

COMPARATIVE ANALYSIS OF UNMET NEED SERVICES IN HEALTH IN INDONESIA IN 2020 AND 2023

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ABSTRACT

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Data from the Central Statistics Agency (BPS) shows that the percentage of unmet need for health services in Indonesia decreased from 6.09% in 2020 to 5.22% in 2023, with a decrease of 0.87 percentage points. Unmet need refers to an unmet need for health services, caused by factors of accessibility, availability, cost, or awareness. This study aims to identify changes in the availability and accessibility of health services during this period. The results show that there is a significant gap between the western provinces (Java and Sumatra), which have improved access and quality of health services, and the eastern provinces (Papua and Maluku), which still lack medical facilities and personnel. 2023 shows an increase in the number of medical personnel in urban areas, but uneven distribution is still a problem, especially in rural and remote areas. This study uses a

quantitative method with an independent t-test. In conclusion, despite the overall decline in unmet demand, the gap between urban and rural areas and between the western and eastern parts of Indonesia remains significant.

Keywords: *Unmet Need, Health Services, Inequality, Indonesia*

INTRODUCTION

The comparison between the number of people who have health complaints and are disrupted but do not receive road maintenance and the number of people is known as the need for unmet health services or the percentage of people who have health complaints and are disrupted but do not receive road maintenance. This percentage is expressed in percent. In the context of health, unmet need is defined as a situation in which a person or group of people does not get the health services they should get or only receives services that are not up to standard. Some factors that can cause unmet needs include limited access to

health facilities, health facilities that do not meet standards, unaffordable treatment costs, or the existence of health facilities that do not meet standards. The consequences of this unmet need not only have an impact on the health of individuals, but also affect the quality of life of families and even the dynamics of society at large. In providing health services to the community, the concept of "health services" is used. According to the definition of Levey and Loomba (1973), "health services" are efforts made by individuals or collectively within an organization to maintain and improve

health, prevent and cure diseases, and restore the health of individuals, families, groups, or communities.

According to data collected by the Central Statistics Agency (BPS), the pattern of meeting health service needs in Indonesia varies between provinces. In general, provinces outside Java have a higher level of health service needs compared to provinces on Java. This can be due to several things, such as less infrastructure and more difficult access to public health facilities. In terms of poverty level, provinces outside Java generally have a higher poverty rate, so it is difficult for people to reach health services. This study aims to evaluate the spatial distribution of unmet need for health services in provinces in Indonesia and map areas with high and low levels of unmet need using the T-dependent Statistical Test.

LITERATURE REVIEW

Service

One of the main human needs is health; Without it, human life becomes meaningless because it cannot carry out daily activities properly. Without health, human life becomes meaningless because it cannot carry out daily activities properly. With health, humans can carry out all activities. Maintaining personal health can be done by maintaining the cleanliness of the environment so that diseases that can attack do not arise. In addition, the person who is sick (the patient) has no other choice but to seek help from a health worker who can cure his disease; These health workers will carry out health efforts by providing health services.

People who are sick urgently need health services. According to Health Law No. 23 of 1992, health is defined as a state of well-being of the body, soul, and society that allows everyone to live productively socially and economically. According to Hodgetts and Casio, there are two types and forms of health services. The first is health services. This is included in the medical service group. It can be organized

independently (solo practice) or together in one organization (institution). The main goal is the cure of diseases and the restoration of health, with a focus on the individual and the family. Public Health Services: Health services in public health service groups are usually organized together in one organization.

According to Levey and Loomba, health services are efforts made individually or collectively in an organization to maintain and improve health, prevent, and cure diseases, and restore the health of individuals, families, groups, or communities. Therefore, health services are part of the health care system, and the main goals are promotive (maintaining and improving health), preventive (preventing), and curative (treating).

However, in general, there are three categories of health services:

- a. Primary Health Service: Basic Health Service that is urgently needed by the community and has strategic value to improve the degree of public health. This is usually an ambulatory (outpatient service).
- b. Secondary Health Services: outpatient health services.
- c. Tertiary Health Service: This is a more complex type of health care and requires a subspecialist workforce.

To be considered a good health service, it should meet two main requirements:

- a. Available and sustainable: Services must be available in the community (provided) and continuous (sustainable), so that all types of health services employed by the community are not difficult to find and available whenever needed.
- b. Acceptable and reasonable (acceptable and worthy): The service is reasonable and does not conflict with the culture, customs, or beliefs and beliefs of the community.
- c. Easy to reach (accessible): Arrangement of the distribution of health facilities is essential to ensure good health services. Good health

services are not available in rural areas and are too focused on urban areas. Health services can be defined as services carried out by both individuals and groups to improve the health of individuals and/or communities by recovering and curing them from diseases and improving public

health. In its implementation, health services must meet several important conditions, such as being available and sustainable, acceptable and reasonable, and easy and accessible.

