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Factors Related to Complete Basic Immunization of Infants during Covid-19 Pandemic at Gunung Kaler Public Health Center, Tangerang District in 2021

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ABSTRACT
Approximately 2 to 3 million mortality rate can be prevented through Immunization every year. However, there were about 19.4 million infants in the world who still missed the complete basic immunization. During the Covid-19 pandemic, many mothers were afraid to bring their children to receive immunization even though it has an important role in meeting the children's needs, especially children at the age 0-5 years old. This research was conducted aiming to determine the factors associated with giving complete basic immunization to infants during Covid-19 pandemic at Gunung Kaler Public Health Center, Tangerang District in 2021. This research was a descriptive correlation study using purposive sampling method. The sampling further obtained 91 mothers who had babies at the age of 9-12 months old. The research instrument used was a questionnaire, while the statistical test used was chi-square. The results of this study indicated that there was a relationship between knowledge, attitudes, beliefs, sources of information, and health care support with providing complete basic immunization to infants during Covid-19 pandemic at Gunung Kaler Public Health Center, Tangerang District in 2021. It was found that 60.4% of children at the age of 9-12 months old did not receive complete basic immunization during Covid-19 pandemic at the Gunung Kaler Health Center, Tangerang District. It is expected that Gunung Kaler Health Center in Tangerang District can improve KIA services during Covid-19 pandemic by maximizing the provision of health education to carry out immunization during the pandemic.

Keywords: Complete Basic Immunization, Knowledge, Attitudes, Beliefs, Information Sources, Health Care Support

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BACKGROUND

Millenium Development Goals (MDGs) describes the improvement of human quality in a country internationally. One of the goals of the MDGs is to reduce 2/3 of the infant mortality rate under the age of five years old from 1990 to 2015. Immunization program plays a very important and strategic role to achieve the MDGs goal (Yuliana, 2018). In Indonesia, infant mortality rate is still a big challenge in health development efforts. In recent years, Indonesia has made significant progress in reducing infant mortality. However, the infant mortality rate in Indonesia is still relatively high compared to other ASEAN member countries (Ministry of Health, Republic of Indonesia, 2017).

Most infants mortality occurred due to preventable causes, such as infectious diseases (UNICEF, 2020). Tuberculosis (TB) is still the main cause of children morbidity and mortality in the world (Kartasasmita, 2016), while in Indonesia, the main cause according to the Indonesian Children's Doctors Association (IDAI) is still measles. Infectious diseases such as measles and tuberculosis are two of several infectious diseases that can be prevented by immunization. According to WHO, an effort that can be done to reduce the infant mortality rate is to provide immunization. The immunization program launched by the Ministry of Health is one of the preventive efforts to prevent certain diseases, called Diseases That Can Be Prevented By Immunization (PD3I), including tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, polyodan measles (Dwi Ghunayanti Novianda & Mochammad Bagus, 2020).

Immunization is one of the most effective public health interventions to decrease illness and mortality in the community. The purpose of the Ministry of Health in implementing the Immunization Development Program (PPI) in children is to decrease the incidence of children suffering from disease. Immunization is one of the methods to prevent infectious diseases, especially diseases that can be prevented by immunization (PD3I). Immunization is also one of the most cost-effective disease preventive interventions from a financial perspective. Each country has a different immunization program, depending on the priority of their health problems. Immunization is determined according to expert studies and epidemiological analysis of common diseases. In Indonesia, the immunization program requires every baby (aged 0-11 months) to receive complete basic immunization consisting of 1 dose of Hepatitis B, 1 dose of BCG, 3 doses of DPT-HB-Hib, 4 doses of polio drops, and 1 dose of measles (Pusdatin , 2016).

Furthermore, Indonesia is currently encountering covid-19 pandemic which has a quite serious impact on the administration of the immunization program, especially regular immunization in Indonesia. This condition causes immunization services to not being implemented during the pandemic period. In fact, children health can be affected negatively if they do not receive immunization regularly (Ministry of Health of RI, 2020a). In Indonesia, Covid-19 affected the immunization program, indicated by a decrease of 10-40% in vaccination coverage for some PD3Is in March-April 2020 compared to March-April 2019. This could lead to additional health crises (extraordinary events of PD3I) which results in increased morbidity and mortality, and a burden to the country (Felicia & Suarca, 2020).

Even though the complete basic immunization coverage in Indonesia has always been above 85% in the last five years, however, it has not yet reached the target of the Ministry of Health's Strategic Plan. In 2018, complete basic immunization in Indonesia was 90.61%. This figure is slightly below the 2018 Strategic Plan target of 92.5% (Ministry of Health of RI, 2019).

