

STUDY OF THE PROGRESS OF HEALTH CARE SYSTEM INFORMATION TECHNOLOGY IN INDONESIA

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ABSTRACT

The research objective is to study the progress of information technology in the health service system in Indonesia. The research method is a descriptive qualitative approach. The results of the research are that the existence of various programs to reduce various population problems should be of concern to all parties involved so that improvements in the quality of human resources continue to occur. Apart from that, the government should pay more attention to the policies and legislation that have been made for the welfare of the Indonesian people.

Keywords: Information Technology, Health Service System

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INTRODUCTION

In this contemporary era, information technology cannot be avoided. Currently, technology is very important for human activities. Technology has given humans many conveniences. This will also have an impact on people's desire to receive high-quality health services thanks to technological advances. Nurses must be able to adapt their health services to current technological advances because they now act as providers of holistic health services (Putra, 2019) .

In the era of the digital revolution, sending voice, data and images in various forms requires us to continue to develop technology with the acceleration of information. Nurses, as health workers who actively care for patients, can help improve the quality of health services by utilizing information technology. With information technology, patients and nurses are expected to get easier and more practical services.

Systematic management of information at all levels of government to provide services to the public is known as a health information system. Minister of Health Decree Number 004/Menkes/SK/I/2003 concerning policies and strategies for decentralization in the health sector and Minister of Health Decree Number 932/Menkes/SK/VIII/2002 concerning implementation instructions for developing district/city health information reporting systems are two laws that mention information systems health. Everyone wants to live a healthy, active and productive life, but if that is not possible, people will seek help to get health, and one way to get this health is to go to the hospital (Tutik, Hariyati, & Handiyani, 2008) .

A hospital management information system is a computer system that processes and integrates all health service business process flows through a network of coordination, reporting and administrative procedures with the aim of obtaining information quickly, precisely and accurately. Currently, hospital computer-based management information systems (SIMRS) are a very important tool to help manage hospital operations. (Handiwidjojo, 2009) .

The research objective is to study the progress of information technology in the health service system in Indonesia.

LITERATURE REVIEW

The system design stage is a very important stage in the system building process. Because developers must fully understand the hospital's needs, this process can take a long time (Fadhila & Afriani, 2019) . Hospitals must continue to communicate with system developers and the hospital so that they can explain what they want and expect, and developers must understand it (Mutia, Cholifah, & Yulianingsih, 2020) . To avoid repudiation or disagreement, boundaries must be discussed between the two. This is because there are differences of opinion about the scope of the system which are only known when the system is completed and used.

Information systems provide the information an organization needs to assist operations (Mulyani, Zamzami, & Zendrato, 2019) . Special tools are needed that will integrate nursing as a job because informatics in the nursing field is still relatively new. Information technology management systems have become an effective tool in daily activities, especially in health services and especially in nursing. By using technology information systems, nurses can increase efficiency and improve the quality of patient service by changing other core activities from manual to computerized (Mulyani et al., 2019) .

Data that is collected, classified and processed in such a way that it becomes data that supports each other with hardware and software support is known as an information system. Additionally, changes in management, jobs, organizations, and skills are part of information systems. Information system redesign also means organizational redesign (Witanti & Abdillah, 2018) .

METHOD

A descriptive qualitative approach was used by researchers in this study. Their data collection methods include in-depth interviews and literature studies as data collection tools (Situmorang & Amin As'ad, 2022) . This descriptive qualitative research aims to describe and describe phenomena that exist in the field of human and

natural engineering, with greater emphasis on characteristics, qualities and relationships between activities (Faris, Sitompul, & Nainggolan, 2023)

RESULTS AND DISCUSSION

Population is all the people who inhabit certain areas and regions at a certain time with the relationship between number, age, marital status, religion, gender, birth, death, quality, mobility, and also resilience related to economic, social, cultural and political parties who have rights and obligations.

Experts differentiate between demographic sciences and population studies. Demography comes from the Greek demos: population and Grafien: writing or can be interpreted as writing about population, which is the scientific study of the number, distribution and composition of population and how these three factors change over time. There are also demographic sciences that are quantitative and qualitative in nature. Quantitative demography (sometimes called Formal Demography) uses more statistical and mathematical calculations. However, qualitative demography explains more aspects of population in an analytical descriptive manner. Meanwhile, population studies systematically study the development, phenomena and problems of the population in relation to the surrounding social situation.

Definition of Population According to Experts

Article 26 of the 1945 Constitution states that residents are a group of citizens who live in a certain area where the area is used as a domicile or temporary area and can also be lived in permanently.

Mantra (2009) , residents are individuals with social status as individuals, members of families, communities, citizens, and a series of aggregated quantities who reside in a place within certain territorial boundaries.

