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Factors associated with the implementation contact tracing COVID-19 program in the Sudiang Raya Health Center, Indonesia

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Abstract

Public knowledge and attitudes towards the Covid-19 prevention program in Indonesia are very important to break the chain of virus transmission. However, people tend to lie and make rude comments to officers. This research aims to analyze the relationship between knowledge and community attitudes towards the implementation of the Covid-19 contact tracing program in the Sudiang Raya Community Health Center Work Area in 2021. This research is an observational study using a cross-sectional design. The results of the multivariate analysis show that the dominant factor most related to the implementation of the Covid 19 contact tracing program is attitude and values (OR: 3,892.95% CI: 1.634, 9.272). This means that people who have positive characteristics are 3,892 times more likely to carry out the Covid 19 contact tracing program compared to respondents with negative characteristics towards implementing the COVID-19 tracing program. The conclusion of this research is that the community health center should be more aggressive in creating health promotion media in the community health center regarding the importance of finding close contacts to break the chain of spread of Covid-19 so that people will be quicker and more willing to provide close contact data if a tracer is started.

Keywords: Knowledge, Community Attitudes, Tracing Program.

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1. Introduction

Coronavirus disease 19, or what is usually called Covid-19, is an infectious disease caused by Severe Acute Respiratory Syndrome-Coronavirus 2 (SARS-CoV-2), which can be transmitted by droplets. Covid-19 was first detected in Wuhan in December 2019, and in just a few weeks the virus was able to spread to all parts of China, and in about a month to other countries around the world. The WHO declared the Covid-19 virus outbreak a public health emergency of international concern on 30 January 2020 and a pandemic on 11 March 2020 [1]. Covid-19 is a disease that spreads very quickly by direct contact and also by droplets or splashes of saliva that enter the body directly through the eyes, nose and mouth, or when the hand touches a surface contaminated with the Covid-19 virus and then touches the face. People who have direct contact with positive Covid-19 patients are at risk of contracting the disease. The recommended health protocol for Covid-19 transmission to prevent contracting Covid-19 is to wear a mask, wash your hands, keep your distance, use coughing and sneezing etiquette, avoid direct contact with livestock and wild animals, eat nutritious food, exercise regularly and avoid direct contact with people who have symptoms of illness such as fever, flu and cough [2]. A contact tracing policy has three main components: isolation of individuals identified as infected to prevent further transmission; tracing of recent contacts of those who may have been infected; and interventions, most commonly quarantine, applied to traced individuals to try to break the chain of transmission [3]**.** On 11 February 2022, WHO reported 404,910,528 Covid-19 cases worldwide and 5,783,776 (1.42%) deaths due to Covid-19. The United States is the country with the most Covid-19 cases, followed by India, Brazil, France, the United Kingdom, Russia, Turkey, Germany, Italy, Spain, Argentina and Iran. In South-East Asia, there were 54,098,559 cases and 751,479 (1.38%) deaths. After India, South-East Asia had the second highest number of Covid-19 cases and 17th highest number of deaths with a total of 4,708,403 Covid-19 cases and 144,958 (3.07%) deaths [4].

Indonesia reported its first case of COVID-19 on 2 March 2020, and the number of cases continues to rise. As of 12 February 2022, 4,763,252 cases and 145,065 deaths had been reported. The number of Covid-19 cases in Indonesia increased by 1.16% compared to November 2021. The province of DKI Jakarta ranks first with a case prevalence of 22.1%, followed by West Java (7.1%), Central Java (10.7%), East Java (9.1%), Banten (4%), East Kalimantan (3.4%), D.I. Yogyakarta (3.4%), Bali (2.9%), Riau (2.8%) and South Sulawesi (2.4%) [5].

