Penahelix integrated health protocol education model for Covid-19 pandemic handling based on Tri Hita Karana

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Abstract Many people have not implemented health protocols according to government advice, such as not washing hands and wearing masks in public; thus, COVID-19 pandemic transmission has rapidly occurred. This cause is mostly the citizen’s lack of awareness in implementing 3 M (memakai masker, menjaga jarak, mencuci tangan in English read washing hands, wearing masks, and maintaining distance). The status quo becomes the researcher’s foundation in developing a pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana. This development research refers to the prototyping model according to Nieveen that covers (1) preliminary research, (2) the prototyping stage, and (3) the assessment stage. The research subjects were 100 people. The data collection method used a questionnaire of community appreciation that measures knowledge and the community’s level of awareness. The data analysis used was a t test. The results of the research show that the model of pentahelix integrated health protocol education for the handling of COVID-19 based on Tri Hita Karana was effectively used to improve the community’s appreciation of conducting health protocols. This is shown by the improvement of average values before and after the implementation. Thus, it can be recommended as a solution to COVID-19 prevention.

Keywords: health protocol education, COVID-19 pandemic, pentahelix, Tri Hita Karana

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic has spread throughout the world. The first case of COVID-19 outside China was reported in Thailand on January 13, 2020; then, over time, COVID-19 spread to countries in Asia, Europe, America, and Africa (Mahitsa and Mahardini 2020). The virus has infected more than 285 million world citizens and affected more than 5.4 million people at the end of 2021 (Huang et al 2020; Tan et al 2022). This disease is caused by a new type of coronavirus named SARS-CoV-2 (Chamseddine et al 2022) The infection is characterized by fever, fatigue, dry cough, dyspnea, and sometimes gastrointestinal symptoms (Hartoyo et al 2022). COVID-19 usually appears as an acute viral respiratory infection and many diagnoses are associated with viral cases of pneumonia, such as influenza, parainfluenza, adenovirus infections, respiratory syncytial virus infections, metapneumovirus infections, and atypical pathogens, such as Mycoplasma pneumonia and Clamydophila pneumonia infections (Wu et al 2020). COVID-19 creates new challenges in all fields, especially the health field (Asmaningrum et al 2022; Behera 2021). The rise of the coronavirus pandemic has changed social life and patterns globally (Chang et al 2020). COVID-19 rapidly infects humans through direct physical contact or indirectly, depending on the patient’s immunity (Syahrani et al 2021). COVID-19 entered Indonesia on March 2, 2020, with the discovery of three positive cases infected with COVID-19 (Chairani, 2020). Based on WHO data, as of February 7, 2021, there have been 223 countries confirmed by COVID-19, with 105,249,764 positive cases and 2,298,606 deaths. Positive cases of COVID-19 in Indonesia are also high, breaking the 1 million mark in data developments on February 7, 2021. It is known that 1,157,837 have been confirmed to be positive for COVID-19, with a recovery rate of 949,990 and 31,556 deaths (Ichwan et al 2021).

Based on updated data on February 7, 2021, almost all regions in Indonesia have been exposed to COVID-19 (Muhyydin, 2020); thus, to see the level of vulnerability to the spread of COVID-19 in an area, the government provides color coding for the COVID-19 zone, including the green zone, which indicates an area or area where there are no cases or COVID-19 infections. Activities, as usual, can run normally by implementing health protocols. The yellow zone indicates that there are several positive cases of COVID-19 with some local transmission. The orange zone indicates that the region is close to the red zone with small spreading clusters. In this area, health protocols are aggressively tightened. The red zone indicates that there are COVID-19 cases in one or more clusters with a high increase in cases. The purpose of providing zone coding in each of these
areas is to classify areas affected by COVID-19. Color coding in an area can also be used as a special code to determine the number of confirmed cases in each area. One of the provinces experiencing a high level of COVID-19 as of June 1, 2021, is Bali. It is known that positive cases of COVID-19 per Regency in Bali Province indicate that Denpasar City is the area with the highest ratio of positive cases of COVID-19. In addition to Denpasar City, which has the most cases of sufferers and victims due to COVID-19, several regencies in Bali, such as the Badung, Tabanan, Gianyar, and Buleleng regencies, have also shown many victims infected with COVID-19. The continued increase in the number of COVID-19 patients is also due to the very high and easy transmission of the virus. How quickly and easily the transmission of COVID-19 is known to spread from person to person in a short time and with symptoms such as high fever, cough, shortness of breath, decreased appetite and tastelessness, and weakness.