AA Nurdiman , The meaning of population is an individual whose social status is settled and domiciled in a country who can be called a citizen or not.

Population Dynamics

Population dynamics is the change/growth in population over time, this is due to births, deaths and population movements. (These three things are known as elements of population dynamics.) Population growth can generally be divided into three types, namely natural growth, migration growth and total population growth.

Natural Population Growth is population growth obtained from the difference between births and deaths. Natural growth can be calculated using the following formula: $P_n = L - M$ (P_n = Natural population growth L = Number of births M = Number of deaths). Migration Population Growth is population growth obtained from the difference between in-migration and out-migration. Migration population growth can be calculated using the following formula: $P_m = I - E$ (P_m = Migration population growth I = Number of immigration E = Number of emigration).

Total Population Growth is population growth caused by birth, death and migration factors. Migration population growth can be calculated using the following formula: $P = (L - M) + (I - E)$ (P = Total population growth L = Number of births M = Number of deaths I = Number of immigration E = Number of emigration)
Birth rate (fertility) is the rate of increase in the number of children or the birth rate of babies in a certain period. The birth rate can be calculated in two ways, namely:

- a. Crude Birth Rate (CBR), is a birth rate that shows the number of births per thousand of the population in a period.
- b. General Birth Rate (GFR), is a number that shows the number of babies born to every 1000 women of reproductive or childbearing age, namely in the 15-49 year age group.

The death rate (mortality) is a reduction in the population in a certain period caused by mortality factors. The death rate can be determined in three ways, namely:

- a. Crude Death Rate (CDR), is a figure that shows the average number of deaths per thousand of the population in one year.
- b. Death Rate According to Age (Age Specific Death Rate/ASDR), is a number that shows the number of deaths in a certain age group per thousand of the population in the same group.

Infant Mortality Rate (IMR), is a number that shows the number of babies who die for every 1000 babies born alive.

C. Demographic factors that influence population growth rates

1. Birth (Fertility)

Fertility is the release of a baby from a woman's womb with signs of life. It is also stated that if a baby is born that does not survive, it will not be counted as a birth. Fertility also has factors that influence it. The supporting factors are called pro-natality. Reporting from the Ruang Guru website, pro-natality can be triggered by early marriage, and good assumptions that are believed to occur when one is married. Meanwhile, on the other hand, there is the term anti-natality, namely inhibiting birth. Cases of low birth rates are usually due to the Family Planning (KB) program, regulations regarding the age limit for marriage, income and the mindset about postponing marriage.

1. Death (Mortality)

Mortality or death is characterized by the loss of signs of life in a person. Mantra (2012) explains that high and low population mortality rates can also be an indicator of health quality.

2. Population Migration

Population migration includes the exit and entry of residents. It is explained that migration is the geographical mobility of the population which includes all population movements that cross certain regional boundaries within a certain period.

B. Demographic Transition

Demographic transition is a description of the population dynamics of a region. The demographic transition theory can also be interpreted as a change in population conditions from high fertility and mortality rates to population growth with low fertility and mortality rates. Therefore, there are three main components in the demographic transition theory, namely birth (fertility), death (mortality), and population movement (mobility).

This theory describes four interconnected proportions which are expressed according to stages according to the growth and changes in population conditions.

a. Stage 1

If the death rate is high in proportion to the birth rate, it results in a growth rate of zero.

b. Stage 2

If the death rate decreases without being accompanied by a decrease in the birth rate, this will result in a positive growth rate that will continue to increase.

c. Stage 3

If the death rate continues and is accompanied by a decreasing birth rate, it will result in positive but decreasing growth.

d. Stage 4

If the death rate and birth rate are also low, the result will be decreasing growth which will eventually reach zero.

C. Population Problems in Indonesia

Indonesia is a country with the 4th largest population after the United States. Apart from its large population, the vastness of the archipelagic country and the unequal distribution of the population means that Indonesia is experiencing more and more problems related to population. Not only that, geographical factors, migration levels, population structure in Indonesia, etc. make population problems increasingly complex and also become something that needs special attention for the benefit of Indonesia's human development. The population problems experienced by Indonesia include:

1. Demographic

a. Large Population (Over Population)

It was previously mentioned at the beginning that Indonesia's population is the fourth largest in the world after respectively China, India, the United States and fourth is Indonesia. The population of Indonesia from the 2010 Census reached 237,641,326 (www.bps.go.id). From year to year the population of Indonesia is increasing. From the 1971-2010 census, Indonesia's population has increased.

From the data below it can be seen how the population of Indonesia is increasing from year to year. This of course has various impacts, both positive and negative. Before discussing population issues, it would be good for us to know the positive impacts first,

including providing labor in natural resource matters, maintaining the integrity of the country from threats originating from other nations, etc.