The province of South Sulawesi ranks 10th with a total of 112 050 cases and 2 248 (2%) deaths. The number of active confirmed cases is currently 1816. Makassar City ranks 2nd in South Sulawesi with a total of 50,260 cases and 1011 (2%) deaths, with 298 new cases as of 11 February 2022. The districts of Rappocini, Biringkanaya, Panakkukang and Manggala are the districts with the highest number of Covid-19 cases with the highest number of new cases per day, approximately 31-39 new cases [6]. The current situation with Covid-19 at a global and national level remains high risk. This means that everyone must continue to follow health protocols and support the Covid-19 response programme. The current Covid-19 prevention programme in Indonesia, which is still ongoing, is the Vaccination and Contact Tracing Programme or Close Contact Tracing. Over time, the increase in Covid-19 cases in Indonesia also occurs at specific times, such as around the New Year, Ramadhan and Eid al-Fitr. Close contact tracing was necessary at these times because of the high mobility of the Indonesian population [7]. One strategy employed in some countries to reduce the transmission of the virus is to test individuals displaying symptoms, trace their contacts with those they may have infected, isolate infected individuals, and quarantine those who may have been infected but are yet to exhibit symptoms or test positive. If the contacts of the case can be identified, and quarantined or isolated during the period of transmission, this can limit the spread of the virus [8]. Close contacts are individuals who have had direct contact with confirmed positive or probable cases. This includes face-to-face meetings within a 1-metre radius for more than 15 minutes, direct care for confirmed positive patients without personal protective equipment, and other high-risk situations, such as sharing an office, mode of transportation, or room. Contact tracing is conducted to identify, evaluate and manage individuals who have had direct contact with confirmed or probable cases, in order to prevent further transmission. This is crucial to perform because patients can transmit the virus from 2 days before experiencing symptoms, until up to 14 days afterwards [2]. To gather information about close contacts, it can be procured through interviews with confirmed cases, close contacts who self-report, or during epidemiological investigations in the field. At first, Community Health Centre Surveillance officers were responsible for performing close contact tracing. Due to the hefty workload of surveillance officers, the National Disaster Management Agency (BNPB) recruited Tracers in January-March 2021. These Tracers were stationed in Community Health Centers to assist Surveillance Officers in conducting Covid-19 Epidemiological Investigations.

Sudiang Raya Community Health Centre is actively conducting rigorous contact tracing until December 2021. The process involves coordinating with posyandu cadres, pkk cadres, and interns at the centre. It is one of the community health centres in Makassar City. In January-March 2021, the Sudiang Raya Community Health Centre recorded 304 cases of Covid-19, according to data from electoral district III. Of these cases, 216 were traceable and there were 504 close contacts. The total number of Covid-19 cases at the health centre in 2021 was 821. Those who have contracted Covid-19 as identified by the community health center consist mainly of individuals within the productive age group, with the majority being 71 individuals aged between 21 and 30 (23%) and a further 70 individuals aged 31 to 40 (23%). The Sudiang Raya health center's jurisdiction comprises of two sub-districts, namely Laikang and Sudiang Raya sub-districts, wherein most of the cases were located in Laikang sub-district with a total of 448 cases (61%) [6]. Public awareness and attitudes towards the Covid-19 prevention programme in Indonesia play a crucial role in breaking the chain of virus transmission, with contact tracing being one of the key components. Researchers have observed that the community's reaction to the Contact Tracing programme is less than cooperative, with individuals frequently lying and being discourteous towards the officers conducting contact tracing activities. This happens because of social pressure from people around them, such as family and friends, regarding their good and bad views in carrying out prevention efforts, which can later influence the views of close contacts regarding the good and bad of Covid-19 and preventing its transmission. One of the strongest predictors is knowledge. The study findings by Hanan et al., 2021, derived from responses of 31 participants before intervention, demonstrated a satisfactory level of knowledge (83.9%), favourable attitude (90.3%), and acceptable behaviour (77.4%) [9]. The bivariate test indicates that personal income has a marked correlation with knowledge regarding COVID-19 tracing. There was a rise in the proportion of participants exhibiting adequate knowledge by 6%, as well as an increase in favourable attitudes by 10% ($p<0.05$). Furthermore, individuals' educational and occupational backgrounds have an impact on their level of health knowledge. Safeguarding the success of this contact tracing programme necessitates countering the spread of misleading information. If you believe in hoaxes on internet media, the social pressure you will get is that society will cause bad behavior until there are confirmed cases or close contacts [10].