Many policies are used to overcome the spread of COVID-19, and countries are competing to innovate to prevent this pandemic (Tuti et al 2022). Likewise, the Province of Bali has implemented several measures to reduce the spread of COVID-19, namely, with 3 M. The 3 M program (washing hands, wearing masks, and maintaining distance) is a series of efforts to prevent the spread and transmission of COVID-19 (Pakaya et al 2021; Sulaeman et al 2022). In addition to the 3 M, other things that the Bali provincial government has also done are closing public recreation and education places, such as schools and universities, and limiting face-to-face interactions over long distances. The Bali Provincial Government also continues to make efforts to minimize the number of people infected with COVID-19, such as following the recommendations from the central government, namely, by implementing large-scale social restrictions (PSBBs). PSBB is an activity to limit certain activities of residents in an area suspected of being infected with COVID-19 in such a way as to prevent the possible spread of COVID-19 (Permadi and Sudirga 2020). The Bali Provincial Government carried out PSBB based on government regulation Number 21 of 2020 concerning Large-Scale Social Restrictions. In addition, the implementation of PSBB is also regulated by Minister of Health Regulation (PMK) No. 9 of 2020 concerning PSBB Guidelines as an Acceleration of Handling COVID-19. Technically, the types of community activities that are regulated include closing schools and workplaces, restrictions on religious activities, restrictions on activities in public places, restrictions on sociocultural activities, restrictions on transportation modes, and restrictions on other activities specifically related to defense and security aspects.

The Bali Provincial Government enforces the PSBB policy based on the region, both Regency/City and District, based on the severity of the outbreak, whose assessment is determined by the central government through the Ministry of Health. Although there are rules that regulate community activities during the COVID-19 pandemic, there are still many people who do not follow the health protocols recommended by the government, such as not washing their hands and not using masks when traveling so that the transmission of COVID-19 occurs so quickly due to a lack of public awareness in implementing 3 M, namely, wearing masks, washing hands and keeping a distance (Fakhira et al 2021; Fariatul Aeni et al 2022; Patilaiya et al 2019). With the increasing number of cases of patients exposed to COVID-19 and the attitude of the public who are indifferent to the threat of COVID-19, the government of Indonesia has prepared various regulatory frameworks, institutional frameworks, and financing frameworks, which are not only in response to the health emergency response conditions with the outbreak of the COVID-19 pandemic. But also in preparing the social safety net and the economic impact of this multidimensional disaster, the Regional Disaster Management Agency (BPBD), as the agency that has the task of carrying out disaster management, should coordinate all stakeholders in handling COVID-19. One of the efforts made by the government as a concrete form of the COVID-19 response capability in the regions in coordinating all stakeholders is by forming related institutions that play a role. Institutions that play a role in handling COVID-19 in the regions are called the Task Force for the Acceleration of Handling COVID-19.

