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Integrating Important Vaccination Issues into the Banjar Community Religious and Socio-Cultural Values

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Abstract

Background: The crucial issues of vaccination need to be integrated between medical science, the Islamic religion, and the religious-social-cultural values of the community. The integration is essential to build public trust in the vaccination program.

Objective: to integrate the crucial issues of vaccination into the religious and socio-cultural values of the Banjar community.

Methods: The research was designed qualitatively based on a phenomenological paradigm through field observations and in-depth interviews with Banjar community participants who did not vaccinate and participants who were experts in medicine-immunology-Islamic law-social-cultural in the Banjar community.

Results: The research showed that some Banjar people still did not understand the principles of vaccination, the concept of istihalah, and herd immunity. The Banjar community was a religious society that liked to work together and care about its fellow citizens.

Conclusion: The principles of vaccination, istihalah, and herd immunity can be integrated with the Banjar community, which is religious, like working together and caring about their fellow citizens to build public trust in the vaccination program.

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INTRODUCTION

Efforts to find a vaccine were the most significant breakthrough in the field of medicine in the current century. Vaccination has been successful in preventing certain diseases. Vaccination has provided invaluable benefits in the field of preventing infectious diseases [1].

Efforts to find a vaccine widely used in humans took a very long time, strictly maintained safety aspects, went through a highly complex process, passed stringent regulations and rules from WHO, required substantial resources, and cost a lot of money. Finding one type of vaccine could take decades. For example, the discovery of the Ebola vaccine took 43 years, the dengue vaccine more than 20 years, and the CMV and HIV vaccines have not even been realized to date. The average time required was ten years. So, it was very ironic and wrong if the effort to find a very long vaccine that cost a lot of money was rejected just for certain simple and unscientific reasons[1-3].

The vaccination program often encounters various obstacles. The obstacles include public rejection of vaccines, lack of public trust, lack of public participation, issues of vaccine haraam, doubts about the safety and effectiveness of vaccines, concerns about vaccine side effects, lack of adequate resources, hoax news, and the emergence of the anti-vaccine movement[4-9]. The obstacles can affect the achievement of vaccination coverage.

Vaccination coverage in South Kalimantan Province has not yet been achieved. Achievement of complete primary vaccination in the province has decreased in the last three years. In 2023, the achievement of complete primary vaccination was only 75.4 percent of the target of 92.9%[10]. MR (Measles-Rubella) vaccination achievement in the province was still low, namely around 46.67 percent in 2018. The reason is that many people are still not sure about the halalness of vaccines[11].

Building public trust in the vaccination program is not easy. The vaccination program must be communicated well and easily understood by the public. The success of the vaccination program was very dependent on the approach taken. A religious-social-cultural approach that is collaborative and involves religious or community leaders is essential for the success of the vaccination program[6,12]. The religious-social-cultural values of the community need to be integrated into the education of the vaccination program.

In the context of vaccination education for the community in South Kalimantan Province, the Banjar community was the majority of the message recipients. The Banjar community was known to be religious, adhere to their religion, and tend to be fanatical[13,14]. Banjar community also had socio-cultural characteristics. The religious-social-cultural values of the Banjar community need to be integrated into the education of the vaccination program. So far, there has been no research on integrating important vaccination issues into the religious-social-cultural values of the Banjar community. This research aims to combine the essential topics of vaccination with the religious and socio-cultural values of the Banjar community.