However, population problems related to large population numbers are a problem that cannot be avoided. Indonesia has various potentials for conflict. The clash between various interests and various other mass organizations makes the problem of population size an obstacle. Apart from that, the most important thing is related to the problem of providing natural resources and various other important needs. Population pressure on the carrying capacity of the environment is a very complicated problem. The interest in building a place to live and space for movement is very important, but on the other hand there are interests related to environmental problems such as river watersheds, water catchment areas, agriculture, provision of natural resources, etc. These two things cannot be separated and both need to receive the same attention for the sake of natural balance.

Apart from that, the problem that arises related to the large population is providing employment opportunities. The need for basic commodities requires people to work and earn a living. However, there are very few job providers. The problem is that residents prefer to depend on work and tend to look for work rather than opening up employment opportunities. This causes a new problem, namely unemployment. If the number of unemployed is high, then the dependency ratio is high so that the country has a large responsibility for its population which can hamper development and cause high levels of poverty.

The large population has a role in various environmental problems and other aspects. A large population certainly requires more space and more needs, but Indonesia's land and territory are not increasing. Therefore, careful planning is very necessary to determine policies related to the large population of Indonesia.

b. High Population Growth Rate

Regarding the high population, of course there are factors that influence it. One of them is the level or rate of population growth. The large rate of population growth causes population growth to increase. The greater the percentage increase, the greater the population. This increase certainly has an impact on Indonesia's population. In determining policy, more and more needs to be taken into consideration, both in terms of providing various facilities and infrastructure, public facilities and most importantly, policies in order to reduce the rate of growth in Indonesia. From there the family planning program emerged and is now handled by the BKKBN.



If you look at the graph above, from year to year Indonesia's population growth rate is decreasing. The increase that occurred was not too high compared to the previous year. However, it would be better if the growth percentage decreased until it reached below 1%. In grouping countries, developed countries always have population growth rates below 1% or even 0%. Considering Indonesia's high population, emphasizing that the rate of population growth can decrease is a good step to maintain the quality of Indonesia's human resources.

If the high rate of population growth continues, there will be various problems including unemployment, declining levels of quality of human resources, crime, employment opportunities, etc. which will have a negative impact on the survival of Indonesian humanity in particular. Therefore, efforts to reduce the growth rate are very important. The programs offered by the government must be supported by the community, such as family planning, use of contraceptives, postponing the age of marriage, etc. so that the population growth rate is expected to decrease.

c. Uneven Population Distribution

Population density is the number of people in an area compared to its area which is calculated as people per km squared. Based on population censuses and population surveys, the distribution of Indonesia's population between one province and another is uneven. In Indonesia itself, there is a concentration of population density centered on the island of Java. Almost more than 50% of Indonesia's population lives in Java. This becomes a problem if the center of government, information, transportation, economy and various facilities are only in one area. The population will try to migrate and this will ultimately have an impact on problems of equitable development.

Factors that cause population distribution:

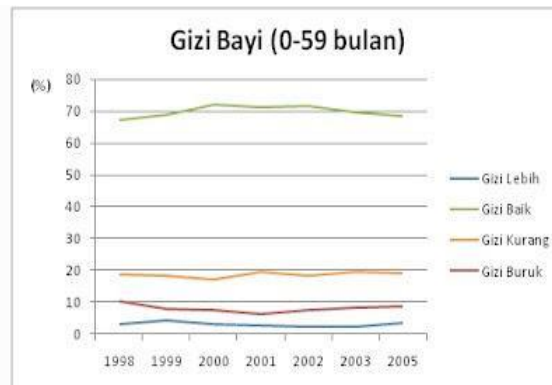
1. The fertility of land, an area or territory occupied by many people, because it can be used as land for farming and vice versa.
 2. Climate, areas that are too hot, too cold and too wet are usually not preferred places to live
 3. Topography or land surface shape in general, many people live in flat areas
 4. Water sources
 5. Transportation or transportation
 6. Facilities and also economic and government centers.
2. Non-demographics are qualitative
- 1) Low Level of Population Health

Efforts to continue to improve the quality of life of Indonesian people continue to be encouraged. However, this problem continues to arise and becomes homework for policy makers to improve the quality of Indonesian people. In terms of health, what will be highlighted in how the level of health is described is the infant mortality rate. The large number of deaths that occur shows the condition of the environment and also the health of the community



From the data above, it can be seen how the decline in the infant mortality rate in Indonesia is calculated based on the number of deaths per 1000 births. This decline shows that efforts to improve the health sector are continuing to improve the quality of life of Indonesian people. The various health services that have been opened, such as immunizations and also posyandu, are certainly a hope for improving current health conditions.

