



THE EFFECTIVENESS OF THE BOOKLET ON HENDLING EMERGENCIES DUE TO STINGS FROM VENOMOUS MARINE ANIMALS ON TOURISTS AT TRIKORA BEACH, BINTAN REGENCY

By

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ABSTRACT

The high level of beach tourism activities in Indonesia, especially at Trikora Beach, Bintan district, also increases incidents/accidents related to beach activities, including diving, swimming and fishing. One incident that occurs quite often is being stung by venomous marine animals. The need for fast treatment before the victim is transferred to the hospital. Therefore, tourists need adequate knowledge to prevent complications from occurring. The aim of this research is to see the effectiveness of booklet media regarding handling stings from venomous marine animals at Trikora Beach, Bintan district. Quasi experimental research design with a pre and posttest design approach. This research was conducted from June - November 2022 at Trikora Beach, Kawal Health Center working area, Bintan Regency. The population in this study were all tourists who visited Trikora Beach, Bintan Regency in the Kawal Health Center working area. The sample in this study was 68 samples in the intervention group and control group. The research results showed that there was a difference in tourists' knowledge about handling the effects of venomous marine animal stings, with a P-value of 0.003 (< 0.05), so H_0 was rejected. And in the control group, the p-value was 0.041 (< 0.05). Conclusion: Media booklet about handling emergencies due to stings from venomous marine animals is effective in increasing tourists' knowledge of this matter. It is hoped that the Kwal Community Health Center can make the booklet one of the service standards in increasing the knowledge of the community, especially tourists, about handling emergencies due to stings from venomous marine animals

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1. INTRODUCTION

Indonesia is the largest archipelagic country in the world which has 17,499 islands with a total area of around 7.81 million km². Of the total area, 3.25 million km² is ocean and 2.55 million km² is the Exclusive Economic Zone. Around 2.01 million km² is land. With its vast sea area, Indonesia has enormous marine and fisheries potential (Oki Pratama, 2020). Indonesia's islands and beaches make Indonesia a country with many islands which are tourist attractions (Erlangga Satya Darmawan, 2022). Indonesia is in 32nd place, from previously 44th, with achievements surpassing a number of neighboring countries, including Thailand and Malaysia (Eri Sutrisno, 2022).

Annual data from the Central Statistics Agency (BPS) shows that the number of foreign tourist visits to Indonesia throughout 2022 is 5,889,031 visits with an increase of 278.10 on the previous year ('Hasyiyati, 2023). Meanwhile in the Riau Islands, the number of foreign tourists (tourists) to the Riau Islands Province during July 2023

was recorded at 121,100 visits or a decrease of 29.37 percent compared to the previous month. Meanwhile, when compared to July 2022, there was an increase of 50.97 percent. The high number of tourists in the Riau Islands, especially beach tourism, can increase the incidence of venomous marine animal stings (BPS Provinsi Kepri, 2023).

The results of research conducted by (Deliana et al., 2022), regarding the description of emergency incidents due to stings from venomous marine animals from the medical records of patients admitted to the Kawal Community Health Center emergency room for the period August 2018 – December 2020, namely that they are generally caused by fish stings such as a number of blistered fish. 33 people (86.84%) and more were tourists, 22 people (57.89%). This shows that more than half of the respondents are tourists who use beach tourism for diving, swimming, snorkeling and other activities. This shows the importance of knowledge about venomous marine animal stings.

Research conducted by (Remigante et al., 2018a) regarding first aid options when stinging with scyphozoa venom is to rinse the sting area with vinegar (5% acetic acid), apply a warm compress/soak in warm water on the sting area, and administer lidocaine. This is supported by community service carried out by Linggar regarding the initial handling of marine animal stings in Central Maluku by providing knowledge to 52 Central Maluku MTsN students with evaluation results using a pretest which showed an increase in knowledge in the form of counseling and demonstrations (Linggar et al., 2023).

One of the promotional activities for handling emergencies from venomous marine animal stings is outreach which aims to change or improve behavior by increasing awareness, willingness and ability. This outreach is carried out by disseminating information and instilling confidence so that people are not only aware, know and understand, but are also willing and able to carry out recommendations/information related to emergency management of venomous marine animal stings. The success of this extension activity can be seen from the increase in knowledge and attitudes that support behavior change (Deliana et al., 2023).

Research conducted by Utami et al., (2019) biological hazards in the Karas Halu Beach tourist area consist of coral, jellyfish and sea urchins. There is a need to understand potential dangers and reduce risk factors, including first aid.