Banten is one of the provinces in Indonesia with immunization coverage above the national target of 91.73% in 2018 (Ministry of Health of RI, 2019). Complete basic

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immunization coverage in Tangerang District in 2018 was 94.3%, this coverage was greater than in 2017 which was 93.4%. However, PD3I cases were found in 2018, those are 5 cases of Tetanus Neonatorum, 46 cases of Measles, and 91 cases of diphtheria (Tangerang District Health Office, 2018).

Gunung Kaler Public Health Center is one of Public Health Centers in Tangerang District. Based on the data issued by Tangerang District Health Office, the complete basic immunization coverage of Gunung Kaler Public Health Center was in the 5th lowest position in 2018, which was 89.1%. This number is still far from the national target for achieving the UCI which should be 95%. In 2017-2019, the coverage of complete basic immunization at Gunung Kaler Public Health Center was 87.3%, 86.1%, and 89.1%, respectively. This coverage increase is considered insignificant because there were still many babies who have not received complete and timely basic immunization before the age of 12 months. Furthermore, this coverage even decreased to 88.7% in January-October 2020. One of the causes of this decrease is Covid-19 Pandemic.

According to a preliminary study that was carried out on November 25, 2020 involving 10 mothers who had babies in the working area of the Gunung Kaler Public Health Center, 8 mothers said that they did not provide basic immunizations to their babies during COVID-19 pandemic. All of them claimed that they did not know that immunization service was provided during the pandemic, 4 of them said that they were worried that the child had a fever and the child had a cold coughing condition so that they delayed immunization, 5 of them did not know the immunization schedule during the Covid-19 pandemic, and 4 of them said that health workers did not visit and provide information on immunization services during the Covid-19 pandemic.

Based on the above background, the researchers were interested in conducting research entitled "Factors Related to Complete Basic Immunization Provision to Infants during Covid-19 Pandemic at Gunung Kaler Public Health Center, Tangerang District in 2021".

METHODS

This research was conducted through a quantitative research project with a descriptive correlational research design using a cross-sectional approach as the analytical method. This research involved a population consisting of mothers who have children aged 9-12 months living in the working area of Gunung Kaler Public Health Center, Tangerang District. The samples involved were 118 mothers who have children aged 9-12, in which 91 mothers who have babies aged 9-12 months at Gunung Kaler Health Center, Tangerang District, were chosen as the research respondents through purposive sampling. Data collection tools used were questionnaires and observation forms.

RESULTS

Univariate Analysis

Table 4.1. Frequency Distribution of Complete Basic Immunization, Knowledge, Attitude, Belief, Information Sources, and Support from Health Workers for Infants during COVID-19 Pandemic at Gunung Kaler Public Health Center, Tangerang District, in 2021

Variable	Number	Percentage
Complete Basic Immunization		
Complete	36	39.6
Incomplete	55	60.4

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Knowledge		
Good	28	30.8
Poor	63	69.2
Attitude		
Positive	59	64.8
Negative	32	35.2
Belief		
Positive	60	65.9
Negative	31	34.1
Information Sources		
Good	35	38.5
Poor	56	61.5
Health Workers Support		
Supportive	51	56
Not Supportive	40	44

Table 4.1 above shows that among 91 babies, most of them did not receive complete basic immunization by 55 babies (60.4%), while the remaining 36 babies (39.6%) received complete basic immunization. Furthermore, most of the mothers (69.2%) did not have good knowledge, while the remaining 28 mothers (30.8%) had good knowledge. Most of the mothers also had a positive attitude by 59 mothers (64.8%), while the remaining 32 mothers (35.2%) had negative. In addition, 60 mothers (65.9%) had a good belief, while 31 mothers (34.1%) had poor belief. As many as 56 mothers (61.5%) obtained poor information while the remaining 35 mothers (38.5%) obtained good information. Lastly, as many as 51 mothers (56.0%) received support from the health workers, while the remaining 40 mothers (44.0%) did not receive support from the health workers.