METHODS

This research was a non-experimental study. The research was designed qualitatively based

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on a phenomenological paradigm through field observations and in-depth interviews with the Banjar community participants who did not receive the COVID-19 vaccine and the Banjar community health-religious-social-cultural expert participants. The expert participants consisted of one participant doctor who served as head of the health service, one participant doctor in the field of immunology, one participant postgraduate lecturer at UIN Antasari Banjarmasin in the field of Islamic law, one participant postgraduate lecturer at UIN Antasari Banjarmasin in the field of Banjar community religion, and one partici-pant postgraduate lecturer at UIN Antasari Banjarmasin in the socio-cultural field of Banjar community. The first interview was conducted with three Banjar community participants to find out the community's understanding of essential vaccination issues. The participants were obtained by accidental sampling. Subsequent interviews were conducted with the expert participants to find out the health-religious-social-cultural values of the Banjar community, which can be integrated into important vaccination issues. The results of the interviews were audio recorded and analyzed qualitatively to find an integration of the critical issues of vaccination into the religious and socio-cultural values of the Banjar community. This research was under the Ethical Clearance issued by the Medical Ethical Clearance Commission (KEPK) Faculty of Medicine Universitas Lambung Mangkurat with letter number 289/KEPK-FK ULM/ EC/ IX/ 2023.

RESULTS

The research showed that some Banjar people still did not understand the principles of vaccination, the concept of istihalah, and herd immunity. The Banjar community was a religious society that liked to work together and care about its fellow citizens. Tables 1 and 2 represent the results of the study.

DISCUSSION

One in three Banjar community participants refused vaccination for himself and his family because he did not fully understand the principles of vaccination and therefore believed that vaccination was not beneficial for himself, his family, other people, and society. Another participant refused vaccination for himself and his family because he had diabetes mellitus and AEFI (Post-Immunization Adverse Event) occurred in his family in the form of an increase in blood pressure, allergy to the first dose of vaccine, and a history of asthma recurrence when taking medication or other foreign substances. One other Participant wanted to be vaccinated but was contraindicated by the doctor because he had a history of experiencing Guillane-Barre Syndrome twice. The principles of vaccination are the terminology of vaccination and immunization, benefits of vaccination, side effects of vaccination, safety of vaccines, vaccine production, and the objectives of the vaccination program.

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Table 1. The Important Vaccination Issues Based on In-depth Interviews with Banjar Community Participants who did not receive the COVID-19 Vaccine

The Vaccination Issues	Participant 1	Participant 2	Participant 3
Vaccination status	Never been vaccinated	Never been vaccinated	I had the meningitis vaccine 13 years ago
Reasons for not getting vaccinated	Had diabetes mellitus His family had myalgia after being vaccinated. His family's blood pressure experienced a significant increase after being vaccinated. The information from other people that vaccination can cause side effects, for example, drowsiness and fatigue He doubted the halalness of vaccines that contain porcine trypsin in the vaccine-producing process.	It is ignorance and lack of understanding of vaccination. He considered vaccines to be useless, and he thought there was no difference between people who were vaccinated and those who were not vaccinated. He shared the same views as family and friends not to vaccinate	There was an absolute contraindication to the vaccine, namely a history of two episodes of Guillane Barre Syndrome.
Willingness to vaccinate	Don't want to be vaccinated	Don't want to be vaccinated	Want to be vaccinated
Family support	His family supported getting vaccinated. He disagreed with his children's being vaccinated.	His family did not support getting vaccinated. He disagreed with his children's being vaccinated.	His family did not support getting vaccinated because there was a contraindication to vaccination. He agreed with his children and was vaccinated.
The issue of halal and haram vaccines	There are doubts about the halalness of vaccines because there are rumors about pork elements in vaccine production on social media.	Not aware of the issue of vaccines containing porcine trypsin	I am fully confident in the halalness of the vaccine because the final vaccine product did not contain porcine trypsin
Knowledge of *istihalah*	I knew little about istihalah and could only mention one example of changing wine into vinegar.	I didn't know about istihalah	Knew a lot about istihalah and could mention various examples of istihalah practices in the daily life of the Banjar community
Herd immunity	He had heard the term herd immunity, but he didn't understand the term	Not knowing about herd immunity	Understanding herd immunity

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Table 2. The Important Vaccination Issues Based on In-depth Interviews with Participants who are Experts in Medicine, Immunology, Islamic Law, and the Religious-social-cultural Values of the Banjar Community

