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Design of Disposable Dental Cutting Equipment in Accordance with Health Rules in Bali Province

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ABSTRACT

Tooth-cutting is a ceremony that must be carried out by Hindus in Bali. The tradition of the Tooth-cutting Ceremony contains a deep meaning for life. Tooth-cutting ceremonies in Bali vary widely, and teeth are often cut in bulk, so it is feared that disease transmission will occur. The purpose of this study was to design a disposable dental cutter in the province of Bali. The research was carried out with a transformative mixed methods design, namely the researcher used qualitative and quantitative tests. The qualitative test used semi-structured interviews with the Delphi method to 7 experts and 15 sangging practitioners to obtain disposable dental cutting tools according to health rules. After getting an agreement on the disposable tooth cutter, a seminar and hands on was held for the sangging to obtain quantitative data through the Post-test only control design test. The results of the qualitative research using the Delphi method showed that the experts agreed that the new tooth cutting tool was designed to be a disposable device, because this tool did not affect or conflict with the tooth-cutting process. The results of quantitative research on the sangging can accept a disposable appliance designed according to health rules, as evidenced by the Wilcoxon signed Ranks test, the perception of sangging of a disposable tooth cutter with a p value <0.05.

Keywords: sangging, disposable tools, disease transmission.

INTRODUCTION

At the tooth-cutting ceremony, the four incisors and the two left and right canines in the upper jaw are cut, chiseled three times, sharpened and leveled[1]. According to previous research[2], complaints were found after cutting teeth: pain, teeth changing positions, teeth becoming tenuous and even teeth rocking. The results of Sagung's research in 2010[3] show that the average sangging education is high school, the sangging knowledge about dental health is average enough, the behavior towards the tools used is average enough and the sangging procedures for cutting teeth are not the same from each other means Sanggings do not yet have fixed rules for cutting teeth. The tooth-cutting ceremony is very expensive, so mass tooth-cutting is often carried out, both within large families, in the traditional village community, and even tooth-cutting initiated by the local government. This needs attention in terms of hygiene, which includes the sterility of tools, performers cutting teeth (sangging), and participants cutting teeth, because the tools used to cut teeth alternate from one person to another. The equipment used has the potential to spread infection from one person to another. According to Mulyanti & Putri[4], diseases that can be transmitted through the teeth and mouth are: hepatitis, HIV/AIDS, sexually transmitted diseases that manifest in the oral cavity such as syphilis, tuberculosis, herpes and fungal infections. Given the ease of transmission of disease through the teeth and mouth, it is necessary to think about disposable tooth clippers, but at affordable prices and not reducing the meaning of the tooth-cutting ceremony procession and in accordance with health rules. So that there is no fear and doubt about cutting teeth, thus metatah as a pride tradition can be steady and sustainable.

METHOD

The research was carried out with a transformative mixed methods research design, namely the researcher used theoretical glasses as an overreaching perspective which

consisted of qualitative and quantitative data. The qualitative method uses semi-structured interviews with the Delphi method to experts, selected sangging practitioners, to obtain disposable teeth cutting tools in accordance with health procedures. After the disposable tools cut the teeth in accordance with the health rules, they get an agreement. Then conducted seminars and hands on and evaluation using a questionnaire to the sangging with the aim of knowing the ability and response of respondents to the disposable tooth cutting device in accordance with health rules. The Delphi method in this research study uses 7 experts from academics and practitioners. The population in this descriptive study was all sangging in the Bali province. Sampling for quantitative testing using the post test only control group design method, sampling by Multistage Random Sampling, by dividing the sample by district: Badung, Tabanan, Gianyar, Bangli. Up to 35 people. The data obtained from the answers to the questionnaire were tested with the Wilcoxon signed Ranks test.

RESULTS AND DISCUSSION

Bali is a tourist destination, one of the Balinese cultures that cannot be separated from Hinduism is the tooth-cutting ceremony. Cutting teeth is a ceremony that must be carried out by Hindus. According to experts, Hinduism in Bali is a social religia (religious story) that reinforces, for example: if you don't cut your teeth at the “kedituanne makpak tiing betung” so that you start institutionalizing it into a belief if you don't do it, you will feel guilty, so the conclusion is that the tooth-cutting ceremony is very important, and impossible to remove. Experts realize that the act of cutting teeth can cause the transmission of a disease. The awareness is only limited to not being able to cut too many teeth, but the understanding for safe tool design has never been thought of. Experts are very supportive and grateful that health workers want to think about this. Hinduism is very open to changes, of course changes for the better for Hindus wherever they are, in Bali in particular. This statement is in accordance with Ihmori's statement[5] which states that culture is not something that is static, but rather dynamic. Culture can fade or even disappear due to changes and developments of the times. Without any interference from foreign cultures on that culture, it will inevitably change with the passage of time. Culture is human knowledge as a social tool that is used to understand and interpret the environment and its experiences as well as a guide in behaving[6].