RESEARCH METHODS

Normality Test

The normality test is a statistical technique to determine whether the sample data comes from a population with a normal distribution, which is defined as a symmetrical bell distribution with the same mean, median, and mode. Normality tests are often used in quantitative research to examine whether the assumptions that underpin some statistical analysis methods, such as hypothesis testing, regression analysis, and t-tests, are met by the observed data. The normality test is important because many parametric statistical tests, including the T-test, assume

that the data follows a normal distribution. If the assumption of normality is not met, the results of the statistical analysis may be invalid or inaccurate.

Some tests to determine whether the data have a normal distribution include the Kolmogorov-Smirnov test, the Anderson-darling test, and the Shapiro-Wilk test. After conducting a normality test on the data, we can identify whether the data in the column is constructed normally by checking the probability and finding the equivalent value on a test with a certain level of confidence (usually 95%) that corresponds to the amount of data we need.

Table 1. Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Unmet Health Services in 2020	34	100.0%	0	0.0%	34	100.0%
Unmet Health Services in 2023	34	100.0%	0	0.0%	34	100.0%

The table compares the number of valid cases and missing cases for unfulfilled health services in 2020 and 2023. For the

two years, all 34 cases were valid with 100% validity, and no cases were lost (0%).

Table 2. Descriptives

		Statistics	Std. Error	
Unmet Health Services in 2020	Mean	478.7353	33.63536	
	95% Confidence Interval for Mean	Lower Bound	410.3036	
		Upper Bound	547.1669	
	5% Trimmed Mean	485.6046		
	Median	476.0000		
	Variance	38465.473		
	Std. Deviation	196.12617		
	Minimum	7.00		
	Maximum	854.00		
	Range	847.00		
	Interquartile Range	187.50		
	Skewness	-.741	.403	
	Kurtosis	.921	.788	
	Unmet Health Services in 2023	Mean	523.3529	27.74906
95% Confidence Interval for Mean		Lower Bound	466.8970	
		Upper Bound	579.8088	
5% Trimmed Mean		523.4771		
Median		528.0000		
Variance		26180.357		
Std. Deviation		161.80345		
Minimum		75.00		
Maximum		904.00		
Range		829.00		
Interquartile Range		134.25		
Skewness		-.200	.403	
Kurtosis		1.586	.788	

This table shows descriptive statistics for unmet health service data in 2020 and 2023. The following statistics were given for the two years, namely, mean, standard error, median, confidence interval, variance, standard deviation, minimum, maximum, range, interquartile range, skewness, and kurtosis.

In the table, there is an increase in the average unmet health services from 2020 to 2023, indicating an increase in unmet needs in health services. Although the averages

increased, the variation and spread of the data (standard deviation and variance) decreased in 2023 compared to 2020, indicating more consistent data in 2023. The distribution of data in 2023 is more skewed to the right with a sharper peak than in 2020, suggesting more low extreme values in 2023. Overall, there was an increase in the average unmet value of health services, but with more satisfactory variation and distributing data showing more low scores in 2023 than in 2020.

Table 3. Test of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
Unmet Health Services in 2020	.139	34	.093	.941	34	.064
Unmet Health Services in 2023	.126	34	.189	.957	34	.194

1. Lilliefors Significance Correction

The table shows the results of the two samples tested for normality, at the normality of Kolmogorov-Smirnov and Shapiro-Wilk, for Unmet Health Services data in 2020 and 2023.

1. Kolmogorov-Smirnov test

In 2020, the Sig value (0.093) > 0.05, this shows that the data did not differ significantly from the normal distribution. For 2023, the value of Sig. (0.189) > 0.05, also indicates that the data is normally distributed, thus indicating that the data can be considered normal.

2. Shapiro-Wilk Test

In 2020, the value of Sig. (0.064) was close to 0.05, but remained above it, so the data can be considered not significantly different from the normal distribution. For 2023, the Sig. (0.194) value > 0.05, indicating that the data did not differ significantly from the normal distribution.

Normality Test Method

1. Kolmogorov-Smirnov Test (K-S): Comparing the distribution of sample data with the normal distribution, Less sensitive for small samples.
2. Shapiro-Wilk Test: Highly effective for small to medium samples. It is often considered stronger than the K-S test.
3. Histogram: A bar graph that shows the distribution of data. Provides an initial visualization of whether the data is normally distributed.
4. Q-Q Normal Plot (Quantile-Quantile): Compares the quantile of the sample data with the quantile of the normal distribution. If the data is normally distributed, the dots will follow a diagonal line.
5. Anderson-Darling Test: Measures the extent to which the data deviates from the normal distribution. More sensitive to data at the tail of the distribution.