Meanwhile, according to (Dewi et al., 2023) the types of marine biota that Kondang Merak fishermen often encounter are small sharks, barracuda, lepu batu, sea urchins, *mooray*, sea snakes and COT. Skarna & Amiruddin 2023 conducted an analysis of the implementation of minimum service standards in health facilities related to water, it was found that the competence of health workers was inadequate and the available equipment was inadequate so that when an emergency case occurred, health workers were ready to handle it

In emergency outreach activities about venomous marine animal stings, media is needed to make it easier to receive advice/information. The promotional media chosen was a booklet because its shape resembles a book but is not too thick (booklet), which is practical and can contain a lot of information which is packaged concisely and equipped with attractive illustrations so that it can make it easier to convey information. Based on the description above, researchers are interested in conducting research on the effectiveness of using booklets as a promotional medium for handling emergencies from venomous marine animal stings among tourists at Trikora beach, Bintan Regency.

2. LITERATURE REVIEW

Knowledge is a result of human knowledge resulting from the combination or collaboration between a subject who knows and an object that is known. All that is known about a particular object (Nurroh, 2017). According to Rogers, quoted by Notoatmodjo (Nurroh, 2017), the process of behavior adoption is that before someone adopts a new behavior, several processes occur within that person, including: 1). Awareness or awareness, namely at this stage the individual is aware that there is a stimulus or stimulation coming to him; 2). Interest or feeling interested means that the individual begins to be interested in the stimulus; 3). Evaluation or considering where the individual will consider whether the stimulus is good or not for him. This is what causes individual attitudes to improve; 4). Trial or experiment, namely where the individual begins to try new behavior; 5) Adaptation or adoption, namely that the individual has new behavior in accordance with his knowledge, attitude and awareness of the stimulus.

Application of rational first aid measures for the treatment of venomous marine animal stings, namely (Remigante et al., 2018): 1). Don't panic, stay calm; 2). Avoid rubbing the sting area; 3). Monitor the victim's airway, breathing, and circulation; 4). Remove any obvious foreign objects. Be careful when removing to avoid further poisoning; 5). Control bleeding if necessary; 6). Rinsing the sting site with vinegar (5% acetic acid); 7). heat application (hot pack/immersion in hot water) 8). lidocaine at the sting site as safe and effective; 9). Avoid rinsing the stung area with urine, distilled water or plain water, 10). it is recommended to rinse with sea water; 11). Antibiotics and tetanus boosters may be necessary, 12). Bandages as needed, 13). Always seek emergency medical evaluation.

A booklet is a non-periodical publication that is not hardbound, complete (in one issue), having at least 5 pages but not more than 48 pages, excluding the cover. The contents of the booklet can be in the form of sentences written



in concise language that is easy to understand in a short time, pictures or a combination. Booklet media is a medium used by educators to convey educational or teaching materials about nutrition to make it easier to convey messages or information.

Research Framework

With reference of previous researches and literature review the framework of the research had been identified as below:

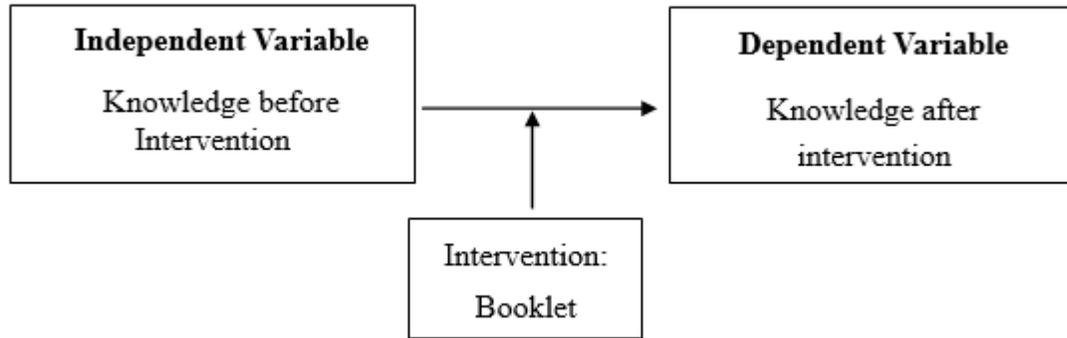


Figure 1. Research Framework
 Source: Research Data (2023)

3. METHODS

This research used a quasi-experimental design, with a non-equivalent control group approach, pre and posttest design. This research involved an intervention group and a control group. Quasi experimental research design with a pre and posttest design approach. This research was conducted from June 2022 to November 2022 in the Kawal Health Center work area, Bintan Regency. The population in this study were all tourists who visited Trikora Beach, Bintan Regency in the Kawal Health Center working area. The sample in this study was 68 samples with 34 samples in the intervention group and 34 samples in the control group.

4. FINDING AND DISCUSSION

The characteristics

The characteristics of tourists seen in this research include age and gender.