2. Method

This study employs an observational, cross-sectional design, and takes place in the working area of the Sudiang Raya Community Health Center located in Makassar City. This study employs an observational, cross-sectional design, and takes place in the working area of the Sudiang Raya Community Health Center located in Makassar City. The study was conducted over the course of October to December 2022, and includes individuals who have tested positive for Covid-19 and reside within the health center's designated work area. In 2021, a total of 216 cases of Covid-19 were traced. The sampling technique utilized in this study is purposive sampling. The research's data collection involved primary data sourced via questionnaires, and secondary data sourced via the internet, Covid prevention and control guidelines, Covid-19 contact tracing module, and journals pertaining to this research topic. The data processing procedures followed the editing, coding, entry, tabulating, and cleaning sequence. Statistical data processing software (SPSS) was used for data analysis. Parametric tests were used to analyse the effect of independent variables on the dependent variable. Demographic groups were compared using chi-square tests, and univariate, bivariate and multivariate analysis was conducted to assess knowledge scores, attitudes, education, employment, close contact ratio and the role of tracing officers.

3. Results and discussion

3.1. Results

Table 1 illustrates that the majority of participants were female, specifically 80 individuals (57.1%). Additionally, most of the respondents fell within the age bracket of 20-29 years, namely 61 individuals (43.6%). Concerning the nature of the work, the data indicates that a larger sample of respondents, namely 105 people (75.0%), were employed. Furthermore, 133 participants (95.0%) possessed higher education qualifications. Tabel 2 The data indicate that out of the 140 participants, the majority of those with public knowledge in the sufficient category, comprising 83 individuals (59.3%), have a higher frequency distribution compared to those with inadequate knowledge, consisting of 57 individuals (40.7%). In terms of attitude variables, a larger number of respondents, namely 83 individuals (59.3%), are in the positive attitude category compared to 57 individuals (40.7%) with negative attitudes. There was a higher involvement of tracing officers among participants in the good category, with 80 individuals (57.1%) compared to 60 individuals in the fair category (42.9%). Moreover, the number of participants in the good category who implemented contact tracing was greater, with 107 individuals (76.4%), compared to 33 individuals (23.6%) in the poor category. The number of close contacts identified by tracing officers was significantly higher (97.9%) in the "low" category, with 137 individuals, compared to only 3 people (2.1%) in the "high" category. Respondents with a high level of education made up the majority (95.0%) of the sample size, with 133 individuals, while those with a lower level of education comprised only 7 people (5.0%). The variable of employment status for respondents indicated that there were more individuals who were employed, specifically 105 people (75.0%), compared to 35 respondents belonging to the non-working category (25.0%). Table 3 illustrates the proportion of community members who possess knowledge on the implementation of the Covid 19 contact tracing program. It indicates that 23 individuals (16.4%) have such knowledge, while 34 respondents (24.3%) have inadequate knowledge but a good understanding of the program's implementation. In terms of knowledge about the implementation of the contact tracing program, 13 people (9.3%) possessed sufficient knowledge while 70 people (50.0%) had adequate knowledge on the effective measures to be put in place for Covid-19 contact tracing. Upon the chi-square test analysis, it is evident that the value ($p = 0.001$) < 0.05. This indicates that Ho is rejected. There is a correlation between knowledge and the execution of the Covid-19 contact tracing scheme. The attitude variable indicates that 20 individuals (14.3%) demonstrated a negative attitude towards the Covid 19 contact tracing program's poor implementation, while 37 respondents (26.4%) displayed negative sentiment towards its successful implementation. Meanwhile, only 16 individuals (11.4%) expressed a favourable response regarding the implementation of the Covid-19 contact tracing initiative, while 67 individuals (47.9%) were in favour of establishing a well-performing Covid-19 contact tracing programme. Based on the chi-square test analysis, it is evident that the value ($p=0.035$) < 0.05, implying a rejection of the null hypothesis (Ho). There is a correlation between attitude and the execution of the COVID-19 contact tracing initiative.