A data is called normal in a normality test if the test results show that the data follows a normal distribution. The data is considered normal if the p-value is greater than 0.05 then the data follows a normal distribution,

and if the p-value is less than 0.05 then the data is abnormally distributed.

Based on the results of the two normality tests above in Table 1.3, it can be seen that the unmet data for health services for 2020 and 2023 is distributed normally because the p-value is more than 0.05. These results support the use of statistical techniques that assume the normality of the data, namely the T-test for further analysis.

Uji T-test

T-test is a statistical method used to compare two samples or populations based on the mean. In an experiment, the T-test is usually used to evaluate the difference between two groups, such as the experimental and control groups.

Types of T-Test:

1. Single-sample T-test: Tests whether the average of a population is equal to a known value.
2. Two-sample T-test: Comparing the averages of two different groups to determine if there is a significant difference between them.

The T-test relies on several assumptions, such as the normality and homogeneity of the variant. Therefore, an examination of assumptions must be carried out before carrying out the T-test. In the fields of social, economic, and health sciences, the T-test is often used to test research hypotheses. The T-test of the two samples is divided into two:

1. Paired T-test: Used to compare two measurements on the same subject, e.g. test results before and after the intervention on the same individual. This test compares the difference in measurement values with zero to determine the significance of the difference.
2. Unpaired T-test: Used to compare the average of two different groups, for example, test scores between the control group and the experiment. This test compared the averages of the two groups to determine the significance of the differences.

The T-Statistical Test, also known as the T-test, was performed with a significance level of 0.05 ($\alpha=5\%$). The following criteria are used to determine the acceptance or rejection of a hypothesis:

1. If the significant value > 0.05 , then the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected. This shows that the independent variable does not affect the dependent variable significantly partially.
2. If the significant value < 0.05 then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. This indicates that the dependent variable is significantly affected by the partially independent variable.

The formula of the t-test is as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2} - 2r\left(\frac{S_1}{\sqrt{n_1}}\right)\left(\frac{S_2}{\sqrt{n_2}}\right)}}$$

Information:

- \bar{x}_1 : Average of the first sample
- \bar{x}_2 : Average of the second sample
- s_1 : Standard deviation of the first sample
- s_2 : Standard deviation of the second sample
- n_1 : First sample size
- n_2 : Second sample size

- S_1^2 : variance of the first sample
- S_2^2 : Second sample variance
- r : Correlation between two samples

Hypothesis

1. Hypothesis Zero (H_0)

$$H_0 = \mu_{2020} = \mu_{2023}$$

There was no significant difference in the unmet need for health services in 34 provinces in Indonesia in 2020 and 2023.

2. Alternative Hypothesis (H_1)

$$H_1 = \mu_{2020} \neq \mu_{2023}$$

There is a significant difference in the unmet need for health services in 34 provinces in Indonesia in 2020 and 2023.

DATASET

In this study, an in-depth analysis of unmet need data in health services in 34 provinces in Indonesia in 2020 and 2023. This approach includes a thorough evaluation of the data to understand the extent of unmet health service needs, this analyst also involves data visualization to give a clearer picture by using SPSS conducted an independent T-test and a normality test to evaluate significant differences between the two year.

Table 4. Unmet Need for Health Services In Province In Indonesia In 2020 & 2023

Province	Unmet Need for Health Services in 2020	Unmet Need for Health Services in 2023
ACEH	4,33	5,79
NORTH SUMATRA	4,75	5,15
WEST SUMATRA	4,13	4,67
RIAU	4,63	5,29
JAMBI	4,48	5,93
SOUTH SUMATRA	5,36	4,53
BENGKULU	5,14	5,92
LAMPUNG	5,42	5,51
BANGKA BELITUNG DISTRICT	4,31	4,87

RIAU DISTRICT	2,61	4,33
JAKARTA	3,93	3,29
WEST JAVA	5,87	4,96
CENTRAL JAVA	5,83	5,43
IN YOGYAKARTA	3,9	4,13
EAST JAVA	5,28	5,12
BANTEN	7	5,27
BALI	2,96	2,75
WEST SOUTHEAST NUSA	7,68	9,04
EAST EAST NUSA	7,03	7,5
WEST KALIMANTAN	5,93	7,23
CENTRAL KALIMANTAN	6,06	5,72
SOUTH KALIMANTAN	6,55	5,82
EAST KALIMANTAN	3,39	4,62
NORTH KALIMANTAN	4,62	5,97
NORTH SULAWESI	4,68	5,38
CENTRAL SULAWESI	7,52	6,28
SOUTH SULAWESI	5,66	4,92
SOUTHEAST SULAWESI	8,54	6,83
GORONTALO	6,03	8,72
WEST SULAWESI	6,84	6,79
MALUKU	4,38	6,51
NORTH MALUKU	4,77	4,79
WEST PAPUA	3,33	2,97
PAPUA	2,7	2,66

