

## Conference Paper

# Bariatric Surgery as Efforts to Overcome Obesity and Opportunities Medical Tourism

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## Abstract

Obesity management can be done in various ways, including dietary regulation, drug use, and a surgery called bariatric surgery. Of these three ways, surgery is considered the most effective way to overcome obesity in the long term. Bali being able to implement this surgery can in addition to being a tourist destination can also be one of the medical tourism spots to undergo bariatric surgery. Bali has performed bariatric surgery on nine patients so far, consisting of one Indonesian citizen and eight foreign tourists. Of the foreign patients, six were Australian citizens and two French citizens. The patients recovered within two weeks of surgery. They began to feel limited appetite and started exercising; the average patient's weight was reduced by 6 kg within six weeks after surgery. This action has been widely developed including in Indonesia, especially Bali. Rates offered by Bali are also cheaper when compared with Australia and Europe. The success rate of this action was even higher at 28%, compared with lifestyle changes and pharmacology. This is an opportunity for Indonesia and Bali to attract foreign tourists to conduct medical tourism. To overcome the challenges of competitors from neighbouring countries like Malaysia and Singapore, a broader promotion is needed at the international level and always maintain a good image in patients who have undergone bariatric surgery in Bali. Bariatric surgery is the most effective curative action for obese people. Bali as a tourist destination also has great opportunities as a destination of medical tourism.

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## 1. Introduction

Obesity is a worldwide problem in both developed and developing countries because of its increasing prevalence in adults and children [1]. Obesity was determined based on body mass index (BMI) in adults > 25 kg/m<sup>2</sup> as overweight and > 30 kg/m<sup>2</sup> as obesity. But for Asian people this criterion is different where BMI > 23 kg/m<sup>2</sup> is already

a criterion for overweight. This is because the percentage of Asian body fat (especially abdominal obesity) is 7–10% higher than Caucasian [2].

A person with obesity has the potential to develop metabolic and degenerative diseases later in life, one of which is cardiovascular disease and type 2 diabetes mellitus [3]. Therefore, risk factors for cardiovascular disease in obese patients should be evaluated. The prevalence of overweight is most prevalent in Latin America and the Caribbean (4.4%), then Africa (3.9%), and Asia (2.9%) [4]. In Indonesia itself, based on Basic Health Research (*Riskesmas*) data in 2013, it was found that the most obese age groups were in the age group > 18 years. This increase reached 32.9% when compared with data in 2010 which only 15.5% [5].

Many strategies, such as diet, weight-loss programs and medical therapy fail to show long-term weight loss. Bariatric surgery is a cost-effective intervention that provides long-term weight loss and can treat comorbid conditions effectively [6]. Indonesia has been able to carry out bariatric operations, particularly Bali.

Bali is one of the tourist destinations that the number of foreign tourists visiting increased in the last 1 (one) year. The number of foreign tourists to Bali in June 2016 raised 12.83% compared with June 2015 and increased by 2.86% compared with May 2016. According to the nationality, the most frequent tourists coming to Bali in June 2016 are tourists from Australia, China, India, Japan and the UK with percentage of 26.23%, 19.20%, 4.58%, 4.47% and 4.38%, respectively [7]. Bali is the place that comfort is available on the island. This is one of the opportunities for the implementation of medical tourism related to bariatric surgery.

## 2. Methods

This is a literature study to analyse tourism potential of bariatric surgery by using thematic approach.

## 3. Results and Discussion

Obesity is caused by an imbalance of the amount of energy that enters with the required by the body. The body needs energy for various biological functions such as physical growth, development, activity, health maintenance [5]. Obesity that occurs at the age of children and adolescents can increase the incidence of diabetes mellitus (DM) type 2. In addition, children are also at risk for obesity in adulthood and potentially impaired glucose metabolism and degenerative diseases such as heart disease, blood

vessel obstruction, etc. Therefore, obesity should be treated as early as possible to avoid comorbidities due to obesity. One of the actions that can lose weight in the long term is bariatric surgery. In this action, manipulation of the gaster is done so that the gaster size becomes smaller. Smaller gastric size will reduce the capacity of the stomach to receive food and provide a feeling of satiety faster [6].

This action has been developed in many countries around the world including in Indonesia, especially Bali. Bali has been able to meet the availability of human resources (HR) for this procedure. Rates offered by Bali are also cheaper when compared with Australia and Europe as shown in Table 1. The success rate of this action was even higher at 28%, compared with lifestyle and pharmacological changes with successive percentages of 11% and 8% [8]. This is an opportunity for Indonesia and Bali in particular to attract foreign tourists to conduct medical tourism.

TABLE 1: Bariatric surgery rates in Bali.

Item	Tariff
Radiology	Rp 195,000
Laboratory	Rp 3,000,000
ECG	Rp 120,000
Basic Nursing	Rp 220,000
Room HCU	Rp 750,000
Room Ward	Rp 2,400,000
Nursing HCU	Rp 350,000
Nursing Care Ward	Rp 750,000
Surgery	Rp 45,612,000
Bariatric equipment	Rp 60,660,600
Medication	Rp 12,568,604
Consumable	Rp 785,000
Medical equipment	Rp 7,000,000
Surgical Instrument/Equipment	Rp 7,560,177
Doctor visitation	Rp 930,000
Specialist counsel	Rp 600,000
Histopathology Radicality	Rp 1,118,000
Administration	Rp 150,000
<b>Total</b>	<b>Rp 144,769,381</b>
<b>Rounding</b>	<b>Rp 150,000,000</b>

Neighbouring countries are also Indonesia's competitors in this surgery. Competitive countries that are the main competitors are Malaysia and Singapore because the country is able to provide cheaper rates. Indonesia has not been able to compete with the tariffs they provide because of the high cost of tools and taxes. This is because

Indonesia still has to bring in tools from abroad. To overcome this challenge, a broader promotion is needed at the international level and always maintains a good image in patients who have undergone bariatric surgery in Bali. The goal is to maintain foreign tourists' trust in order to keep Bali as a medical tourism destination in overcoming obesity.

## 4. Conclusion

Based on the discussion, it can be concluded that bariatric surgery is the most effective curative action for obese people. Bali as a tourist destination also has great opportunities as a destination of medical tourism. To achieve this goal, a more massive international campaign is needed by hospitals capable of carrying out these actions.

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