One of the tasks of the COVID-19 Task Force in the regions is to provide education about the importance of complying with health protocols, namely, diligently washing hands, maintaining distance, wearing masks, and conducting tests, tracing, and follow-up (Prasetya, 2022). In addition, the role of the family, local customs, and the participation of the private sector are also necessary in the chain of transmission of COVID-19. Therefore, the Task Force in dealing with COVID-19 is also assisted by the community and other stakeholders. This is because family clusters, offices, and other public places are quite large and high contributors to the transmission of the COVID-19 virus in the community. For this reason, the COVID-19 Task Force must have insight, and another thing that must also be considered is the way the COVID-19 Task Force fosters a conducive atmosphere when providing education to the public. A health protocol education model is needed. Education, also called education, is all planned efforts to influence other people, individuals, groups, and communities so that they do what is expected by education actors (Amirullah 2021). The existence of health protocol education will have a positive impact on public understanding of COVID-19 (Darmin et al 2022; Suhermi et al 2021). Therefore, it is deemed necessary to develop a health protocol education model that follows the needs of the community and the culture of public education.

One of the health protocol education models that we want to develop is the health protocol education model, which is integrated with the pentahelix-based protocol of tri hita karana. Another concept of the pentahelix was proposed by Igor Calzada (Kismartini et al 2020). This concept is a collaboration of many stakeholder groups (multiple stakeholders), independent of each other, to achieve their development goals, economic, and social. Calzada added nongovernmental organizations (NGOs) as the fifth spiral. Therefore, according to Calzada, the pentahelix concept is a model of collaboration that involves many stakeholders, including academics, entrepreneurs, civil society communities, nongovernmental
organizations, and the government (Calzada 2020). In addition, the concept of Pentahelix is discussed further, with Pentahelix in the form of scholars who provide innovation through the latest science, the government that promotes the implementation of activities, the private sector as economic actors, borrowing capital, and commercializing products. Support for NGOs and civil society communities who need to actively participate in social and economic development activities (S Halibas et al 2017). The Indonesian pentahelix concept was originally used as a model for tourism development. This is regulated in the Regulation of the Minister of Tourism of the Republic of Indonesia Number 14 of 2016. According to another explanation, the pentahelix concept applied in Indonesia uses five stakeholders, university-level scholars, business, and economics, for collaborative activities. Society, government, and media (Sudiana et al 2020). Over time, this concept has been used not only to address problems in the tourism sector. Historically, Pentahelix implementations have been used in other sectors. In addition to the Pentahelix concept in developing this educational model, it also uses local wisdom; one of the local pearls of wisdom possessed by the Balinese people is Tri Hita Karana.

Tri hita karana is one of the elements of Balinese culture inherited from ancestors, which means three causes of happiness (Mandra and Dhammananda 2020). Tri Hita Karana consists of relationships with God Almighty (Parhyangan), (2) relationships with fellow human beings (Pawongan), and (3) relationships with the environment (Palemahan) (Jaya 2019). The integration between innovative models and Tri Hita Karana can foster enthusiasm and motivation in the educational process (Narayani et al 2019) and create a conducive learning environment (Pradnyawathi and Gst 2019). Education with the Tri Hita Karana concept has succeeded in encouraging students to have reasoning and master a concept that can be used to help them in solving problems (Winaya 2019). Based on this description, it can be said that the integration of Tri Hita Karana has a positive impact on the learning process. The development of a health protocol education model when integrated with pentahelix based on the tri hita karana concept in handling COVID-19 in Buleleng Regency has never been developed before in handling the COVID-19 pandemic in Buleleng. Therefore, the novelty of this research is to produce a product in the form of a health protocol education model if it is integrated with pentahelix based on the tri hita karana concept in handling COVID-19, which can later be used as a model for dealing with the pandemic, not only the COVID-19 pandemic but also other pandemics. In addition, the novelty of this development is also based on local Balinese wisdom, namely, tri hita karana. The concept of Tri Hita Karana (THK) is a concept of harmonization of relationships that are always maintained by the Balinese Hindu community, including Parahyangan (human relations with God), Pawongan (human relations), and Palemahan (human relations with the environment). By adhering to local Balinese wisdom, namely, the THK concept, it is hoped that the Balinese people, especially Buleleng, will be able to face various epidemics/diseases or pandemics in the future.

