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To cite this article: K T Sumadewi *et al* 2018 *IOP Conf. Ser.: Mater. Sci. Eng.* **434** 012335

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239th ECS Meeting

with the 18th International Meeting on Chemical Sensors (IMCS)

ABSTRACT DEADLINE: DECEMBER 4, 2020



May 30-June 3, 2021

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Utilization review inpatient and outpatient of traveller related to thypoid in Bali (study in two regencies: a case report)

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Abstract. Bali is a tourism destination for foreign tourist who plan to do business or just on vacation. Bali is a tropical area that susceptible to various diseases. Foreign tourists who were enjoying their travel will experience health problem in the case of improper vaccination. The aim of this study was to evaluate the frequency of typhoid cases among travellers visited clinics in Bali. A retrospective study was conducted based on the medical record of the patients suffered with thypoid infections in Bali. The highest finding of typhoid patient visiting clinics is Badung Regency.

1. Introduction

Bali is a tourism destination for foreign tourist who plan to do business or just on vacation. Bali is a tropical area that susceptible to various diseases. Foreign tourists who were enjoying their travel will experience health problem in the case of improper vaccination. For more than 30 countries in the world has applied vaccination policy prior to their citizen travel. This effort does not guarantee that the tourist will be invulnerable to diseases on their travel destination. The change of air humidity, climate, and temperature, along with the germs that follows will cause health disorder to foreign tourist [6]. Rai found that from 17 foreign tourist that were treated at Sanglah General Hospital, 14 of them were having pneumonia, while the other 3 were suffering from COPD acute with exacerbation [2]. Most of these patients were coming from Australia, Holland, USA and Germany. Tourism travel may expose these tourists to pathogens and risks. Hakim and Khan stated that few diseases commonly infected by the tourists who visit tourism places are Upper Tractus Respiratorius Infection, Diarrhea, and others various infections [3]. Rai stated that based on the statistic data, tourism travel is the activity that has the highest risk of being exposed to pathogen that caused respiratory infection [2]. Shady stated that though community health field already design an alternative to diminish the danger and risk from tourism travel, the number of tourists visits to travel clinic were still relatively low [4]. Data survey obtain from health facilities around Badung regency showed that the number of inpatient in a few health facilities from the January 2015 until November 2015 in Badung regency were around 896. This survey were collected in 14 clinics around in Badung regency. Many health facilities in Bali; especially clinics, does not possess with medical record systems. Renowned hotels in Denpasar have its own health facilities, which is done thru family doctor. The number of outpatient in this renowned hotel clinics is around 671. The data of this outpatient number were collected at 6 renowned hotels in Denpasar. In Bali, Dengue Hemorrhagic Fever and Typhoid was a popular issues in a few health facilities. The data survey in 4 health facilities in Denpasar showed that 56 cases were diagnose with Dengue Hemorrhagic Fever. Typhoid case was 13 case in 2 health facilities around Denpasar. Dengue Hemorrhagic Fever and typhoid had almost



similar symptoms. Indonesia is a tropical country that vulnerable to Dengue Hemorrhagic Fever. Some places in Indonesia have the highest case of Dengue Hemorrhagic Fever. For example; Bali is ranked second in Indonesia in Dengue Hemorrhagic Fever in 2016. Main destination in Bali for foreign tourist are Kuta and Nusa Dua area in Badung regency, Sanur area in Denpasar city, Amed area in Karangasem regency, and Ubud area in Gianyar regency. There are no specific health statistics data that related to tourists visit and no center of tourism information on tourism health that can help the tourists to plan their visit or to be alerted when they are in Bali. Review of utilization and disease data can be used to depict the mapping of tourists' health that visits Bali. The research was done in four places that is the primary tourist destination in Bali by involving clinic and hospital, which treats tourist patients in patient's medical recording method in 2017. What is the disease that mostly affect tourist in Bali?.

2. Methods

Research scheme: this research is a retrospective study with cross sectional design. This research was done in 32 clinics and 5 hospitals. Research location, research plan and research population: this research was done by taking note and conducting tourist patients medical recording in 2017. The data collection in this study was in 2 regencies which are have the highest income. The regency with the highest income had more facilities for traveler. The facilities were included information about health and information system that easier for traveler to reach out. Patient's medical recording data will be further analyzed to investigate the number of outpatients and inpatients at 32 private clinic and 5 hospital in 2017. The private clinics in Badung is 17 private clinics around Kuta and Nusa Dua. Then, in Denpasar data collected in 16 private Clinics. The data of the inpatient were in Denpasar and in Badung regency.

