Correlation Between the Health of Children Under Five Years and Health Service Readiness at Health Centers in Indonesia: Analysis of Riskesdas 2018 and Rifaskes 2019 Data

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Abstract: Based on the description of the health of children under five years of age from the Riskesdas 2018 data, a sub-index score for the health of children under five was created as one of the IPKM indicators. As for the description of health service readiness for children under five years from the Rifaskes 2019 data, a sub-index of health service readiness for children under five years was created based on the SARA (Service Availability and Readiness Assessment) concept taken in the same year. This study aims to look at the relationship between the health of children under five years of age and the readiness of health services for children under five years of age at community health centers. The research data uses secondary data and is a further analysis of the Riskesdas 2018 data and Rifaskes 2019 data. The design of Riskesdas is cross sectional, while Rifaskes is designed in total coverage. In this study, a correlation analysis has been carried out on the two Research sub-index values. The results of the analysis of the relationship between the health sub-index for children under five years and the health service readiness sub-index for children under five years at community health centers show a p-value = 0.000 (p <0.05), which means that there is a significant relationship, the correlation value r = 0.346, which is a positive unidirectional. There is significant correlation, positive unidirectional between the health of children under five years and the readiness of health services for children under five years at community health centers.

1 INTRODUCTION

Based on data World Bank stated that the infant mortality rate in the world in 2019 reached 28.2 per 1000 live births (Data Bank, 2019). According to reports United National International Children's Emergency Fund (UNICEF), the death rate in the Asian region is 35 deaths, per 1,000 live births (UNICEF, 2020). In Indonesia, the results of the 2017 Indonesian demographic and Health Survey (IDHS) show an under-five mortality rate of 32 per 1,000 live births (SDKI, 2017). In the 2021 Indonesia Health Profile, there were 27,566 under-five deaths ("Profil Statistik Kesehatan 2021," 2021).

The government has made efforts to detect problems as early as possible with children's health,

which can cause health problems and death. Monitoring of the health, growth, and development of children under five is needed, as is their handling at various levels of health services. Public health centers are the first-level health service facility that organizes toddler health efforts in accordance with Minister of Health Regulation No. 43 of 2019 concerning public health centers ("Peraturan Menteri Kesehatan RI No 43 Tahun 2019 Tentang Puskesmas," 2019).

Under-five health service activities at the public health centers that are indicators of improving the health status of under-fives are weighing, measuring body length and height, monitoring development, giving vitamin A (age 6–59 months), completing basic immunization, and providing services for sick under-fives using the Integrated Management of Childhood Illness (IMCI) approach. In 2021, in

Indonesia, the average percentage of children under five who are weighed will be 69% per month. The percentage of children under five whose growth and development were monitored was 69.6%. Meanwhile, the strategic plan target is 70%, which shows that the target of a visit coverage percentage of under-fives is not achieved, whose growth and development are monitored. In 2021, the national complete basic immunization coverage will be 84.2%; this figure also does not meet the 2021 Strategic Plan target, which is 93.6% (*Laporan Riset Fasilitas Kesehatan (RIFASKES) 2019 Puskesmas*, 2019).

Basic health research (Riskesdas) is carried out by calculating the Community Health Development Index (IPKM) as a tool to measure the success of public health development at the provincial and district/city levels. One of the seven indicators measured is under-five health services (Tjandrarini, 2018). The Community Health Development Index (CHDI) from the existing Riskesdas data was then complemented by the existence of a health service facility index from the 2019 Health Facilities Research (Rifaskes) data. In 2021, research will be carried out to assess and monitor the availability of health services and the readiness of the health sector in public health centers in Indonesia by using an assessment tool for health facilities that meet the Service Availability and Readiness Assessment (SARA).

Based on the results of this research, an index of health service facilities, especially public health centers, will be compiled, which will provide an overview of the readiness of health services in districts, cities, and provinces. Among the facilities index, there is a readiness sub-index for service health under five (Hendarwan, 2021). The 2018 Riskesdas data describes the pre-existing health conditions of children under five, and the 2019 Rifaskes data can provide an overview of the state of readiness of the public health centers in providing under-five health services. The study will be carried out based on the under-five health sub-index values from the 2018 Riskesdas research and the under-five health service readiness subindex using the SARA concept from the 2019 Rifaskes research.

2 METHODS

The research data uses secondary data and is a further analysis of the 2018 Riskesdas data and the 2019 Rifaskes data. The 2018 Riskesdas samples analyzed

in this study were children aged 0–59 months, for a total of 93,620 children. The 2019 Rifaskes sample was taken in total coverage. The public health center data used is public health center data as of June 2018 for 9,909 public health centers in 514 districts or cities in 34 provinces in Indonesia. At the time the Riskesdas data collection took place in 2018, the public health centers data had already been set for the 2019 Riskesdas.

The children under five who were sampled in the 2018 Riskesdas were domiciled in the working area of the public health centers that were sampled in the 2019 Riskesdas. The research analysis unit was districts or cities, so this study analyzed a total of 514 districts or cities in Indonesia.

The lowest sub-index value is 0, and the highest is 1. If it is close to 1, it indicates conditions in the district or city are improving; if it is close to 0, it indicates conditions have not improved. The median value is taken, namely 0.50, and an analysis of the mapping of districts and cities that are ≤ 0.50 and > 0.50 is carried out.

