Office of East Java Province (2010b); 5) Health

Office of East Java Province (2012); 6) Health Office of East Java Province (2013); 7) Health Office of East Java Province (2014).

Increased life expectancy in the region followed by the aging of the population (WHO, 2011). Life expectancy at birth in East Java continue to increase and during this century and have reached the age of 70 years. Some regions show a higher life expectancy than numbers in East Java in 2010 (transition bounds) that is over 70 years. Blitar city has the longest life expectancy was 72.23 years and Probolinggo district has the shortest life expectancy was 61.13 years. Conditions of rapid population aging is combined with public health problems associated with degenerative diseases.

Table 2. Life expectancy at birth according to district/city in East Java 2010

No.	District/city	Life expectancy	No.	District/city	Life expectancy
1.	Pacitan	71.26	20.	Magetan	71.17
2.	Ponorogo	69.93	21.	Ngawi	69.91
3.	Trenggalek	71.62	22.	Bojonegoro	67.15
4.	Tulungagung	71.48	23.	Tuban	67.78
5.	Blitar	70.88	24.	Lamongan	68.20
6.	Kediri	69.66	25.	Gresik	70.98
7.	Malang	68.96	26.	Bangkalan	63.32
8.	Lumajang	67.17	27.	Sampang	63.00
9.	Jember	62.84	28.	Pamekasan	63.99
10.	Banyuwangi	67.58	29.	Sumenep	64.71
11.	Bondowoso	63.23	30.	Kediri city	70.41
12.	Situbondo	63.19	31.	Blitar city	72.23
13.	Probolinggo	61.13	32.	Malang city	70.32
14.	Pasuruan	64.01	33.	Probolinggo city	70.17
15.	Sidoarjo	70.55	34.	Pasuruan city	66.37
16.	Mojokerto	70.19	35.	Mojokerto city	71.56
17.	Jombang	70.09	36.	Madiun city	71.01
18.	Nganjuk	68.89	37.	Surabaya city	71.01
19.	Madiun	68.90	38.	Batu city	69.44

Source: Health Office of East Java Province (2010b).

In fact, life expectancy in East Java is predicted to continue to rise until the year 2035. The results of the population projection in East Java 2010-2015 life expectancy until the age of 72 years in 2035.

Table 3. Population projection in East Java, 2010-2035

No	Category	2015	2020	2025	2030	2035
1	Number population	38,847.6	39,886.3	40,646.1	41,077.3	41,127.7
2	Dependency Rasio (%)	44.3	43.9	44.3	46.2	48.4
3	Age (%)					
	0-14	23.2	21.9	20.5	19.4	18.5
	15-64	69.3	69.5	69.3	68.4	67.4
	65+	7.5	8.6	10.2	12.2	14.1

4	Life expectancy- at birth	Projection 2010-2015 =70.1	Projection 2016-2020 =70.8	Projection 2021-2025 =71.4	Projection 2026-2030 =71.7	Projection 2031-2035 =72,0

Source: Central Bureau of Statistic of Indonesia (2013)

Health transition

Increased life expectancy give different health conditions of the elderly. Health conditions include morbidity and disease. Health complaints is a condition experienced by a person regarding health or psychiatric disorders, either due to acute illness/chronic, accidents, crime, or other causes. And health complaints does not always lead to disruption of daily activities. The proportion of elderly who have health complaints is more than 50%. And the older a person, the health complaints also increased. The percentage of women with health complaints larger than the males in all age groups.

Table 4. Health complaints according to sex at any age group in East Java

No	Health complaints	2012[1)]	2013[2)]
1	60-69 years (%)		
	Male	40.81	41.12
	Female	43.79	44.22
2	70-79 years (%)		
	Male	51.92	49.13
	Female	54.46	52.67
3	80+ years (%)		
	Male	54.88	59.52
	Female	58.87	56.66

Sources: 1) Central Bureau of Statistic of East Java (2013); 2) Central Bureau of Statistic of East Java (2014).

Complaints of the types vary widely. In general, complaints are experienced fever, cough, runny nose, and headache. Cough and runny nose affects more men than women, while more recurring headaches suffered by women compared to men. In the age group 60-69 years health complaints is quite high both in men and women. However, the health complaints are relatively lower in the 80+ age group. Even in 2013 a decline in the numbers of health complaints in the age group 80+.

Table 5. Type of health complaints by sex in each age group in East Java

No	Type of health complaints	Age group (year)					
		60-69		70-79		80+	
		Male	Female	Male	Female	Male	Female
1	Fever (%)						
	2012	6.61	5.76	6.50	6.62	6.52	6.31
	2013	5.75	6.54	5.69	5.59	6.04	4.21
2	Cough (%)						
	2012	14.55	12.03	16.54	14.78	19.28	12.86
	2013	13.28	12.85	14.81	12.66	17.19	11.74
3	Runny nose (%)						
	2012	9.43	8.37	9.65	8.88	9.19	8.41
	2013	9.56	9.16	8.49	7.08	8.77	6.63
4	Asthma (%)						
	2012	3.97	2.61	6.75	4.18	8.40	5.17