The varying impact of tracing officers reveals that fewer than 26 individuals (18.6%) who responded to the survey play a significant role in Covid-19 contact tracing program implementation as tracing officers. Additionally, respondents with a tracing officer role play a sufficient role in implementing the program. Good: Out of a total of 140 respondents, only 29 people (20.7%) reported having the role of tracing officers in the contact tracing program implementation. Conversely, the percentage of respondents with this role who reported playing a role in implementing a good contact tracing program was 75 people (72.1%). Using a chi square test analysis, the p-value of 0.000 was obtained, which is less than the significance level of 0.05, thereby rejecting H0. There is a correlation between the duties of tracing officers and the execution of the Covid 19 contact tracing scheme. Table 5 presents the outcomes of a multivariate analysis exploring the correlation between research factors and the implementation of the Covid 19 contact tracing program in the working area of the Sudiang Raya Community Health Centre. The variable for close contact ratio reveals that fewer than 30 individuals (21.4%) had a low close contact ratio during the launch of the Covid-19 contact tracing programme, while 107 individuals (76.4%) had a low ratio during its successful implementation. The proportion of participants with a high rate of close contacts in relation to the implementation of the Covid 19 contact tracing programme was less than 3 individuals (2.1%). Analysis of the chi square test indicated that the value ($p=0.002$) <0.05, leading to the rejection of H0. This finding suggests a correlation between the close contact ratio and the implementation of the Covid 19 contact tracing programme. The variable representing education levels indicates that fewer than 2 individuals (1.4%) with low levels of education have participated in the implementation of the Covid 19 contact tracing program, while 5 individuals (3.6%) with low levels of education have been involved in its successful execution. Meanwhile, fewer than 31 respondents (22.1%) with a high level of education were aware of the Covid-19 contact tracing programme implementation, while 102 respondents (72.9%) with a similar education level were informed regarding the implementation of the programme. Chi-square test results demonstrated that the value ($p=0.749$) > 0.05, indicating acceptance of H0. There is no correlation between the level of education and the execution of the Covid 19 contact tracing system. The employment status variable indicates that 12 individuals (8.6%) who do not work reported poor implementation of the Covid-19 contact tracing programme, while 23 individuals (16.4%) who do not work reported good implementation of the programme. Meanwhile, out of the total respondents, 21 individuals (15.0%) worked on implementing the Covid-19 contact tracing program, while 84 individuals (60.0%) worked on ensuring its effective implementation. The chi-square test results reveal that the value ($p = 0.085$) > 0.05, indicating the acceptance of H0. There is no discernible correlation between employment status and the execution of the Covid-19 contact tracing system. Table 4 displays the results of the multivariate selection analysis conducted using logistic regression testing. It was determined that the level of education ($p=0.749$) is unsuitable for inclusion in the multivariate test due to its p value being >0.25. However, variables such as Knowledge ($p= 0.001$), Attitude ($p= 0.035$), Role of Tracing Officer ($p= 0.000$), Close Contact Ratio ($p= 0.002$), and Occupation ($p=$

0.085) exhibit suitable traits to be considered in the multivariate test, as they possess a p value < 0.25.

Table 5 illustrates that, based on the results of the multivariate analysis employing the logistic regression test, two variables exhibited a significant correlation with the implementation of the Covid-19 contact tracing programme, indicated statistically with a p value of less than 0.05. Specifically, the attitude variable (p=0.002) and knowledge (p=0.016) were found to be related. The primary factor with the strongest association to the implementation of the Covid-19 contact tracing programme is attitude and values (OR=3.892, 95% CI: 1.634, 9.272). As the lower and upper limit values do not encompass the value of one, this indicates that individuals with positive attributes have a 3.892-fold association with the implementation of the Covid-19 contact tracing programme in comparison to those with negative characteristics towards its implementation, which is deemed to be statistically significant. Meanwhile, the role of tracing officer (OR= 0.676, 95% CI: 0.282, 1.618), close contact ratio (OR= 0.000, 95% CI: 0.000), and work (OR= 0.680, 95% CI: 0.265, 1.744) were analyzed. As the lower and upper limit values include a value of one, this indicates that the OR value is not statistically significant. The significance of tracing officers (p=0.000) and close contact ratio (p=0.002) is small in the bivariate analysis but not in the multivariate analysis, where it has a p value> 0.05. This occurs because bivariate analysis only tests for a relationship between two variables while multivariate analysis tests for the relationship between three or more variables together.