2. Materials and Methods

The research is development research that refers to the prototyping model according to Nieven, which covers (1) preliminary research, (2) the prototyping stage, and (3) the assessment stage. Preliminary research has several purposes, such as identifying problems that appear in the implementation of health protocol education in Buleleng Regency and collecting information regarding the handling of COVID-19, the education model of the health protocol used, and infrastructures used by the COVID-19 task force in Buleleng. Model edukasi protokol kesehatan yang digunakan, dan sarana prasarana yang digunakan satgas Covid-19Buleleng dalam penanganan Covid-19. To reach the goals, preliminary field research was conducted. The preliminary research was conducted by spreading a questionnaire, interviewing the task force, and observing the COVID-19 handling process in the Buleleng regency. After analyzing the problem and needs, a literature study is carried out. In the literature analysis stage, the collection of theoretical studies that will answer the existing problems is carried out. In addition, a review of the research results that can be used as a background for future research is also carried out. The study conducted was a study of the pentahelix integrated health protocol education model based on Tri Hita Harana. Furthermore, the 3 M and 3T health protocol education models are used because the characteristics and principles of 3 M and 3T are considered capable of making the handling of COVID-19 better in Buleleng Regency. The study of literature related to the characteristics of the Buleleng community (covering the background and level of public knowledge about the COVID-19 virus) became the material for planning a health protocol education model. The study of the handling of COVID-19 in 2020 in Buleleng Regency became the basis for developing a health protocol education model. A literature review on the characteristics of 3 M and 3T was also carried out to design the process of handling COVID-19, which will be applied in implementation activities in the field, especially in Buleleng Regency. In the end, the information obtained based on problem analysis and literature study was used as material for product development design, namely, the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana along with its supporting devices and instruments to assess product quality.

The prototyping stage covers two steps: 1) The design stage. After conducting a needs analysis and literature review, a design of the product to be developed is drawn up. At this stage, a draft of the pentahelix integrated health protocol education model in handling COVID-19 based on Tri Hita Karana in Buleleng will be designed along with supporting devices in the form of a health protocol and product quality assessment instruments for development. The health protocol education model intended for handling COVID-19 in Buleleng is the 3 M and 3T health protocol education model. This health protocol model was further designed to include components of the COVID-19 health protocol education model for handling COVID-19. The design of the health protocol education model was then presented in the form of Draft I of the health protocol education model book for...
handling COVID-19 in Buleleng. 2) Evaluation and Revision Phase. The evaluation aims to test the validity based on expert judgment. Draft 1 produced at the product design stage is then assessed for validity by experts. The instrument for assessing the quality of the health protocol education model for handling COVID-19 was asked for expert opinion and assessment from Ganesha Education University (UNDIKSHA) lecturers, the Buleleng COVID-19 task force, the community, and the private sector. This is done to obtain suggestions and improvements to the assessment instrument that will be used in this study. For the validity of the model and supporting devices for the implementation of the model, 3 people from the Buleleng COVID-19 task force will be asked for expert opinion and assessment. After being validated by experts, an analysis of the validation results will be carried out. If the results of the data analysis of the validity of the first draft are valid, then the product can be used in trials. If it is valid and feasible with minor revisions, then revisions are made as suggested by experts, and the revised product can be used in trials. However, if the results of the analysis show that it is not valid and not feasible, then a major revision is carried out. The results of major revisions must be revalidated by experts and practitioners to obtain a valid and feasible revision product. Furthermore, the results of this validity evaluation are referred to as Draft II. In the assessment stage, a field trial was conducted on draft II, which had been obtained from the previous development stage. This trial was carried out by applying the health protocol education model and its supporting devices in its implementation in Buleleng Regency. This is intended to determine the practicality and effectiveness of the implementation and use of development products in the field. After the trial was carried out, the analysis of the test results will then be carried out. If the results of product analysis data have met the criteria of practicality and effectiveness, then the resulting draft is the final product. If the results of the analysis show that they do not meet the criteria of practicality and effectiveness, then a product revision is carried out. The results of the revision must be retested until a practical and effective revision product is obtained.