The Vaccination Issues	Description
Principles of vaccination	The community needs to understand several principles of vaccination so that vaccination can be fully understood so that misinformation and misunderstandings do not occur. These principles include vaccine terminology, vaccination, immunization, benefits of vaccination, side effects of vaccination and AEFI, vaccine safety, types of vaccines, vaccine production, catalysts in vaccine production, vaccination programs, and vaccination objectives.
Goals of the vaccination program	The national vaccination program is not only to protect individuals from infectious diseases but also families, other people, and society, both on a local and national scale, and it can even expand to regional and global scales.
Vaccine production	Generally, conventional vaccine production requires four basic steps: propagating microorganisms in culture media, isolating microorganisms from culture media, purifying microorganisms from vaccine production residues, and formulating the final vaccine product. The vaccine production process in the modern era is complex, strictly monitored, and regulated by WHO. The active vaccine ingredient is produced through a complex process. Most vaccines do not use porcine in the manufacturing process. However, a small percentage of specific vaccine production requires porcine trypsin as a cell or microorganism culture medium catalyst. The cells or microorganisms are then processed to produce pure vaccine antigen material. The pure vaccine antigen material has absolutely no contact, either directly or indirectly, with porcine trypsin. Next, the purification process is repeated several times to produce a final vaccine that no longer contains porcine trypsin.
Fiqh of vaccination	In general, the fiqh of vaccination is mubah (permissible) if the vaccine contains halal elements and haram if it contains haram elements. The fiqh of vaccination can change according to situations and conditions and can become makruh, sunnah, or mandatory.
Vaccine safety and halal issues	The public does not need to doubt the halal and safety of vaccines. Vaccines are safe and halal to use. Vaccine safety has been monitored continuously, both when the vaccine is given and after the vaccine. If vaccine production requires a porcine trypsin catalyst, the vaccine has been processed in such a way as to produce a final product that is free of porcine trypsin.

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Application of istihalah	Istihalah is a change in an object's essence, nature, and characteristics into a new object that is different from the original object. This change can cause a change in the halal or haram status of an object. The scholars have agreed regarding the existence and permissibility of using the rule of istihalah. However, legally, scholars had different opinions regarding the scope and conditions of its application. This difference of opinion also applied to the production of porcine trypsin-catalyzed vaccines. Some scholars believed that the vaccine could be considered halal if the haram ingredients underwent a significant chemical transformation during the vaccine manufacturing process. Other scholars believed that vaccines containing haram ingredients were still forbidden.
Herd immunity	The socio-cultural aspects of the Banjar community- such as helping, working together, gathering in majlis ta'lim, and congregational prayers could play an essential role in strengthening efforts to achieve herd immunity and protect public health.