In this study, a correlation analysis was conducted to see the relationship between the under-five health sub-index and the under-five health service readiness sub-index.

3 RESULTS

3.1 Mapping the Under-Five Health sub-Index

The value of the under-five health sub-index has been obtained from 514 districts and cities in 34 provinces. From the results of the sub-index values, mapping is made at the provincial level using the digital map method, as shown in Figure 1.

The highest under-five health sub-index score was in DI Yogyakarta Province, which was 0.81, and Bali, which was 0.80. The lowest values are in Papua Province, which is 0.53, and Maluku, which is 0.56. The highest score in the district or city is in Tabanan Regency, Bali Province, at 0.90, and the lowest score is in Paniai Regency, Papua Province, at 0.31. If a mapping analysis is carried out for districts or cities that are ≤ 0.50 and > 0.50, the under-five health sub-index values are 7.0% (36 districts or cities) that are ≤ 0.50 and as many as 93.0% (476 districts or cities) that are > 0.50.
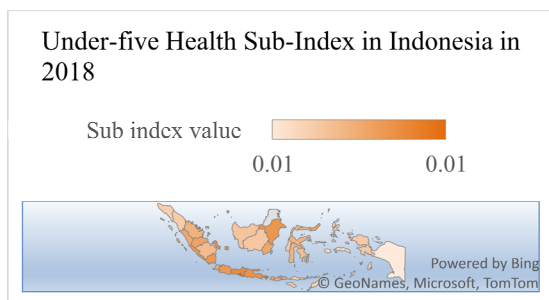
Figure 1: Mapping of the under-five health sub-index in Indonesia in 2018.

3.2 Mapping of Toddler Health Service Readiness Sub-Index

Based on the results of the sub-index values, mapping was made at the provincial level using the digital map method, as shown in Figure 2.

The highest under-five health service readiness sub-index score was in the DI Yogyakarta and Central Java provinces, namely 0.81. The lowest value in Papua Province is 0.69. The highest score in the district or city is Tidore. Islands Regency, North Maluku Province, 0.93, and the lowest score is in Puncak Jaya Regency, 0.39, Papua Province. If a mapping analysis is carried out for districts or cities that are ≤ 0.50 and > 0.50, the sub-index value for under-five health service readiness is 0.4% (2 districts or cities) that are ≤ 0.50 and as many as 99.6% (511 districts or cities) that are > 0.50.
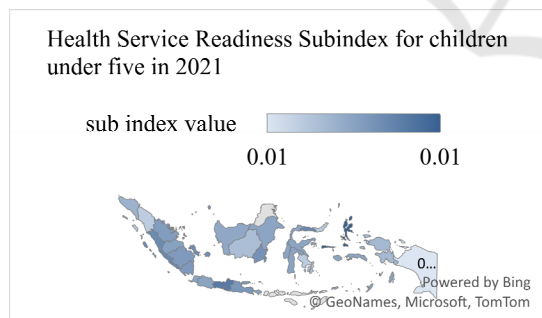

Figure 2: Mapping the sub-index of readiness for children under five in health services in Indonesia in 2021.

The results of the analysis of the relationship between the independent variable, namely the under-five health sub-index, and the dependent variable, namely the under-five health service readiness sub-index, used the correlation test shown in table 1 below.

Table 1: The relationship between the children under five health sub-index and the service readiness sub-index for children under five health.

Independent variables	Dependent variables	Significance (*p-value*)	Correlation coefficient (*r*)
1	2	4	5
Health sub-index for children under five years	Health Service Readiness Sub-Index for Children Under Five Years Old	0.000	0.346

The results of the analysis of the relationship between the under-five health sub-index and the under-five health service readiness sub-index at the public health centers obtained p-values of 0.000 <0.05, meaning that there is a significant relationship (correlation). With the correlation coefficient (r) of 0.346 > r table 0.088, it can be concluded that there is a relationship (correlation). The correlation coefficient has a low value, so the relationship is weak. The correlation coefficient number is positive, so the relationship between the two indicators is unidirectional. Thus, it can be interpreted that increasing the readiness of health services can improve the health of children under five.

The degree of health is influenced by environmental factors, behavioral factors, health service factors, and genetic factors (heredity) ("Teori H.L.BLUM," n.d.). In other research, it is stated that, apart from environmental factors and health service factors, economic factors and maternal education factors influence the level of health in society (Handayani, 2014).

Utilization of health services is influenced by age and health care coverage (Logen, Y., & Balqis, 2015). Apart from that, the influence of the work, knowledge, and attitudes of mothers is also related to health services for children under five (Sumarni & Prabandari, 2021).

4 DISCUSSION

Increasing the availability of facilities and infrastructure or health service facilities and the readiness of services according to standards can support the fulfillment of the quality of health services and the health status of children under five (Suparmi et al., 2018). The results of this study are in accordance with Liu, L., et al. (2019) stated that better

facilities would be associated with higher opportunities for utilization of child health services. The higher the health service readiness sub-index value, the higher the under-five health sub-index value. Improving the quality of health care facilities can provide a way to encourage higher utilization of health services so as to reduce child morbidity and mortality (Liu et al., 2019). Strengthening the health system in the form of human resources (HR), laboratories, and equipment, as well as the provision of medicines, is urgently needed at the public health centers (Parameswaran & Agrawal, 2019).

5 CONCLUSION

There is a relationship between children's health and the readiness of children's health services at health centers in Indonesia.

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