The approved tools are as below:

Fig 1: Tools for Teeth Cutting.

There are four tools that come into direct contact with people who have their teeth cut. consists of:

1. Handle / holder, The holder is a tool that does not enter the mouth, only as a tip holder

Fig 2: Handle

2. Tips/tools for teeth cutting.

Is a tool that goes into the mouth for the act of cutting teeth (chisel, file and sharpener). Like the picture below:

Fig 3: Chisel, File, Sharpener

This tool must be replaced at every tooth cut. This tool also needs to be sterilized before cutting teeth. There are four tools used when cutting teeth that come into contact with people / enter the mouth and how to use them:

1. Hammer / Semiti: this hammer is a tool that does not go into the mouth, so if it is not replaced it is okay.

Fig 4: Hammer

2. Chisel: a chisel is a tool that is used for the first time, enters the mouth. This chisel measures five centimeters with a thickness of 1 centimeter, which consists of a sharp tip and a part that is inserted into the handle as a holder. So that it is convenient to cut teeth. This chisel tool can be replaced with a dap-dap rod that is shaped like a chisel.

Fig 5: Chisel

3. Miser: this file cannot be purchased in the form of a manufacturer's item, it's just that it is long so that when used it can hit the lips or gums. This file also has a section that can be inserted into the handle as a tool holder.

Fig 6: Miser

4. Sharpener: made of metal tools inside with a length of 5 centimeters and a thickness of 1 centimeter. The design of the sharpening tool is made from coarse sandpaper No. 500 (fine) and No. 100 (rough) with the double tips technique so that after use it can be removed and replaced with new material.

Fig 7: Sharpener

After the tool is approved by experts and practitioners of sangging, an initial introduction to the sangging is carried out to determine the suitability of the tool with the expectations of the experts, in terms of health, accuracy and comfort of sangging when using the tool.

From the results of the Wilcoxon signed Ranks test analysis of 35 people, it is known that the average age of sangging is 51.2 ± 8.39, the most education at the secondary education level. The normality test with Shapiro Wilk showed that the data were not normally distributed, and continued with the Wilcoxon Signed Ranks test.

The results of statistical tests using the Wilcoxon Signed Ranks Test obtained the following data:

Table 1: Distribution of Sangging's Perception of Dental Cutters in terms of Health, Work Accuracy and Work Comfort

Variabel		Mean Rank	Sum of Rank	Z	Sig. (2-tailled)
Health	Pre	16.00	496.00	- 4.893	0.000
	Post	0.00	0.00		
Work Accuracy	Pre	16.50	528.00	-4.992	0.000
	Post	0.00	0.00		
Convenience	Pre	16.00	496.00	-4.993	0.000
	Post	0.00	0,00		

Table 1 shows that the results of the analysis of the perception of sangging on dental cutting tools in terms of health, work accuracy and comfort before and after receiving treatment there was a change with a sign value of P < 0.050.

CONCLUSION

The results of qualitative research through Delphi in this study indicate that the experts can agree on a new tooth cutting tool designed as a disposable device, because this tool does not affect or conflict with the usual tooth-cutting procession, and even makes the tooth-cutting ceremony safer than possible. Contracting a disease, does not affect the accuracy of work, nor comfort in nyangging. Through the Wilcoxon signed Ranks test, this study succeeded in showing that the perception of sangging against disposable dental cutters designed according to health rules was acceptable to the Sangging with a p value of <0.05.

Suggestion

Considering that the results of the intervention provided significant changes, further research is needed for the development of science regarding the prevention of cross-infection in the mass tooth-cutting procession.

The need for an appeal from the Bali Province policy holder regarding the implementation of tooth cutting to provide/use a disposable tooth cutting tool so that the Balinese people, especially Hindus, can carry out the ceremony calmly without any fear of contracting disease or damage to the tooth supports

The impact of significant changes in this study requires further guidance from Dental Health Officers, both Dentists and Dental Nurses, from the District Health Office in Bali/Denpasar City, as well as the Provincial Health Office, so that this change can also occur in Sangging who did not receive treatment. , as well as to keep the changes that have been achieved do not overlap.

There is a need for guidance and assistance by the Health Service, because information is obtained that there is a tendency for the Tooth Cutting Ceremony to be carried out en masse during “Nyekah/Meukur” ceremonies, Mass Metatah Ceremonies in Griya twice a year during school student holidays.

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