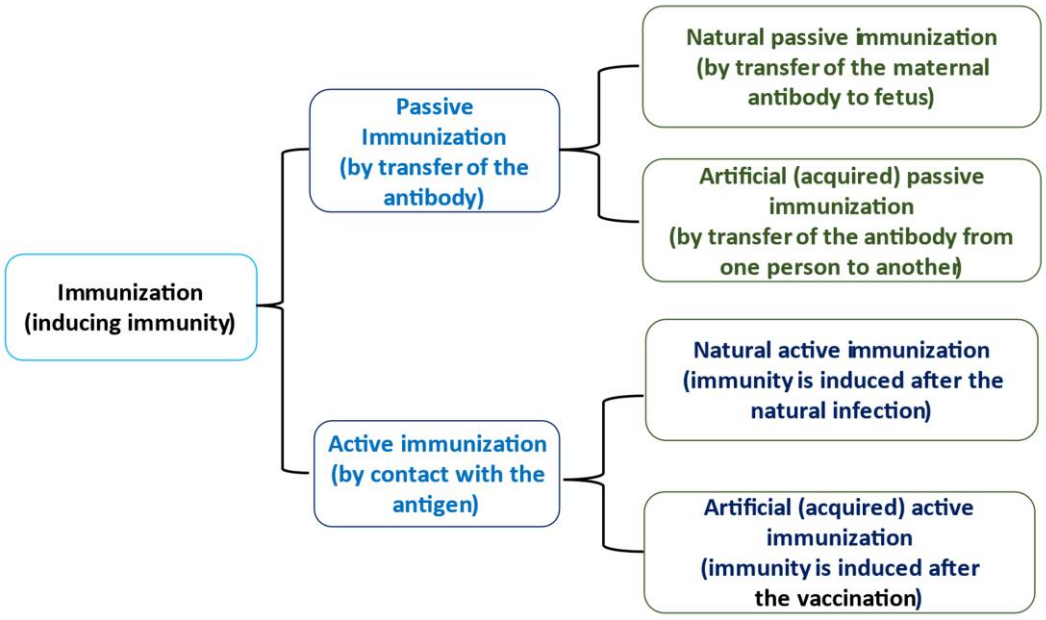

Figure 1. The classification of immunizations. Vaccination is classified as artificial active immunization

Immunization and vaccination are two different terms. *Immunization* is the process of inducing a person's body's immunity to the disease via the transfer of the antibody or contact with the antigen. Inducing immunity by transferring the antibody is called *passive immunization,* while inducing immunity via contact with the antigen is called *active immunization*. Passive immunization cannot provide long-term protection because the body gradually metabolizes the transferred antibodies, and there is no acquisition of immune memory. Active immunization has the

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potential for long-term protection due to the acquisition of immune memory. Active immunization is divided into *natural active immunization* and *artificial (acquired) active immunization*. Natural active immunization is naturally formed after being infected with a pathogen (a germ that causes disease). Artificial active immunity is formed after vaccination. *Vaccination* deliberately introduces a vaccine into the body to trigger the immune response to the disease. Vaccination can cause immunity but does not always produce immunity, while immunity can be induced by other means besides vaccination[15-22]. In other words, inducing immunity via vaccination is classified as artificial active immunization, or vaccination has the identical meaning as artificial active immunization (Figure 1).

Participant 2 thought vaccination was not valuable and that there was no difference between vaccinated people and those who were not vaccinated. This assumption occurred because Participant 2 did not understand the principles of vaccination at all. Vaccination has been scientifically proven to increase the body's immunity. The body's immunity that is formed is specific to the antigen in the vaccine, like a lock and key. For example, COVID-19 vaccination only provides explicit immunity for COVID-19, not other diseases. Therefore, there is no difference between individuals vaccinated against COVID-19 and those not vaccinated against COVID-19 regarding the risk of being infected with other diseases, such as influenza, diarrhea, urinary tract infections, etc.

In principle, vaccination is helpful for stimulating adaptive immunity (acquired/specific immunity). Adaptive immunity is immunity that is formed after contact with the antigen. Adaptive immunity has four primary characteristics: antigen specificity, immunological memory, diversity, and self/non-self-recognition ability. Adaptive immunity is divided into cellular immunity and humoral immunity. Adaptive cellular immunity is mediated by T cells, while adaptive humoral immunity is mediated by B cells. T cells stimulated by the antigen proliferate into cytotoxic T cells, helper T cells, or memory T cells. Cytotoxic T cells play a role in destroying cells infected with viruses, and helper T cells play a role in assisting cellular and humoral immune responses, and memory T cells play a role in antigen memory. B cells stimulated by the antigen differentiate into plasma and memory B cells. The plasma cells secrete antibodies. Antibodies can recognize and bind antigens. Memory B cells maintain antigen memory and protect individuals from subsequent infections[19,22]. In summary, vaccination not only stimulates B cells to form antibodies (adaptive humoral immunity) and T cells to increase adaptive cellular immunity, but a much more important benefit is to produce immunological memory, both B cell memory and T cell memory. The immunological memory is the basis for the importance of repeat and booster vaccinations to form a more robust and faster immune response when infected by disease-causing germs[23].