Table 1. Distribution of respondent Characteristics (n=64)

CHARACTERISTICS	Group			
	INTERVENTION		Control	
	N	%	N	%
Age (year)				
20 – 30	15	44	14	41
31 – 40	12	35	15	44
41 – 50	5	15	4	12
> 50	2	6	1	3
Gander				
Man	25	74	22	65
Women	9	27	12	35
Total	34	100%	34	100%

Data: Primary Data

The highest frequency of tourists based on age was in the 20 - 30 year age range, namely 15 people (44%) in the experimental group, in the control group, those aged 31 - 40 years were 15 people (44%). Meanwhile, based on gender, the majority were men, 28 people (57.1%), compared to women, 21 people (42.9%).

Most tourists are adults, at this age people can receive and obtain accurate information. The content is in line with research conducted by Hanifah, namely that there is a significant relationship between age and knowledge of women of childbearing age about Pap smears (Hanifah & Sulistyorini, 2019). However, contrary to research conducted

by Assiyah, there was no relationship between maternal factors, namely maternal attitude, maternal age and maternal education, with exclusive breastfeeding in the Sudiang Makassar Health Center Work Area (Assriyah et al., 2020). This is in line with research conducted by (Nofia, 2021), there is a significant relationship between the gender of the nurse and the application of therapeutic communication ($p = 0.021$). Good communication between two people will support the provision of information that is more accurate and conveyed effectively.

Table 2. Average knowledge of tourists in the intervention group and control group (n=64)

Tourist Knowledge	Mean	SD	Max	Min	Pre-posttest increase (%)
Intervention Group					
Pretest	10,60	1.320	15	8	27,79
Posttest	16,10	1.207	17	13	
Control group					
Pretest	9,30	1.570	11	5	25,83
Posttest	13,10	1.673	14	7	

Data: Primary Data

From the table above, it was found that there was an increase in pre- and post-test scores in the intervention group of 27.79 and in the control group of 25.83. This can show an increase in knowledge before and after the intervention in both groups. The increase can be seen to be higher in the intervention group than in the control group.

The results of research on the knowledge of fertile couples about family planning programs showed that there was a significant difference in respondents' knowledge before and after intervention with booklet media (p -value < 0.05) (Iqbal et al., 2022). In line with other research conducted by (Suryani et al., 2022), it was concluded that there were significant changes between before and after being given media. This means that respondents' knowledge increased after being given booklets and audiovisual media to pregnant women regarding nutrition in preventing chronic energy deficiency.

Table 3. Difference in the Average Difference in Knowledge of the Intervention Group and the Control Group

Group	Mean		
	Pre	Post	P. Value
Intervensi	72,20	84,90	0,003
Kontrol	65,10	77,70	0,041

Data: Primary Data

The results of the simple Paired t-test one showed that there was a difference in tourists' knowledge about handling the effects of venomous marine animal stings, with a P-value of 0.003 (< 0.05), so H_0 was rejected. And in the control group, the p-value was 0.041 (< 0.05), so H_0 was rejected. From the results of the analysis of the T-test, P-value for the two groups above, it can be concluded that there is an influence of the booklet on the level of knowledge of tourists in handling the effects of venomous marine animal stings on Trikora beach, Bintan Regency.

A study on the effect of hypertension education applications using booklet media on changes in hypertension self-management behavior in hypertensive patients was analyzed using the Mann-Whitney Test with the result $p = 0.015$. It can be concluded that hypertension education using booklet media is effective in changing hypertension self-management behavior in hypertensive patients (Herwanti et al., 2021). This is in line with other research which found a significant effect of providing health education about self-care for chronic kidney disease using booklet media on self-care management in patients undergoing hemodialysis at Kraton Hospital, Pekalongan Regency ($p = 0.000$) (Prastiwi et al., 2020). Research from Cumayunaro et al., (2020) obtained the same results, namely that there were significant differences in mothers' knowledge and attitudes towards early detection of children's growth and development before and after being given health education. From the various results above, it can be concluded that increasing knowledge among adult respondents can be more easily done with booklets, including regarding handling emergencies due to stings from venomous marine animals.

5. CONCLUSION

Most of the tourists were in the age group of 41 -50 and > 50 years, 17 people (34.7%), 28 men (57.1%) and 21 women (35%). Bivariate test results obtained from a simple Paired t-test 1 showed that there was a difference in tourists' knowledge about handling the effects of venomous marine animal stings. The P-value was 0.003 (< 0.05), so H_0 was rejected. And in the control group, the p-value was 0.041 (< 0.05), so H_0 was rejected. From the results of the analysis of the T-test, P-value for the two groups above, it can be concluded that there is an influence of the booklet on the level of knowledge of tourists in handling the effects of venomous marine animal stings on Trikora beach, Bintan Regency. It is hoped that the relevant health centers can apply this booklet media as a media to increase knowledge about handling emergencies due to stings from venomous marine animals.



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