3.2. Discussion

Knowledge is one of the most important things to consider when dealing with viruses, including Covid 19, especially in efforts to prevent transmission and reduce the spread of viruses [11]. Knowledge has a great contribution to make in changing a person's behaviour to do something positive or negative. Bivariate analysis revealed a significant correlation between knowledge and contact tracing programme implementation. Table 3 revealed a value of (p=0.001) indicating that 70 respondents (50.0%) possessed sufficient knowledge to implement an effective contact tracing program. The research carried out by Afrianti da Rahmiati (2021) in Kuta Alam District, Banda Aceh, yielded similar findings. The study revealed that 74.2% of individuals demonstrated high awareness of Covid 19, while 25.8% exhibited low knowledge, with a p-value of 0.015 indicating that knowledge plays a crucial role in public adherence to Covid 19 health protocols [12]. Adequate knowledge within the community regarding COVID-19 is supported by improved access to accepted information. Most of the respondents in this study were aged between 20 and 29 years old. They were more frequently exposed or sought out information online, either through official websites like the Ministry of Health's website or via social media platforms [13]. Bivariate analysis of the research findings reveals that 83 participants (59.3%) displayed positive attitudes towards implementing the Covid-19 contact tracing initiative, while 57 participants (40.7%) had negative attitudes. The statistical test yielded a p-value of 0.035, which is less than the significance level of 0.05, thus rejecting the null hypothesis. We can conclude that there is indeed a relationship between attitudes towards the implementation of the program. Furthermore, the results suggest that respondents' positive attitudes may be positively influenced by good knowledge. Someone who has information about COVID-19 can make decisions and can behave/comply with good protocols against COVID-19. Factors that influence attitudes, both electronic and print media, influence a person's beliefs and opinions. Providing information through social media underlies new cognitive abilities so that attitudes are formed [14]. The findings of this study are consistent with the research conducted by Hanan et al. (2021). Based on data gathered from 31 respondents, it was found that 90.3% of the population hold positive views towards tracing Covid 19. Widespread knowledge about Covid 19 may stimulate positive attitudes towards the tracing efforts made to contain the spread of the virus [9]. The fundamental approach to controlling Covid-19 cases is through the 3 Ts (Tracing, Testing and Treatment). Strengthening tracking of confirmed patients and close contacts is the key objective of tracing. The process of contact tracing necessitates identifying, evaluating and handling individuals affected by Covid-19 to disrupt the transmission chain. Upon confirmation of a positive Covid-19 diagnosis, individuals who have been in close contact will be identified and informed in detail. The provided information will guide the course of testing and treatment [15]. The bivariate analysis results reveal that the respondents' answers surrounding the contribution of tracing officers were integral in executing the Covid 19 contact tracing initiative, with 80 individuals (57.1%) classifying it as a significant role and 60 individuals (42.9%) categorising it as a moderate role. The obtained p-value of (p= 0.000) < 0.05 shows rejection of Ho, signifying a correlation between the role of tracing officers and the implementation of the Covid 19 contact tracing programme. This study is in accordance with Naibili's (2022) research, which outlines the form of collaboration used in managing Covid-19 in Belu Regency. The report provides a comprehensive and objective overview of the teamwork approach employed in response to the pandemic. The collaboration was established through the formation of the "Garuda Team," consisting of the sub-district head, Danramil, Babinsa, Babinkamtibmas, village heads, Covid-19 volunteers for each sub-district, and health workers from the Community Health Centre. The education and outreach component for the general public on Covid-19 encompasses collaboration and mutual cooperation between all involved parties in managing the virus [16]. In other words, officers act as facilitators whose duty is to encourage and organize the community, aiming to change people's behaviour regarding Covid-19 prevention. The previous behaviour of people, who paid little attention to tracing and were fearful, can be gradually corrected. The presence of facilitators at the hamlet level can provide guidance to the community regarding tracing Covid-19. This is important to do, because not all of the community can understand directly about tracing so it takes time for them to understand. Close contacts are individuals who have had contact with confirmed or probable cases of Covid-19. Contact history refers to face-to-face or close proximity interactions with confirmed or probable cases within 1 meter and lasting for a period of 15 minutes or more. Additionally, direct physical contact with a confirmed or probable case, such as holding hands or shaking hands, constitutes contact.