As a result of an immune response to the antigen and excipients contained in the vaccine, vaccination can cause several side effects. Most side effects associated with vaccination are mild and temporary. These side effects usually include pain at the injection site or mild fever[24]. Myalgia felt by Participant 1's family after being vaccinated was a mild and temporary side effect. Medically, the mild side effect is not a

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contraindication to getting vaccinated. Based on the perspective of fiqh, vaccination is permissible under this condition. The legal basis is the fiqh rule, which states, "The larger dlarar is eliminated by the smaller dlarar"[25]. Myalgia that arises after being vaccinated is classified as a danger that is smaller than the risk of contracting and transmitting the disease if he does not receive the vaccine. Therefore, vaccinating is chosen to prevent greater risk if not vaccinated.

More serious side effects of vaccination are rare, and they can even be said to be very rare. This profound side effect only occurs in one of the millions of vaccines given. Some individuals may become sensitive to some components or elements of the vaccine. These side effects are believed to be related to differences in individual immune responses[24,26]. The severe allergy experienced by Participant 1's family after vaccination is a contraindication to the vaccine. According to PAPDI (Indonesian Association of Internal Medicine Experts), individuals who experience allergic reactions in the form of anaphylaxis and severe reactions due to the first dose of the vaccine or due to components similar to those contained in the vaccine are not suitable for vaccination[27]. According to IDAI (Indonesian Pediatrician Association), anaphylactic reactions to vaccine components during previous vaccinations are a contraindication to vaccination[28]. Based on the perspective of fiqh, vaccination in the condition is haram. The legal basis is the rule of fiqh, which states that "Harm must be eliminated" and that "Eliminating harm is more important than taking advantage"[25].

On the one hand, giving vaccines helps increase the body's immunity. On the other hand, administering the vaccine to this individual caused a severe allergic reaction. In this condition, vaccination is not given to prevent severe allergy to the vaccine.

One of the side effects associated with vaccination is ASIA (Autoimmune Syndrome Induced by Adjuvants). ASIA is an autoimmune syndrome induced by adjuvants. Adjuvants are substances added to vaccine production to increase the immune response. Post-vaccination autoimmune diseases are rare but should not be taken lightly. These autoimmune diseases include Guillane-Barre Syndrome and type 1 diabetes mellitus. Guillane-Barre Syndrome is one of the neurological diseases most commonly associated with ASIA. Research showed that Guillane-Barre Syndrome could occur up to 10 months post-vaccination[29,30]. According to IDAI, Guillane-Barre Syndrome is a contraindication to vaccination[28]. Based on the perspective of fiqh, vaccination in the condition is haram. The legal basis is the rule of fiqh, which states that "Harm must be eliminated" and that "Eliminating harm is more important than taking advantage"[25].

On the one hand, giving vaccination helps increase the body's immunity. On the other hand, providing vaccination to sufferers of Guillane-Barre Syndrome has the potential to cause the recurrence of Guillane-Barre Syndrome. In this condition, vaccination is not given to prevent the potential recurrence of Guillane-Barre Syndrome post-vaccination.

There is a hypothesis that vaccination can trigger type 1 diabetes mellitus in susceptible individuals. However, various epidemiological studies do not support a causal relationship between vaccination and an increased risk of type 1 diabetes mellitus[31]. In general, there is no

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prohibition for people living with diabetes from being vaccinated unless they are experiencing acute complications. Diabetes patients get priority for vaccination. Patients are advised to monitor blood glucose before being vaccinated. According to PAPDI, people with controlled type 2 diabetes mellitus with an HbA1c of less than 7.5% can receive the COVID-19 vaccine[32]. The type 2 diabetes mellitus suffered by Participant 1 is not a contraindication to getting vaccinated. The Participant only needs to check his blood glucose and HbA1c levels before vaccination. Based on the perspective of fiqh, the law on vaccines in the condition is permissible and can even be sunnah. The legal basis is the fiqh rule, which states, "Harm must be eliminated." A person suffering from diabetes mellitus has a high risk of contracting the disease. Therefore, vaccination is needed for diabetes mellitus sufferers to increase the body's immunity and avoid infectious diseases.