Bivariate Analysis

Table 4.2
Relationship between Knowledge and Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021

Knowledge	Complete Basic Immunization Provision				Total		*P*	
	Complete		Incomplete				*Value*	*OR*
	(n)	(%)	(n)	(%)	(n)	(%)		
Good	16	57.1	12	42.9	28	100.0	0.03	4.17
Poor	20	31.7	43	68.3	63	100.0		
Total	36	39.6	55	60.4	91	100.0		

Based on table 4.2, it was found that among 28 respondents who had good knowledge, most of them received complete immunization by 16 people (57.1%) and among 63 respondents who had poor knowledge, most of them did not receive complete immunization by 41 people

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(68.3%). This analysis result obtained p-value of 0.03 (<0.05), indicating that there was a significant relationship between knowledge and the provision of complete basic immunization during Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. Meanwhile, the OR (Odd Ratio) value obtained was 4.17 so that it can be considered that respondents who had poor knowledge had 4.17 times more risk of not receiving complete basic immunization for their infants

Table 4.3. Relationship between Attitude and Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021

Attitude	Complete Basic Immunization Provision				Total		*P*	
	Complete		Incomplete				*Value*	*OR*
	(n)	(%)	(n)	(%)	(n)	(%)		
Positive	17	28.8	42	71.2	59	100.0	0.00	2.28
Negative	19	59.4	13	40.6	32	100.0		
Total	36	39.6	55	60.4	91	100.0		

Table 4.3 above presents that among 59 respondents who had a positive attitude, most of them did not receive complete immunization by 42 people (71.2%) and among 32 respondents who had negative attitude received complete immunizations by 19 people (59.4%). These analysis results showed that the p-value obtained was 0.00 (<0.05), which means that there was a significant relationship between Attitude and Complete Basic Immunization during Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. Furthermore, the OR (Odd Ratio) value obtained was 2.28 so it can be stated that respondents who had a negative attitude had 2.28 times more risk of not receiving complete basic immunization for their infants.

Table 4.4. Relationship between Belief and Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021

Belief	Complete Basic Immunization Provision				Total		*P*	
	Complete		Incomplete				*Value*	*OR*
	(n)	(%)	(n)	(%)	(n)	(%)		
Positive	21	35.0	39	65.0	60	100.0	0.02	3.35
Negative	15	48.4	16	51.6	31	100.0		
Total	36	39.6	55	60.4	91	100.0		

Based on table 4.4, it was found that among 60 respondents who had positive beliefs, most of them did not receive complete immunization by 39 people (65.0%), and among 31 respondents who had negative beliefs, most of them also did not receive complete immunization by 16 people (51.6%). The analysis results showed that the p-value obtained was 0.02 (<0.05), which means that there was a significant relationship between belief and the provision of complete basic immunization during Covid-19 Pandemic at Gunung Kaler Health Center in 2021. The OR (Odd Ratio) value obtained was 3.55 so it can be stated that

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respondents who had negative beliefs had 3.55 times more risk of not receiving complete basic immunization for their infants

Table 4.5. Relationship between Source Information and Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021

Information Source	Complete Basic Immunization Provision				Total		*P Value*	*OR*
	Complete		Incomplete		(n)	(%)		
	(n)	(%)	(n)	(%)				
Good	20	57.1	15	42.9	35	100.0	0.00	3.33
Poor	16	28.6	40	71.4	56	100.0		
Total	36	39.6	55	60.4	91	100.0		

Table 4.5 above shows that among 35 respondents who got good sources of information, were mostly received complete immunizations by 20 people (57.1%) and among 56 respondents who received poor information sources, the majority did not get complete immunizations by 40 people (71.4%). The results of the analysis showed that the p-value obtained was 0.00 (<0.05), which means that there was a significant relationship between information sources and the provision of complete basic immunization during Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio) value obtained was 3.33 so it can be stated that respondents who obtained poor sources of information have3.33 times more risk of not receiving complete basic immunization for their infants

Table 4.6. Relationship between Health Workers' Support and Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021

Health Workers' Support	Complete Basic Immunization Provision				Total		*P Value*	*OR*
	Complete		Incomplete		(n)	(%)		
	(n)	(%)	(n)	(%)				
Supportive	14	26.4	39	73.6	51	100.0	0.04	2.39
Not supportive	22	57.9	16	42.1	40	100.0		
Total	36	39.6	55	60.4	91	100.0		

Based on table 4.6 above, among 51 respondents who received support from the health workers, the majority did not receive complete immunization by 39 people (73.6%) and among 40 respondents who did not receive support from the health workers, most of them received complete basic immunization by 22 people (57.9%). The results of the analysis showed that the p value obtained was 0.04 (<0.05), which means that there was a significant relationship between health workers' support and complete basic immunization during Covid-19 pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio)

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value obtained was 2.39 so it can be stated that respondents who did not receive support from the health workers has 2.39 times more risk of not receiving complete basic immunization for their infants.

DISCUSSION

Univariate Analysis

Complete Basic Immunization Provision

The results showed that among 91 infants, 55 of them did not receive complete basic immunization (60.4%) while the remaining 36 infants received complete basic immunization.