The bivariate analysis results exhibit that 137 individuals (97.9%) had a low close contact ratio while only 3 individuals (2.1%) demonstrated a high close contact ratio.

The value obtained (p= 0.002) < 0.05 signified the rejection of Ho, indicating a connection between the close contact ratio and the execution of the Covid 19 contact tracing program. Based on the collected interview data, it was found that the contact tracing implementation in Sudiang Raya was carried out satisfactorily. However, the government's suggested standard of tracing 30 close contacts of each confirmed Covid-19 patient was not met. The reason behind this non-compliance was the dishonesty of patients confirmed positive for Covid-19. During the interviews about their contacts during the last two weeks, patients tend to hide the identity of individuals who closely interacted with them. There is still a societal stigma that Covid 19 is a disgraceful illness that should be concealed, hindering community health centers' capacity to identify close contacts. This indicates a lack of public consciousness to actively contribute towards the implementation of the Covid 19 contact tracing scheme. This study is consistent with the findings of Wati and Hadi (2021) that the stigma associated with outbreaks of infectious diseases is predominantly rooted in people's fears. The participant reported feeling sad, confused, and frightened that they would pass on the disease to their parents, who had a history of the illness, and apprehensive about what their future held [17]. This study aligns with Kencana's (2020) research, which highlights the essential role of community participation in implementing Covid-19 contact tracing. Therefore, health workers from both the health department and community health center need to continuously provide education and outreach to the community. This will ensure effective contact tracing and control of the virus spread. Cross-sector and cross-program collaboration is needed in implementing contact tracing so that community contributions can be increased [18]. Fourteen observational studies consistently provided evidence that contact tracing (alone or in combination with other interventions) is associated with better control of COVID-19. Eighteen modelling studies provided consistent evidence and had a high degree of certainty assuming that rapid and thorough tracing and effective quarantine could stop the spread of COVID-19 [19]. The bivariate analysis results reveal that the vast majority of respondents possess a high level of education, with 133 individuals (95.0%) falling into this category. Only 7 respondents (5.0%) have a low education level. Moreover, the obtained p-value (=0.749) is greater than 0.05, indicating that H0 is accepted. Therefore, there is no discernible association between education level and the implementation of the Covid-19 contact tracing program. This study is consistent with the investigation carried out by Sari and Budiono (2021) concerning the education level factor, which indicates that the Chi Square test's outcome reflects a p-value of 0.339, p > 0.05. This indicates that there is no substantial link between the level of education and the employees' preventive behaviour against COVID-19 transmission in the Central BKKBN Office [20]. This is because people's knowledge about prevention is not only derived from formal education, but also from their own experience and social environment. Previous research has also shown that the level of education does not influence a person's preventive behaviour due to several components, such as differences in perceptions of disease susceptibility, perceptions of prevention efforts, perceptions of benefits, and the individual's perception of carrying out preventive efforts.

The results of the bivariate analysis of this study indicate that the employment status of respondents is dominated by working status, namely 105 people (75.0%) and non-working status as many as 35 people (25.0%) with a value (p = 0.085) > 0.05 which means H0 is accepted. This means that there is no relationship between job status and the implementation of the Covid 19 contact tracing programme.