Individuals with hypertension are eligible for vaccination if their blood pressure is less than 180/110 mmHg or there are no acute conditions such as hypertensive crisis[27]. In the case of Participant 1's family, who experienced a drastic increase in blood pressure after vaccination, further research needs to be done to find out the cause of the rise in blood pressure: whether the increase in blood pressure was related to vaccination or was it caused by other factors not related to the vaccination.

To ensure vaccine safety, the government continuously monitors Post-Immunization Adverse Events (AEFI). AEFI is an illness that occurs after receiving vaccination and is thought to be caused by vaccination. It should be noted that AEFI is not only caused by vaccines (vaccine-induced) but can also be caused by various other factors:

- Due to vaccine provocation (vaccine potentiated), for example, febrile seizures after vaccination that occur in children who already have a predisposition to seizures
- Due to errors of the program (programmatic errors), AEFI symptoms occur due to mistakes in vaccine manufacturing and procurement techniques or administration techniques, for example, induration at the site of a subcutaneous (under the skin) injection which should have been given intramuscularly (in the muscle)
- Due to coincidence, AEFI co-occurs as symptoms of another disease. For example, a baby who has congenital heart disease suddenly becomes cyanotic (blueish lips) after being vaccinated.

Most of the AEFIs are not related to vaccination[26]. At this time, the public does not need to worry about AEFI because the implemented vaccination program has maximally reduced the incidence of AEFI. The vaccine given is a vaccine that has been licensed by WHO to suppress AEFI due to vaccine induction. Screening and expert consultation are carried out before administering the vaccine to suppress AEFI due to potentiated and coincidental vaccines. Vaccination is administered by trained health workers with competency certificates to suppress AEFI due to programmatic errors.

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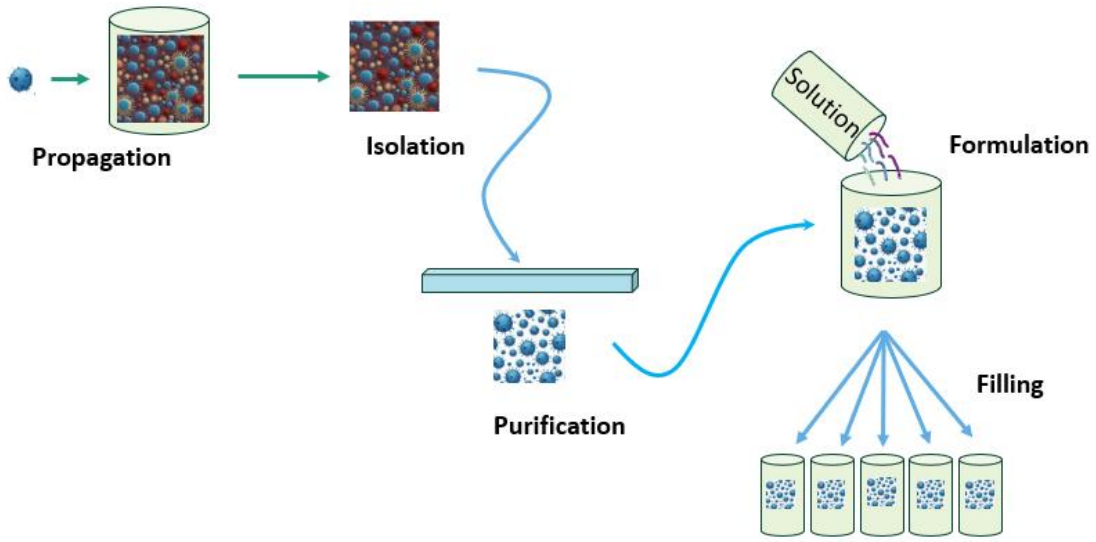