	2013	3.29	2.53	5.95	3.69	7.48	3.62
5	Diarrhea (%)						
	2012	1.01	1.11	0.87	1.39	1.69	2.34
	2013	1.39	1.48	1.00	1.50	1.53	2.64
6	Headache recurrent (%)						
	2012	5.37	8.65	6.39	10.16	9.70	10.20
	2013	5.18	6.47	6.38	8.22	4.54	7.32
7	Toothache (%)						
	2012	1.02	1.05	1.38	0.55	0.50	0.96
	2013	1.29	1.49	0.83	0.67	0.17	0.44
8	Others (%)						
	2012	23.22	27.30	33.06	38.09	36.01	44.38
	2013	24.09	27.58	31.08	37.28	40.36	44.97

Sources: 1) Central Bureau of Statistic of East Java (2013); 2) Central Bureau of Statistic of East Java (2014)

Morbidity is a health problem experienced by the elderly to the disruption of daily activities measured in the last month. Problems experienced by the elderly (60+) Since 2010-2013 showed that morbidity is lower in urban areas than in rural areas. Either in urban areas or in rural areas tends to decrease morbidity (except in 2011).

Table 6. Morbidity in the elderly by region in East Java

No	Morbidity (60+)	2010[1)]	2011[1)]	2012[1)]	2013[2)]
1	Urban area (%)	24.55	24.79	24.04	22.22
2	Rural area (%)	25.90	26.09	25.33	23.64
3	Urban & Rural (%)	25.37	25.47	24.76	23.02

Sources: 1) Central Bureau of Statistic of East Java (2013); 2) Central Bureau of Statistic of East Java (2014).

Cases of non-communicable diseases were reported in the province of East Java. The results show that the proportion of hypertention disease and stroke is large. 2007 stroke was 7.7% and in 2013 the disease increased to 16%. In 2007 the disease Hypertention was 7.5% and in 2013 the disease increased to 10.8%. When compared with the national rate in East Java has exceeded the national rate. Because life expectancy is increasing in almost all areas of the county or city in East Java over 69.57 years (in 2010) it is necessary vigilance in this degenerative disease.

Table 7. Non-communicable diseases were reported in East Java, 2007-2013

Desease	Heart desease (%)		Stroke (%)		Chronic lung disease (%)		Cancer (%)		Diabetes mellitus (%)		Hypertension (%)	
	2007[1)]	2013[2)]	2007[1)]	2013[2)]	2007[1)]	2013[2)]	2007[1)]	2013[2)]	2007[1)]	2013[2)]	2007[1)]	2013[2)]
East Java	5.6	1.3	7.7	16.0	0.24	3.6	4.4	1.6	1.3	2.5	7.5	10.8
Indonesia	7.2	1.5	8.3	12.1	0.40	3.7	4.3	1.4	1.1	2.1	7.6	9.5

Sources: 1) Ministry of Health of Indonesia (2008); 2) Ministry of Health of Indonesia (2013).

The emergence of sexually transmitted infections in East Java. It gives information about the pattern of disease changes as a result of social and cultural interaction. In 2011 in East Java, the number of new cases of HIV were 2,449; AIDS as much as 1,923; sexually transmitted diseases were 22.677; and the number of deaths from AIDS were 733 (Health office of East Java province, 2011). In 2014, the number of patients with HIV infection in East Java as much as 19.249 and the percentage of cumulative AIDS cases in Indonesia in the 60+ age group was 1.0 (Ministry of health of Indonesia, 2014).

IV. DISCUSSION

East Java is a dynamic population because it has the same characteristics with the developed countries. Related phenomenon is the proportion of the age of 65+ more than 7.9% (Oizumi, Kajiwara & Aratame, 2006). Improvements in life expectancy that good can threaten to health, especially infectious and parasitic diseases that often occur in infants and children. However, a common infectious disease also attacks the elderly and is a problem in overall health. In addition, the emergence of degenerative diseases as a result of lifestyle changes (WHO, 2011). This public health conditions change marks the transition of health. There are three phases in the health transition. The first phase refers to infectious disease, marked the second phase of chronic diseases such as stroke, heart desease, tumor and the third phase is a degenerative disease in old age (Oizumi, Kajiwara & Aratame, 2006). And East Java is in the second phase and has moved into the third phase such as diabetes, stroke and heart desease.

Evidence suggests that East Java as a region with a large number of elderly. And several degenerative diseases has exceeded the national rate. This condition needs to get serious treatment. High cases of infectious diseases such as HIV/AIDS. There is no evidence of specific data by age group but can be interpreted as a failure on the second phase of the epidemiologic transition as occurs in African countries (Caselli, Mesle & Vallin, 2007; Vallin & Mesle, 2004). Although the mortality rate of HIV/AIDS is very high but the results projected life expectancy in East Java continues to increase. Therefore, need new thinking to meet the needs of public health, especially in the older age group.

In society, morbidity is very high due to aging individuals. Both in urban and rural areas. This needs to be an effort to improve living standards. Example, diet and reduce serious infections. Impact is able to reduce the risk of events that continues to chronic and degenerative diseases. In addition, the main thing is how parents can still take care of themselves without the help of others (Albert & Freedman, 2010). This condition can reduce the cost for long-term care for the family and society. And these conditions will give a guarantee for the future for older people (European Commission, 2007).

V. CONCLUTIONS

East Java must adapt to this new reality and began to consider various matters relating to health, social, cost, and which provide security for the elderly, as experienced by aging societies in developed country.

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