According to the book of Immunization and Vaccination (Proverawati), immunization is a program that deliberately includes weak antigens to stimulate antibodies out so that the body can be resistant to certain diseases (Proverawati et al., 2016). Basic immunization is the initial immunization to achieve immunity levels above the protective threshold. Meanwhile, advanced immunization is repeat immunization to maintain immunity levels above the protective threshold or to extend the period of protection (Mulyani et al., 2018).

The results of this study are in line with research conducted by Triana (2015) which claimed that knowledge, attitudes, and motivation of parents as well as information about immunization are factors that affect the frequency of basic immunization in infants, therefore it is recommended to health workers to improve health promotion, especially about immunization. This is supported by research done by Maimunah (2018) that at the UPTD Public Health Center of Setia Mulya in 2018, there was a relationship proven between age, education, parity, sources of information, and support from health workers with maternal knowledge about complete basic immunization at UPTD Public Health Center Setia Mulya March 2018 with a p-value of less than 0.05. Based on the results of statistical tests using the chi-square test, it obtained p-value of 0.000 where the p-value was <0.05, so it can be concluded that there was a significant relationship between age and mothers' knowledge about complete basic immunization in infants at UPTD Public Health Center of Setia Mulya in 2018.

Bivariate Analysis

1. Relationship between Knowledge and Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District in 2021

   Based on table 4.2, it was found that among 28 respondents who had good knowledge, the majority of them received complete immunization by 16 people (57.1%) and among 63 respondents who had poor knowledge, the majority of them did not receive complete immunization by 41 people (68.3%). The results of the analysis showed that the p-value obtained was 0.03 (<0.05), which means that there was a significant relationship between knowledge and the provision of complete basic immunization during the Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio) value obtained was 4.17 so it can be stated that respondents who had poor knowledge had 4.17 times more risk of not giving complete basic immunization to their children.

   This is in line with the results of research conducted by Syukuriyah (2019), in which its statistical analysis of respondents' knowledge variables obtained a p-value of 0.000 (p <0.05), which means that there was a significant relationship between maternal

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knowledge and basic immunization for children under five years old in Purwajaya Village, Krangkeng Sub-District, Indramayu District in 2019. Knowledge about immunization includes knowing the meaning of immunization, types of immunization, and the number of immunizations. Through sufficient knowledge, it is expected that it can influence the actions of a mother in giving complete immunization to her child according to the results of Chi-Square test. Since the p-value obtained was 0.000 (p <0.05), thus it can be concluded that there was a relationship between maternal knowledge and basic immunization provision to infants.

Therefore, the researchers assumed that people who have knowledge about something, will apply this knowledge in everyday life, as well as concerning the immunization problems. Mothers who have high knowledge about immunization will carry out immunizations and know when is the right time to give immunizations, vice versa. Therefore, the right action to increase respondent's knowledge is to ensure that routine outreach is carried out to the community, especially mothers who have babies. social media. This counseling can be carried out at the Public Health Center, pustu or integrated service center either individually or in groups. COunseling can also be carried out by distributing leaflets/posters/social media.

2. Relationship between Attitude nd Complete Basic Immunization Provision to Infants during COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021.

   Based on table 4.3, it was found that among 59 respondents who had a positive attitude, 42 people (71.2%) of them did not receive complete basic immunization, while among 32 respondents who had a negative attitude, 19 of them (59.4%) mostly received complete basic immunizations. The analysis results showed that the p-value obtained was 0.00 (<0.05), which means that there was a significant relationship between Attitude and Complete Basic Immunization during Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio) value obtained was 2.28 so it can be stated that respondents who have a negative attitude were at 2.28 times more risk of not receiving complete basic immunization for their infants.

   The results of this study are not in line with Yuliana's (2018) research which found that there was a significant relationship between attitudes and complete basic immunization provision to infants. From the cross tabulation table above, it can be seen that among 40 respondents (58.8%) who had positive attitudes, 10 people (14.7%) of them did not receive complete immunization, and 91 people (44.1%) received complete immunizations. In addition, among 28 people (41.2%) who had negative attitudes, there ere 23 people (33.8%) who received incomplete immunization, while the remaining 5 people (7.4%) received complete basic immunization.

   Therefore, current researchers assumed that mothers who had a positive attitude will try to provide the best for their children by providing complete basic immunization regularly according to schedule.

3. Relationship between Trust and Complete Basic Immunization Provision for Infants during the COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021.