Figure 2. Vaccine Production Stages

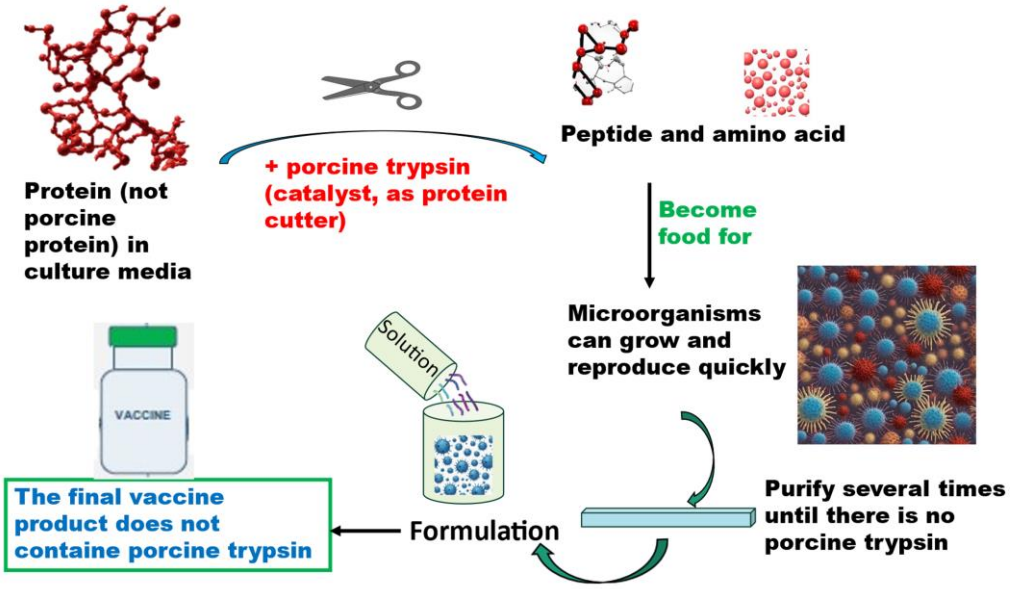

Figure 3. Porcine Trypsin Catalyzed Vaccine Production Process

In general, conventional vaccine production requires four basic steps, namely: Propagation, namely the multiplication of live microorganisms used in vaccines; Isolation, namely the separation of living microorganisms from cells or growth media used at the propagation stage; Purification, namely the removal of all materials that can stick to isolated microorganisms or selective separation of parts of live organisms for use in vaccines; And formulation, namely mixing the purified product in solution to obtain the desired concentration. This stage also includes the addition of preservatives to ensure

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product sterility or prevent cross-contamination during extraction of the dose from the vial. At the end of the manufacturing process, the vaccine is usually filled into vials or syringes and packaged for delivery to healthcare providers (Figure 2)[24].

The addition of porcine trypsin in the vaccine production process was often an issue of debate over the halal status of vaccines. Some people perceived making vaccines as simple as making powder. The vaccine ingredients, including porcine trypsin, were mixed and crushed together. This perception was wrong because the process of making vaccines in the modern era was very complex, not as simple as baking powder. Various stages must be carried out in the vaccine production process. Suppose porcine trypsin is needed for the production of the vaccine. In that case, the porcine trypsin only functions as a catalyst to break down (cut) proteins (large molecules) into peptides and amino acids (small molecules). These peptides and amino acids become food for microorganisms so that microorganisms can grow and reproduce quickly. Porcine trypsin is not eaten by microorganisms at all. Porcine trypsin is analogous to scissors for cutting proteins into peptides and amino acids. The vaccine antigen material has no direct or indirect contact with porcine trypsin (Figure 3)[1,2,21].