The subjects of this research trial were the people in the Buleleng subdistrict. The Buleleng Covid-19 Task Force and the community were given an assessment questionnaire to determine the effectiveness score of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana and its supporting devices and to obtain suggestions for consideration in revisions. The trial subjects consisted of expert trials, in this case, 3 people from academia, 3 people from the Buleleng COVID-19 task force, and 1 person from the public and private sectors. Field trials are intended to see the effectiveness of the application of the developed product. Draft II of product development was piloted at Battalion 741 Buleleng. The instruments used in this study include instruments to assess product quality, which include aspects of validity and effectiveness. Before the instrument is used to assess the validity and effectiveness of the product, it is first necessary to validate the instrument to be used by asking for expert judgment to provide an assessment and suggestions for improvement directly on the instrument text. Therefore, a research instrument validation sheet is needed that will be used by experts to assess all instruments that will be used in research. Validation of all instruments in the study includes aspects of instructions, content, and language. The expert judgment from the components of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana and the completeness of the procedure is used to obtain data on the validity of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana and the completeness of the procedure. The assessment on the validation sheet uses a five-point Likert scale: invalid (score 1), less valid (score 2), moderately valid (score 3), valid (score 4), and very valid (score 5). The indicators of the pentahelix integrated health protocol education model for handling COVID-19 are based on Tri Hita Karana and the completeness of the health protocol, which includes 3 M and 3T.

The Covid-19 task force practical questionnaire in Buleleng was used to determine whether the pentahelix integrated health protocol education model for handling Covid-19 based on Tri Hita Karana that was developed could be applied to the people of Buleleng Regency based on the assessment of the supervisor. Thus, the practical aspects are based on the assessment of the Buleleng COVID-19 Task Force, which includes ease of implementation, the accuracy of estimated time allocation with implementation, and the possibility of achieving the goal of implementing the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana. Furthermore, the value scale used is a Likert scale with a scale of five, namely, strongly disagree (score 1), disagree (score 2), doubtful (score 3), agree (score 4), and strongly agree (score 5). The assessment questionnaire of the Buleleng regency community. The data collected with this instrument are an assessment from the people of Buleleng Regency regarding the ease of implementing the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, which is implemented in Buleleng Regency. This Buleleng Regency community assessment questionnaire consists of several questions that represent the ease of use aspect, with the available answer choices in the form of “Yes” and “No”. Furthermore, to determine the implementation of the components of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, an observation sheet on the implementation of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was used. The effectiveness assessment instrument, the effectiveness of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, was determined by the following criteria. (1) The people of Buleleng Regency appreciate the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana. This questionnaire was used to measure the appreciation of the people of Buleleng Regency toward the Tri Hita Karana-based integrated health protocol education model for handling COVID-19 based on Tri Hita Karana. Furthermore, the data from this
The effectiveness of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was declared to be practical if the actual score of appreciation of the people of Buleleng Regency toward the Tri Hita Karana-based integrated health protocol education model for handling COVID-19 based on Tri Hita Karana is at least in the practical category. The practicality of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was measured based on the results of an assessment from the Buleleng Covid-19 Task Force related to the ease of implementing the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana and its supporting devices in the field. The scores obtained from the practicality questionnaire from the Buleleng Covid-19 Task Force are then added up to become the actual practicality score from the Buleleng Covid-19 Task Force. The education model of the integrated health protocol pentahelix for handling COVID-19 based on Tri Hita Karana that was developed is said to be practical if the assessment from the Buleleng Covid-19 Task Force shows that the actual practicality score of the Buleleng COVID-19 Task Force is at least in the practical category. If the level of practicality is below practical, it is necessary to make a revision based on input from the Buleleng COVID-19 Task Force. The revised results will be used in the next trial. The practicality of the model is also measured based on the results of community assessments obtained from the community response questionnaire instrument. This analysis is carried out by categorizing the level of practicality of the community. The assessment is determined by summing all scores from the community and determining the average community score to be the actual practicality score of the community response. Furthermore, based on the overall analysis, the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana that was developed is said to be practical if 80% of the community gives an assessment that shows at least the practical category. In the practicality questionnaire from the public’s response, there are two aspects: the ease of understanding the model and the ease of implementing the model. After the analysis is carried out as a whole, it is also necessary to carry out an analysis of each aspect. The analysis is carried out by summing all scores from the community and determining the average community score to be the actual practicality score for each aspect of the community response. The effectiveness analysis level, the effectiveness of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, is known based on public appreciation questionnaire data for the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana and based on data obtained from the COVID-19 task force of Buleleng Regency.