Other research that is in line with this study is research conducted by Sari et al. (2020) that there is no relationship between employment status and Covid 19 prevention behaviour and grades (p= 0.605). This is because the number of respondents who are working and those who are not working with good Covid 19 prevention behaviour is almost the same [21]. Research conducted by Nawangsari (2021) also found that there was no significant relationship between employment status and people's knowledge in South Kalimantan about the prevention of Covid-19 (p=0.515) > 0.05, which means that there is no relationship between work and knowledge. people in South Kalimantan about the prevention of Covid-19 [22]. Employment status is not related to Covid 19 prevention behaviour, possibly because respondents take Covid 19 prevention even if they do not work. It is also possible that this is related to the age of the respondents, most of whom are teenagers. This could be because a person's behaviour is not only influenced by work, but by many other factors such as knowledge, perception, motivation and others that may influence a person to engage in Covid 19 prevention behaviour. The results of the multivariate analysis show that the dominant factor most associated with the implementation of the Covid 19 contact tracing programme is attitude and values (OR: 3.892, 95% CI: 1.634, 9.272). This means that people with positive attitudes are 3.892 times more likely to implement the Covid 19 contact tracing programme than respondents with negative attitudes towards implementing the Covid 19 contact tracing programme. The findings of this study are consistent with those of Yanti et al. (2020), who reported that 99% of Indonesians possess sound knowledge, 59% exhibit positive attitudes, and 93% exhibit good behaviour in relation to Covid-19 prevention measures in Indonesia. Wiranti et al. (2020) also validated these findings, demonstrating that the majority of their study participants displayed a dominant positive attitude (65.2%) towards COVID-19 (p = 0.000) [23]. In the context of social distancing, this study highlights five key strategies for achieving social distancing: social distancing, crowd control, mask detection, isolation/quarantine, and virtual interaction. Additionally, it is observed that the effective implementation of contact tracing and social distancing schemes can significantly reduce the spread of infectious diseases. Finally, this study identifies important areas for future research that demand increased attention from researchers and experts. Specifically, further efforts should be made to enhance the efficacy of non-pharmaceutical interventions such as contact tracing and social distancing in combating the spread of COVID-19 [24].

Table 1: Distribution of Respondent Characteristics in the Sudiang Raya Community Health Center Work Area in2021

Respondent Characteristics	Number of Respondents (n= 140)	
	n	%
Gender		
Woman	80	57,1
Man	60	42,9
Age		
< 20	1	0,7
20 - 29	61	43,6
30 - 39	45	32,1
40 – 49	25	17.9
≥ 50	8	5,7
Level of education		
Low	7	5,0
Tall	133	95,0
Job status		
Work	105	75,0
Doesn't work	35	25,0

Table 2: Distribution of Respondents Based on Research Variables in Regions Sudiang Raya Community Health Center Work in 2021

Research variable	Number of Respondents (n= 140)	
	n	%
Knowledge		
Not enough	57	40,7
Enough	83	59,3
Attitude		
Negative	57	40,7
Positive	83	59,3
Role of Tracing Officer		
Just Playing a Role	60	42,9
Play a role	80	57,1
Implementation of Contact Tracing		
Not enough	33	23,6
Good	107	76,4
Close Contact Ratio		
Low	137	97,9
Tall	3	2,1
Level of education		
Low	7	5,0
Tall	133	95,0
Job status		
Doesn't work	35	25,0
Work	105	75,0

Table 3: Results of Bivariate Analysis of the Relationship between Research Variables and the Implementation of the Covid 19 Contact Tracing Program in the Sudiang Raya Community Health Center Work Area

Research variable	Implementation of the Contact Tracing Program				Total		P
	Not		good				
	n	%	n	%	n	%	
Knowledge							0,001
Not enough	23	16,4	34	24,3	57	100	
Enough	13	9,3	70	50,0	83	100	
Attitude							0,035
Negative	20	14,3	37	26,4	57	100	
Positive	16	11,4	67	47,9	83	100	
Officer's Role							0,000
No Role	26	18,6	29	20,7	55	100	
Play a role	10	7,1	75	72,1	85	100	
Close Contact Ratio							0,002
Low	30	21,4	107	76,4	137	100	
Tall	3	2,1	0	0,0	3	100	
Education							0,794
Low	2	1,4	5	3,6	7	100	
Tall	31	22,1	102	72,9	133	100	
Work							0,085
Doesn't work	12	8,6	23	16,4	35	100	
Work	21	15,0	84	60,0	105	100	

Table 4: Bivariate Test Results for Each Independent Variable Included in the Multivariate Test

Variable	Signifikan	Included
Knowledge	0,001	Included
Attitude	0,035	Included
Role of Tracing Officer	0,000	Included
Close Contact Ratio	0,002	Included
Education	0,749	Not Included
Work	0,085	Included

Table 5: presents the outcomes of a multivariate analysis exploring the correlation between research factors and the implementation of the Covid 19 contact tracing program in the working area of the Sudiang Raya Community Health Centre.