In this study, data on unmet needs in health services from 34 provinces in Indonesia in 2020 and 2023 were analyzed in depth. The data includes various indicators such as the number of people who do not have access to adequate health services, the level of availability of health facilities, and the quality of services provided. Each province is analyzed to assess the extent of unmet health service needs. Using SPSS software,

an independent T-test was carried out to evaluate significant differences between health service unmet in 2020 and 2023 in each province. However, before conducting the T-test, a normalist test is carried out first to ensure that the data distribution meets the necessary assumptions, if the data is not distributed normally, then data transformation is carried out or using a non-parametric test as an alternative.

RESULTS AND DISCUSSION

Table 5. Group Statistics

	Provincial Health Service Unmet in 2020	N	Mean	Std. Deviation	Std. Error Mean
Unmet Service in 2023	UNMET Health Services in 2020	34	478.7353	196.12617	33.63536
	Unmet Health Services in 2023	34	523.3529	161.80345	27.74906

Table 6. Independent Samples Test

	Levene's Test for Equality of Variances		T-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
Unmet Health Services (2020)	0.926	.339	-1.023	66	.310	-44.61765	43.60445	-131.67674	42.44144	
Unmet Health Services (2023)			-1.023	63,700	.310	-44.61765	43.60445	-131.73546	42.50017	

The results of the Independent T-test presented in the figure above aim to compare the average of 2 different groups, namely the Unmet Health Services group in 2020 and 2023. Let's discuss it in detail.

Group Statistics

This section shows the descriptive statistics for the two groups compared:

- a. Unmet Health Services in 2020
 - N (Number of Samples): 34
 - Mean (average): 478.75
 - Standard Deviation: 196.12
 - Standard Error Mean (Average Standard error): 33.63
- b. Unmet Health Services in 2023
 - N (total samples): 34
 - Mean (average): 523.35
 - Standard Deviation: 161.80
 - Standard Error Mean (Average Standard error): 27.75

Independent Sample Test

This section consists of 2 main tables, namely Levene's Test for Equality of Variances and T-test for Equality of Means.

a. Levene's Test for Equality of Variances

- F: 0.926
- Sig: 0.339

The Levene test was used to test the null hypothesis that the variance of both groups is the same. The significance value (Sig) of 0.339 is greater than 0.05 which means we fail to reject the null hypothesis and the equivalence assumption of variance is met.

b. T-test for Equality of Means

The results of this T test show:

1. Equal Variance's Assumed
 - t: -1.023

- f: 66
 - Sig (2-tailed): 0.310
 - mean difference: -44.61765
 - Standard Error Difference: 43.60445
 - 95% confidence interval of the difference: -131.67674 to 42.44144
2. Equal Variance's not assumed
 - t: -1.023
 - DF: 63,700
 - Sig (2-tailed): 0.310
 - mean difference: -44.61765
 - Standard Error Difference: 43.60445
 - 95% confidence interval of the difference: -131.67674 to 42.44144

Interpretation of Results

The significance of the T Test Result (sig. 2 tailed) i.e. the p value (sig 2 tailed) is 0.310, which is greater than 0.05 this means that there is not enough evidence to reject the zero hypothesis that the average unmet health service between 2020 and 2023 is significantly different. The mean difference between the 2 groups was -44.61765, which means that the average unmet health service in 2023 is slightly higher than in 2020 but this difference is not statistically significant. In the 95% confidence interval for the mean difference is from -131.67674 to 42.44144 (assuming the variance is the same) or -131.73546 to 42.50017 (assuming the variance is not the same) since this interval covers zero, it includes the result that the mean difference is not significant.

CONCLUSION

The purpose of this study is to compare the Unmet Need for Health Services in 2020 and 2023 to find out if there is a difference between the two data. The results of the study show that Unmet Need for Health Services in 2020 and 2023 is classified as no difference. In the Normality Test stage, the data showed a normal distribution and

based on the results of the Independent T-test there was no significant evidence to state that there was a difference in the average unmet health services between 2020 and 2023. With a p value greater than 0.05 and a confidence interval that includes zero, we conclude that the average health service unmet in the two years is statistically similar.

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