The effectiveness assessment based on the Buleleng community appreciation questionnaire for the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana is determined by summing all the scores obtained by the people of Buleleng Regency and determining the average community score to become the actual score of the effectiveness of the Buleleng Regency community appreciation. Furthermore, the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana is said to be effective if the actual score of appreciation of the people of Buleleng Regency toward the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana is at least in the effective category. The analysis of every aspect of the appreciation of the people of Buleleng Regency toward the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana is carried out by determining the average score for each aspect of the appreciation assessment.

In this study, two stages of testing were carried out, namely, the validity test and the practicality test. From the validity test, the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was declared valid in the Very Valid category with a score of 92.87. For the practicality test of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, the assessment results from the COVID-19 Task Force showed a score of 94.56, which indicates a value that is very practical to use. While the practicality score of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, which was developed, was measured based on the results of community assessments obtained from community responses, a score of 90.76 was obtained, which is very practical. The next step is to test the effectiveness of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana with a public appreciation questionnaire for the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana and based on data obtained from the COVID-19 task force. 19 Buleleng Regency.

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3. Results and discussion

3.1. Result

The results of testing the effectiveness of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana show that this educational model is effectively implemented because it can increase public appreciation for implementing health protocols. This is shown from the knowledge and level of public awareness in carrying out existing programs on the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, namely, 3 M (Wearing masks, Keeping distance and Washing hands) and 3T (Test, Search, Follow-up). This can be seen from the increase in the average score from before to after being given the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana. More complete data are shown in Table 1. From the results of the analysis, it was found that the difference in public appreciation before and after the implementation of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was 3.11. This means that there has been an increase in public perception after the use of the Tri Hita Karana-based education model for the pentahelix integrated health protocol for handling COVID-19. To strengthen these results, a t test was carried out again to show the effectiveness of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana.

Before the t test, the prerequisite test was carried out, and the prerequisite test was the normality test and homogeneity test. Normality test with Kolmogorov–Smirnov. The results of the analysis show that all data come from groups of data that are normally distributed, which can be indicated by the value of Sig. > 0.05, which is presented in Table 2. After the normality requirements are met, the next prerequisite test is the homogeneity test. In this study, the homogeneity test was carried out with two analyses, namely, the homogeneity test of variance with Levene’s test of equality.

The results of the homogeneity analysis carried out show the same meaning, namely, the research data come from homogeneous data groups, which can be seen from the sig value in Table 3. Shows a value of more than 0.05. Value of Sig. Levene’s Test of Equality test is 0.64 with an F value of 0.23. The results of the prarat analysis show that the research data come from the normal and homogeneous data group, so the t test can be carried out. The results of the t test show that the value of sig. Shows <0.05, which is 0.00, which means that there is a difference before and after the implementation of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana.