3. Results

Table 1. Utilization Review Oupatient and Inpatient of The Traveller in Private Clinics 2017

| Month | Utilization Review of Outpatient in Badung | Utilization Review Outpatient in Denpasar | Utilization Review Inpatient in Badung (%) | Utilization Review Inpatient in Denpasar (%) |
|-----------|--|---|--|--|
| January | 0,13 | 0,15 | 0,06 | 0,03 |
| February | 0,15 | 0,16 | 0,05 | 0,02 |
| March | 0,15 | 0,19 | 0,07 | 0,02 |
| April | 0,17 | 0,17 | 0,08 | 0,02 |
| May | 0,17 | 0,15 | 0,08 | 0,02 |
| June | 0,18 | 0,13 | 0,10 | 0,03 |
| July | 0,18 | 0,13 | 0,11 | 0,03 |
| August | 0,19 | 0,12 | 0,15 | 0,03 |
| September | 0,19 | 0,12 | 0,11 | 0,02 |
| October | 0,19 | 0,12 | 0,11 | 0,02 |
| November | 0,20 | 0,14 | 0,12 | 0,02 |
| December | 0,21 | 0,20 | 0,17 | 0,03 |

The data showed that the highest of outpatient of the traveler was in August 2017 in Badung Regency. The highest number of visits in Badung was in August, but in February was the lowest number of visits. Bali climate in august was rainy that make some traveler vulnerable to tropical disease. But compared to the data in Denpasar that the outpatient in Denpasar was lower than in Badung regency. The data show in Badung were increasing significantly. The data showed in Denpasar were increasing constantly in some month.

The data showed about inpatient that in Denpasar decreasing slowly but contrast to Badung the data showed were slowly increasing. The highest number of visits in Badung were in November but in Denpasar was in March.

Table 2. The Utilization Review of the traveler related to Typhoid in Hospital 2017

| Month | Number of Visits related to Typhoid in Badung | Utilization Review of Typhoid in Badung | Number of Visits related to Typhoid in Denpasar | Utilization Review of Typhoid in Badung |
|-----------|---|---|---|---|
| January | 8 | 0,03 | 6 | 0,03 |
| February | 12 | 0,05 | 8 | 0,04 |
| March | 15 | 0,06 | 7 | 0,04 |
| April | 10 | 0,04 | 8 | 0,04 |
| May | 11 | 0,04 | 4 | 0,01 |
| June | 16 | 0,07 | 6 | 0,02 |
| July | 12 | 0,05 | 7 | 0,03 |
| August | 18 | 0,07 | 9 | 0,05 |
| September | 22 | 0,08 | 3 | 0,01 |
| October | 16 | 0,06 | 6 | 0,03 |
| November | 12 | 0,05 | 9 | 0,04 |
| December | 14 | 0,06 | 11 | 0,07 |

The table showed the traveler are vulnerable to typhoid. The highest utilization in Badung was in September and the highest data in Denpasar was in December. The lowest utilization was in January but in Denpasar was in May.

4. Discussion

According to the data and the interview with the health workers in private clinics, accident is a major of high incidence of outpatient in the private clinics and the other are due to the weather changes. The interview in some hospital according to the doctors stated that typhoid is one of the high incidence of traveller in some hospital. They stated that many traveller are did not knew the cleanliness buying food in some places and some traveller did not knew the traditional spicy food was caused a typhoid.

Murphy, et.al stated that this investigation indicated that unregulated vended water and groundwater sources were contaminated and were therefore a risk to consumers during the 2015 typhoid fever outbreak in Kampala [5]. Typhoid is endemic in South Asia and parts of South-East Asia, the Middle East, Central and South America, and Africa. Most UK travelers diagnosed with typhoid and paratyphoid had recently travelled to the Indian subcontinent—Bangladesh, India or Pakistan—to visit friends and relatives. In the UK, currently an oral, live vaccine and injectable, inactivated vaccines are available. The vaccines only protect against typhoid and not paratyphoid infection, and are not 100% effective. Therefore, practice nurses should remind travelers of the importance of food and water hygiene measures [6]. Masyeni et al. report about clinical characteristic of diarrhea among international travelers in Bali which found high finding of *Escherichia coli* as the most microbial finding [7].

Traveler need to get more information about health when they travel to other countries. South East Asia were well known in tropical disease. Typhoid was one of the tropical disease that vulnerable to travelers. Health information about the tropical disease in South East Asia are really required. Bali was the famous place in Indonesia for traveler but the traveler less careful about food and hygiene. Therefore, there are an association should remind the traveler before leaving to the destination country.

5. Conclusion

Typhoid are one of the tropical disease that is vulnerable to the traveler. The utilization review in Denpasar and Badung regency showed that slowly increasing in 2017. Most of the traveler should remind about food, sanitation and hygiene, and got vaccine before travel to other country. Some institution and association in every country in South East Asia may contribute to remind the traveler about tropical disease.

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