In addition, there is a table that shows the health conditions of babies in Indonesia in 1998-2005. Fulfillment of good nutrition will certainly have a big impact on health if it is related to the baby's ability to survive disease. Fulfilled nutritional needs will increase the body's resistance so that it is more immune to disease. From the graph below, there are still toddlers who experience malnutrition or even malnutrition. This shows that improvements in health still need to be made.



Apart from these indicators, measuring the level of health can also be done by looking at the life expectancy of Indonesian people. In the 2012 Population Data Sheet, the life expectancy of Indonesians was 72 years, while in 2011 the average life expectancy was 71. This shows efforts to increase and improve the quality of Indonesian human health. A high life expectancy indicates a good level of population health. The quality of population health cannot be separated from population income. The higher the population's income, the higher the expenditure on purchasing health services. Residents with high incomes can enjoy quality food that meets health standards.

2) Low Education

Public awareness of education in Indonesia is still relatively low. From the law issued, it can be seen that the Indonesian population's compulsory education is still limited to 9 years, while other countries even set a figure of more than 12 years for education. However, for Indonesia itself, the 9 year mark has not yet been fully implemented and completed considering that there are many islands in Indonesia that are still not reached by various educational facilities. From the HDI (Human Development Index) in 2011, the average education level for Indonesians was still at 5.8 years. From here you can see what the level of education is in Indonesia.

However, the actual level of education is not the only indicator for measuring the quality of human resources in a country's population. HR quality is related to work productivity. People with a high level of education are expected to have high productivity. However, returning to the reality of what is happening in Indonesia, there

are many highly educated people who are still unemployed. Unemployed people become a burden on others. As can be seen in the graph below, the unemployment referred to here is unemployment that occurs because they are in the process of looking for work, preparing a business, feel it is impossible to get a job, and/or already have a job but have not started working. There are figures that show that the highest unemployment rate is among high school/general graduates. This shows that high school equivalent education is not enough to eradicate the number of unemployed in Indonesia. These graduates are still a sign that productivity levels will not increase if education is only limited to this. The need to increase education and non-formal education will certainly help prevent unemployment from accumulating among high school graduates.



If observed, this condition is very worrying. The level of education is expected to be directly proportional to the level of welfare. So that development in the education sector carried out by the government has a significant positive impact on the welfare of the population.

3) Large Number of Poor People



Poverty is also one of the problems that hit Indonesia. Even though Indonesia is not a poor country according to the UN, in reality more than 30 million Indonesians live below the poverty line. What is even more unfortunate is that Indonesia is a country rich in natural resources spread from Sabang to Merauke. But it is truly worrying when we see how poverty is part of the problem in this rich country. In general, the decline in the number of poor people appears to be significant. This is also confirmed by several experts who observed this decline. However, the figure of 30 million is still a problem in itself considering the various global goals that will be achieved in 2015.

Apart from poverty, another problem is that social inequality has become clearly visible in Indonesia. The conglomerates are in power but the government is silent about the existing poverty. It is not surprising that Indonesia has quite a large number of poor people. The question that arises is why Indonesia can become a country whose population is poor even though it is rich, whereas many countries are poor in resources but have become rich countries that rule the world. The answer goes back to human resources. Prosperity is directly proportional to the quality of human resources. The higher the quality of the population's human resources, the higher the level of prosperity. This is proven by countries that are poor in natural resources but have a high level of population prosperity, such as Japan. The lack of attention to Indonesian human resources makes many people suffer. This fact should be the basis for considering the truth of Article 33 of the Constitution. In this case, the prosperity of the people is the main thing that must be taken into account in order to create a completely independent Indonesia.

1. Population grouping which is very important in population science because it is often involved in every discussion of a problem is based on...

- a. gender and age
- b. education level and gender
- c. age and level of education
- d. gender and livelihood
- e. age and livelihood

answer: A. gender and age

discussion:

The most important and basic population data include gender and age.

From population grouping data according to gender, we can find out the sex ratio and this calculation will be able to predict population development in the future. If there are more men than women then population growth will be low, whereas if the opposite is true – there are more women than men then population growth will be high.

Apart from that, grouping the population according to age will display dependency figures which can provide a general picture of the progress or welfare of society in an area. If the population of productive age (15-64 years) dominates, then community welfare will be good, conversely if the number of non-productive age population (0-14 and 65 years and over) is greater then the welfare of a region will be low.

CONCLUSION

Population problems in Indonesia are divided into two, namely demographic which is related to physical/quantitative and non-demographic which is more qualitative. In general, there has been a significant decline in population growth rates, the number of infant deaths and the number of poor people. The existence of various programs to reduce various population problems should be of concern to all parties involved so that improvements in the quality of human resources continue to occur. Apart from that, the government should pay more attention to the policies and legislation that have been made for the welfare of the Indonesian people.

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