3.2. Discussion

The results showed that the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was effectively used to increase public appreciation for implementing health protocols. This increase in public perception can be seen from the increase in public knowledge about COVID-19 and the target for doing 3 M and 3T. With the implementation of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana, of course, the public will have better knowledge. The existence of education that follows the character of the community will be able to grow public knowledge (Indy et al 2019; Leal Filho et al 2018). In addition, education that involves all components will make the educational process more conducive (Darling-Hammond et al 2020; Usman 2016). Likewise, this educational model is integrated with the pentahelix. The pentahelix in question is (government, community, academia, private sector, and health service provider facilities)(Latif et al 2020). The collaboration with the pentahelix model based on regional values or local wisdom can be used as an alternative to reduce the spread of the COVID-19 virus(Ardiansyah Fikky and Pradana 2021). The pentahelix model collaboration is believed to be able to realize community independence more quickly so that they are
not too dependent on the government during or after a disaster occurs (Rizkiyah et al. 2019). Therefore, it can be said that the role of Pentahelix in disaster prevention is very effective. What more by involving local wisdom? In this case, the local wisdom used is Tri hita Karana.

Tri Hita Karana is a relevant and universal concept that teaches us to always maintain three harmonious relationships (Adhitama 2020; Handayani et al. 2017). The concept of Tri Hita Karana teaching introduces the values of the reality of living together in terms of inculcating religious values, civilizing social values, respecting gender, inculcating the value of justice, developing democratic attitudes, inculcating an attitude of honesty, showing an attitude of honesty, increasing attitudes and fighting power, developing an attitude of responsibility, and respect for the natural environment (Jaya 2019; Pradnyawathi and Gst 2019). Tri Hita Karana can be used as a reinforcer and foster the growth of education rooted in local wisdom with a global perspective for sustainable education development (Mudana 2017; Sriasih et al. 2019). In life, this world by nature has a unity that is interrelated with one another. Therefore, a harmonious life can be realized, and there is mutual need among creatures in the life of this universe. The concept of the Tri Hita Karana teachings has summarized these relationships, whether it is the relationship with God, with others, or with the natural environment. This concept appears closely related to the existence of social life in Bali. Not only does it result in the realization of a territorial alliance and a living partnership for common interests in society, but it is also a partnership in the common belief to worship Sang Hyang Widhi Wasa, God Almighty. Based on this, what characterizes traditional villages in Bali has at least three main elements, namely, territorial, community, and sacred places to worship God/Sang Hyang Widhi Wasa. The harmonious combination of these three elements is the basis for creating a sense of life that is comfortable, peaceful, and peaceful both physically and mentally.

In handling COVID-19 cases with the Tri Hita Karana concept, people are accustomed to increasing the Prahyangan, pawongan, and weakening concepts. The activities carried out by the community related to this are Prahyangan 1) diligent in praying closer to God; 2) praying, panama, tilem, carrying out the god yadnya, of course, all by obeying the applicable health protocols; 3) making ceremonial means to repel reinforcements, pandanus medui, segehan wong-wongan; 4) performing yadnya sesa and daily prayers; 4) organizing the Segara Kerti ceremony, organizing religious activities by only involving the main parties; and 5) will not recede in the determination to perform Yadnya or offerings. Religious ceremonies continue to take place during the COVID-19 pandemic as long as they continue to apply health protocols, and there are many other activities that involve a harmonious relationship with God. Efforts to avoid COVID-19 according to the Hindu concept need to make efforts on a scale and niskala, both of which are carried out as a form of devotion to God. Regarding efforts to tackle the coronavirus outbreak, Hindus believes that in addition to being on a scale, it is also necessary to carry out niskala efforts, following various government recommendations, and adherence to health protocols is an effort on a scale, while niskala can be done by carrying out rituals/traditions handed down by the ancestors (Mertayasa 2020). The implementation of religious values seems to be increasing during the COVID-19 pandemic, and victim ceremonies and chanting of prayers are carried out more intensely in line with the development of the outbreak, which has caused many casualties. This is a form of improving human relations with God in the form of complete surrender because everything that happens, including the COVID-19 pandemic, is the power of God (Lilik 2021). Surrendering oneself to God will make a person’s heart calmer and able to control himself to prevent the spread of COVID-19.