The vaccine purification process is then carried out using the ultrafiltration method. Vaccine purification was carried out repeatedly, with dilutions reaching 1:67.5 billion times until only the vaccine product components remain-ed and did not contain porcine trypsin. The final vaccine product must not be mixed with animal-sourced ingredients (including the porcine trypsin). The vaccine production process is strictly monitored based on regulations and rules by authorized institutions such as WHO. Suppose a mixture of animal ingredients is still detected. In that case, the product is considered a failed product that is not of good quality and unsuitable for human vaccination. The quality of vaccine products is strictly tested to ensure product purity, effec-tiveness, and safety. The absence of porcine trypsin in the final vaccine product can be proven by PCR (Polymerase Chain Reaction) and ELISA (Enzyme-linked Immunosorbent assay) examinations[1,2,21,33].

The vaccine production process could be considered to have purified unclean porcine trypsin. Unclean porcine in the vaccine solution has been purified by the stages of washing several times (using a buffer contain-ing a mixture of specific solutions), filtering several times (using natural membranes and ultrafiltration membranes), clarifying, settling, and drying. According to the Hanafi school of thought, unclean porcine is not classified as unclean mughallazhah, so it can be purified like ordinary unclean, with absolute water without mixing it with soil. Solid objects and other holy liquids besides water, such as soapy water and chemicals, can also be used to purify unclean things. In the modern era, many chemical solutions have been found that are stronger than water in removing unclean. The vaccine production process has met the terms and conditions perfectly so that the final vaccine product is sacred and may be used. Istihalah is a change in the original nature and characteristics of an object into another object with new properties and characteristics. In this context, the vaccine solution initially contained porcine trypsin and has been transformed into a halal final vaccine product[34-36].

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When the immunity of vaccinated individuals has an effect at the population level, herd immunity is achieved. Herd immunity is indirect protection from the transmission of infection to susceptible individuals when the proportion of immune individuals is large enough in a population. These population-level effects are often associated with the vaccination program. The vaccination program aims to achieve herd immunity so that non-immune individuals are protected from infectious diseases[15,37,38].

Herd immunity achieved through the national vaccination program is helpful for Protecting individuals who cannot be vaccinated, Protecting individuals who do not respond well to vaccination, Controlling or eliminating disease transmission, Reducing the social costs of disease vulnerability, and guaranteeing national security [39].

In this study, participant 2 did not understand the concept of herd immunity as the main goal of the national vaccination program, so he thought that getting vaccinated did not benefit himself, his family, other people, society, the country, and the world. Participant 2's participation in getting vaccinated protects other people who are not vaccinated, cannot be vaccinated, or have been vaccinated but whose immune systems have failed to form immunity.

Herd immunity has a synergistic relationship with the religious and socio-cultural values of the Banjar community. Based on religion, herd immunity is a form of practicing Islamic teachings. Islam teaches that maintaining the health of individuals and communities is an essential duty of humans as servants of Allah and caliphs of Allah to build the benefit of the people. Al-Qur'an Surah Al-Maidah verse 32 states that whoever preserves the life of one human being, it is as if he has preserved the lives of all humans. The value of cooperation and caring for others to achieve herd immunity is a form of implementing *ta'awun* (mutual help) in goodness to build the common good.

CONCLUSION

The community needs to understand the principles of vaccination to build confidence in vaccination and play an active role in the vaccination program. The production of porcine trypsin-catalyzed vaccine has met the istihalah criteria to be used for vaccination. The vaccination program aims to protect vaccinated individuals and achieve community immunity (herd immunity). Herd immunity is essentially a form of community cooperation to build community immunity. Herd immunity is a form of implementation of the teachings of ta'awun (mutual help), which is classified as a commendable moral

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