   Based on table 4.9, among 60 respondents who had positive beliefs, 39 people (65.0%) of them did not receive complete basic immunization and among 31 respondents who had negative beliefs, 16 (51.6%) of them did not receive complete basic

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immunization. The analysis results showed that the p-value obtained was 0.02 (<0.05), which means that there was a significant relationship between belief and the provision of complete basic immunization during Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio) value was 3.55 so it can be stated that respondents who had negative beliefs were 3.55 times more risk of not receiving complete basic immunization to their children

This is in line with the research conducted by Sofian (2020). From the cross tabulation table above, it can be seen that among 45 respondents (53.6%) who have a bad culture, 40 of them (47.6%) of them had incomplete immunization, while among 39 respondents (46.4%) who had a good culture, 28 of them (33.3%) received complete immunization. This obtained p-value of 0.00, which means that there was a significant relationship between culture and the provision of complete basic immunization.

This research is also in line with research conducted by Sintasari (2020) which states that the barriers to immunization based on maternal perceptions that affect IDL status are barriers to mother's fear of immunization adverse effects, barriers to belief/culture, barriers to maternal activity, and barriers to children's health conditions.

So the researchers assumed that mother's belief is an important factor, because mothers who believe in giving complete basic immunization will have a positive impact and will immunize their children.

4. Relationship between Information Sources and Complete Basic Immunization Provision to Infants during the COVID-19 Pandemic at the Gunung Kaler Public Health Center, Tangerang District, 2021.

Based on table 4.10, it was found that among 35 respondents who received good sources of information, the majority of them received complete basic immunizations by 20 people (57.1%), while among 56 respondents who received poor information sources, the majority did not receive complete immunizations by 40 people (71.4%). The analysis results showed that the p-value obtained was 0.00 (<0.05), which means that there was a significant relationship between information sources and the provision of complete basic immunization during Covid-19 Pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio) value obtained was 3.33 so it can be stated that respondents who received poor sources of information had a 3.33 times risk of not giving complete basic immunization to their children.

The results of this study are in line with research conducted by Yuniarti (2017). Among the 29 respondents who received the information sources the most from the media, 51 respondents (51.7) of them had less knowledge, while among 22 respondents who received information from non-media, most of them had sufficient knowled by 10 respondents (45.5%) with a p-value <0.05, so there was a relationship between information sources and complete basic immunization for infants.

This research is also supported by research conducted by Triana (2015) in which the results of statistical analysis on the immunization information variable obtained a p-value of 0.04 (p-value <0.05), meaning that there was a significant relationship between information about immunization and the provision of complete basic immunization to infants in Kuranji District, Padang City in 2015 with a PR value of 1.92 (95% CI: 1.122.64). This indicates that parents who received little information about immunization were at 1.92 times greater risk of not giving immunization complete baseline in babies than well-informed mothers.

So the researchers assumed that the ease of obtaining information can help

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accelerate a person to acquire new knowledge. With a lot of information obtained, the person's knowledge will increase.

5. Relationship between health workers' support and complete basic immunization provision for infants during COVID-19 pandemic at the Gunung Kaler Public Health Center, Tangerang District, in 2021.

   Based on table 4.11, it was found that among 51 respondents who received support from health workers, most of them did not receive complete basic immunization by 39 people (73.6%), while among 40 respondents who did not receive support from health workers, most of them received complete basic immunization by 22 people (57.9%). The results of the analysis showed that the p value obtained was 0.04 (<0.05), which means that there was a significant relationship between health care support and complete basic immunization during Covid-19 pandemic at Gunung Kaler Public Health Center in 2021. The OR (Odd Ratio) value obtained was 2.39, indicating that respondents who did not receive health workers' support were 2.39 times at risk of not giving complete basic immunization to their infants.

   The results of this study are in line with Sofian's research (2020) which revealed that there was a significant relationship between support from health workers and providing complete basic immunization to infants. From the cross tabulation table above, it can be seen that among 50 respondents (59.5%) who did not have the support of health workers, the majority of them received incomple immunizations by 36 respondents (42.9%) and among 34 respondents (40.5%) who received support from the health workers, most of them had complete immunization by 19 respondents (22.6%), with a probability (0.019) (sig_α = 0.05).

   So the researchers assumed that mothers who receive support from health workers will have a higher motivation to provide complete basic immunization to their infants, this is because mothers will be more confident about giving immunization with the explanation given by health workers.

CONCLUSION

Most of them did not receive complete basic immunization (60.4%) during COVID-19 pandemic at the Gunung Kaler Public Health Center, Tangerang District, in 2021.

There is a relationship between knowledge, attitudes, beliefs, sources of information, and support from health workers with complete basic immunization provision for infants during COVID-19 pandemic at the Gunung Kaler Public Health Center, Tangerang District in 2021

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