The concept of Pawongan is the relationship between humans and fellow human beings (Adhitama 2020). The implementation of pawongan in Balinese indigenous peoples can be seen from the presence of members of indigenous peoples called krama adat, social relationships that exist in Balinese society such as family, and social groups based on professions known as sekao (Yasa 2020). The activities carried out by the community related to the pawaongan concept include 1) Keep your distance; 2) Keep good relations between each other, greet each other but keep your distance from others, do not shake hands but include both hands in front of the chest to say hello to others; 3) Help others, remind each other to stay at home, share with each other masks, share if you have more fortune to those in need; 5) When wearing a braya at a neighbor who has an event, still comply with health protocols and reduce crowds; 6) Communicating only by telephone because in the conditions of covid 19 it is not allowed to meet face to face with many people or with friends, even though making calls with good and polite words; 7) Doing mutual cooperation (ngayah) while also paying attention to health protocols and reducing the crowd to a maximum of 12-20 people; 8) Carrying out pawongan always speaking or speaking, always saying good words and thinking positively; and 9) Implementing clean and healthy living behavior by keeping a distance, using a mask and washing hands with running water with soap and hand sanitizer. By carrying out these activities, harmonious relationships will continue to run well while maintaining health protocols. The existence of a harmonious relationship in the community will certainly have a good impact on the community. Given that to prevent the spread of COVID-19, it does not just take a few people, but togetherness is needed. This can be created by the concept of pawongan.

The concept of Palemahan is a harmonious relationship between humans and the environment (Parmiti et al. 2021; Parwati 2021). The essence of Palemahan is to take care of the surrounding environment so that it benefits the lives of creatures (Lilik and Mertayasa 2019; Pradnyawathi and Gst 2019). This palemahan concept can develop attitudes and behaviors to maintain sustainability and balance the natural environment to keep it clean and healthy (Suanthara 2021). Therefore, the existence of the palemahan concept will develop an attitude of caring for environmental cleanliness. Activities carried out by the community related to weakening activities include 1) always taking care of nature, not over-exploiting
nature, and making use of nature in moderation; 2) inviting the public to take care of nature and maintain the cleanliness of the surrounding environment; 3) maintaining personal hygiene and the surrounding environment to minimize COVID-19; 4) planting trees and cleaning the aquatic environment in the clean water area of the village; 5) keeping the environment clean without germs by spraying disinfectant in our environment; 6) not throwing used masks in any place so that during the pandemic, the environment remains clean and sterile; 7) preserving the environment by carrying out the tumpek wariga ceremony for these plants so that they remain sustainable; 8) maintaining personal hygiene and the surrounding environment to minimize COVID-19; and 9) keeping the environment clean by throwing garbage in its place. Therefore, with these activities, of course, a healthy and clean environment can prevent the spread of COVID-19 by maintaining environmental cleanliness.

Therefore, the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana is effectively used to increase public appreciation for implementing health protocols. The novelty of this research is to produce a product in the form of a health protocol education model if it is integrated with pentahelix based on the tri hita karana concept in handling COVID-19, which can later be used as a model for dealing with the pandemic, not only the COVID-19 pandemic but also other pandemics. In addition, the novelty of this development is also based on local Balinese wisdom, namely, tri hita karana. The concept of Tri Hita Karana (THK) is a concept of harmonization of relationships that are always maintained by the Balinese Hindu community, including Parahyangan (human relations with God), Pawongan (human relations), and Palemahan (human relations with the environment). By adhering to local Balinese wisdom, namely, the THK concept, it is hoped that the Balinese people, especially Buleleng, will be able to face various epidemics/diseases or pandemics in the future. The weakness of this research is the limited number of samples used to test the effectiveness. Therefore, it can be recommended for research with a larger number of trial samples.

4. Conclusion

The results showed that the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana was effectively used to increase public appreciation for implementing health protocols. This is shown by the increase in the average score before and after the implementation of the pentahelix integrated health protocol education model for handling COVID-19 based on Tri Hita Karana. Therefore, it can be recommended as a solution to prevent COVID-19.

Ethical considerations

Not applicable.

Conflict of Interest

The authors declare that they have no conflict of interest.

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