Variable Study	B	S.Err	Wald	Sig.	Exp (B)	95% CI	
						LL	UL
Knowledge	1,110	0,459	5.856	0,016	3,034	1,235	7,455
Attitude	1,359	0,443	9,412	0,002	3,892	1,634	9,272
Role of Tracing Officer	-0,392	0,446	0,773	0,379	0,676	0,282	1,618
Contact Ratio Tightly	-19,844	28328,901	0,000	0,999	0,000	0,000	-
Work	-0,385	0,480	0,643	0,423	0,680	0,265	1,744
Constant	38,201	56657,802	0,000	0,999	38928504154 848504,000	-	-

Standard COVID-19 contact tracing protocol entails identifying individuals who were in close contact with an infected person during their infectious period, which is estimated to begin two days prior to symptom onset or diagnosis. In our extensive cohort study on retroactive COVID-19 contact tracing, we extended this period to five days in order to pinpoint the source of infection and any individuals who may have contracted the illness from the same source. The infection risk of these additional contacts was comparable to that of contacts exposed during the standard tracing and flagging period, yet much higher than that of symptomatic individuals in the control group. This led to the identification of 42% more cases as direct contacts of the index case. When compared to standard practice, backward traced contacts require less testing and shorter quarantines. However, they were identified later in the infection cycle as being infected. Our findings endorse the implementation of retrograde contact tracing in situations where there is a need for strict suppression of viral transmission [26]. Standard COVID-19 contact tracing protocol entails identifying individuals who were in close contact with an infected person during their infectious period, which is estimated to begin two days prior to symptom onset or diagnosis. In our extensive cohort study on retroactive COVID-19 contact tracing, we extended this period to five days in order to pinpoint the source of infection and any individuals who may have contracted the illness from the same source. The infection risk of these additional contacts was comparable to that of contacts exposed during the standard tracing and flagging period, yet much higher than that of symptomatic individuals in the control group. This led to the identification of 42% more cases as direct contacts of the index case. When compared to standard practice, backward traced contacts require less testing and shorter quarantines. However, they were identified later in the infection cycle as being infected. Our findings endorse the implementation of retrograde contact tracing in situations where there is a need for strict suppression of viral transmission [28]. During the COVID-19 outbreak, it is highly likely that an epidemic will emerge due to the considerable uncertainty and lack of effective intervention variability. Therefore, identifying widespread events as early as possible is fundamental yet challenging. Furthermore, establishing and maintaining active monitoring systems in the early phases of a potential disease outbreak is essential. There is a constant risk of encountering potentially infectious diseases. Thus, meticulous contact tracing should be carried out not only by public officials but also by individuals [30].

4. Conclusions

After researching the link between community attitudes and knowledge towards the implementation of the contact tracing programme within the Sudiang Raya Community Health Centre's working area, the researchers concluded there was a significant relationship between the two with a p-value of 0. 001 ($p<0.05$). A significant correlation exists between attitudes towards Covid 19 contact tracing program implementation, with a p-value of 0.035. Additionally, a significant correlation exists between the role of tracing officers in implementing the program and a p-value of 0. 000 ($p<0.05$), A significant correlation exists between close contact ratio and the implementation of Covid-19 contact tracing, with a p-value of 0.002 ($p<0.05$). However, there is no significant correlation between the level of education and the implementation of Covid-19 contact tracing, with a p-value of 0.749 ($p>0.$). 05) There is no significant correlation between employment status and the implementation of Covid-19 contact tracing programme with a p-value of 0.085 ($p>0.05$), while attitude emerged as the crucial variable based on multivariate analysis of the Covid-19 contact tracing programme implementation, with an Exp (B) value of 3.892. Individuals with positive traits are 3,892 times more likely to effectively carry out the Covid 19 contact tracing program as compared to those respondents who possess negative traits towards the implementation of the Covid 19 contact tracing program.

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