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**DESCRIPTION OF PULP TREATMENT AND POST PULP TREATMENT
MATERIALS IN BPJS AND UNINSURED PATIENTS IN THE DENTAL CLINIC,
IDAMAN DISTRICT HOSPITAL, BANJARBARU**

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ABSTRACT:

Background: Badan Penyelenggaraan Jaminan Sosial (BPJS) is a form of the implementation of the National Health Insurance which is tasked to ensure the maintenance of health for all Indonesians. But many people are not satisfied with BPJS. Kurniawan research in 2015, treatment measures (aspects of assurance) were significantly different between uninsured patients and BPJS patients. Idaman Hospital, Banjarbaru is a type C hospital owned by the city government, as an advanced level health facility in implementing BPJS. Pulp treatment is a kind of treatments in dental and mouth which covered by BPJS. **Purpose:** To know the description of pulp treatment and post pulp treatment materials in BPJS and uninsured patients in Idaman District Hospital, Banjarbaru. **Methods:** A descriptive observational study with retrospective secondary data collect from patient registers in January-December 2018. **Results:** Outpatients that insured by BPJS were 78.84% and uninsured were 21.10%. The use of dental pulp treatment materials was arsenic with 13.6% in BPJS patients and 6.6% in uninsured patients, formocresol with 21.5% in BPJS patients and 5.6% in uninsured patients, cresophene 20.42% in BPJS patients and 3.76% in uninsured patients, eugenol 2,81% in BPJS patients and 2.35% in uninsured patients. The most common used post-pulp treatment materials were 16.6% GIC for BPJS patients and 6.09% in uninsured patients, while composites were only 0.23% for both. **Conclusion:** Dental pulp treatment materials in BPJS and uninsured patients are arsenic, formocresol, cresophene and eugenol, while post pulp treatment materials are GIC and composite.

Keywords: BPJS, Pulp Treatment, Uninsured Patients

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INTRODUCTION

Health insurance is a way to overcome health uncertainty and the costs incurred. Social health insurance in Indonesia is organized by the government in the form of the Jaminan Kesehatan Nasional (JKN). Badan Penyelenggaraan Jaminan Sosial (BPJS) is a form of organizing JKN that is tasked to ensure the maintenance of health for all Indonesians.¹ But many people are not satisfied with BPJS. Research at the Bantul Health Facility about the description of BPJS patients and uninsured patient care satisfaction stated that care satisfaction

with BPJS is far greater than uninsured patients.² This is supported by Kurniawan (2015), treatment measures (aspects of assurance) were significantly different between uninsured and BPJS patients. BPJS patients feel a lower aspect of assurance compared to uninsured patients.³

The results of Riskesdas in 2013 stated that the prevalence of caries in South Kalimantan was 86.9%, the second highest prevalence in Indonesia after Bangka Belitung with 88.1%. The results of Riskesdas in 2018 stated that dental caries was the largest proportion of dental problems in South

Kalimantan, amounting to 59.6% and above the national average.^{4,5} Severe caries will cause pulp disease. Data from the South Kalimantan Provincial Health Office in 2017 reported that most cases in the field of dentistry were pulp and periapical diseases. Cases with pulp disease need pulp treatment in the form of root canal treatment.⁶ Dental pulp treatment is the most frequent treatment performed at the Dental Department of Idaman Hospital, Banjarbaru. Idaman Hospital Banjarbaru is a type C hospital owned by the Banjarbaru municipal government which organizes Advanced Health Facilities in the implementation of the BPJS. Dental Clinic of Idaman Hospital Banjarbaru choose a series of pulp treatments with a variety of root canal sterilization materials for further permanent placement with post pulp treatment materials. Generally, sterilization materials that are often used vary and have different indications and prices. However, there are some ingredients that have long been abandoned because they are toxic but are still often used. Departing from the problems stated above, the researcher wants to conduct research aimed at reviewing the description of pulp treatment and post-dental pulp treatment materials in BPJS and uninsured patients at the Dental Clinic of Idaman Hospital Banjarbaru so that they can provide information as a basis for making decisions on the implementation of the health insurance policy in Indonesia, in order to improve the health status of the Indonesian people.

MATERIAL AND METHODS

This study was approved by the Ethical Eligibility Committee, Faculty of Dentistry, Lambung Mangkurat University No. 120 / KEPKG-FKGULM / EC / VII / 2019. This study used a

descriptive observational research method with data taken retrospectively from the patient registers for 5 months from August-December 2018 at the Dental Clinic of Idaman Hospital, Banjarbaru. This study used purposive sampling obtained with the inclusion criteria from the patient register data, that is all patients seeking treatment at the dental clinic of Idaman Hospital, Banjarbaru both using BPJS or uninsured patients, age over 15-44 years, data from August-December 2018, complete and clear pulp treatment data. The exclusion criterion was that the patient was referred to other room or hospital. Samples were taken as many as 426 samples.

RESULTS

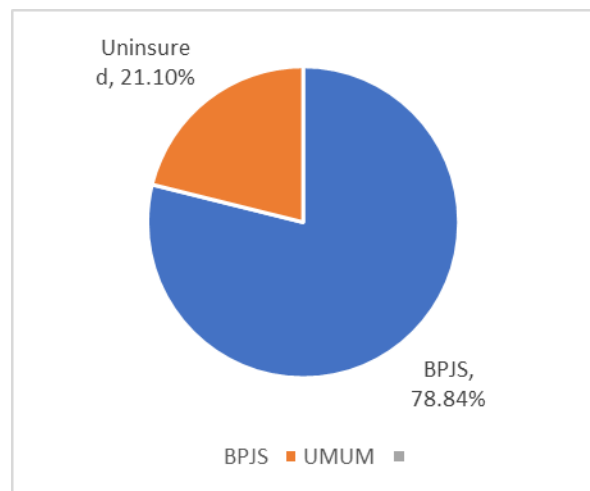


Figure 1. Status of Patient Visits

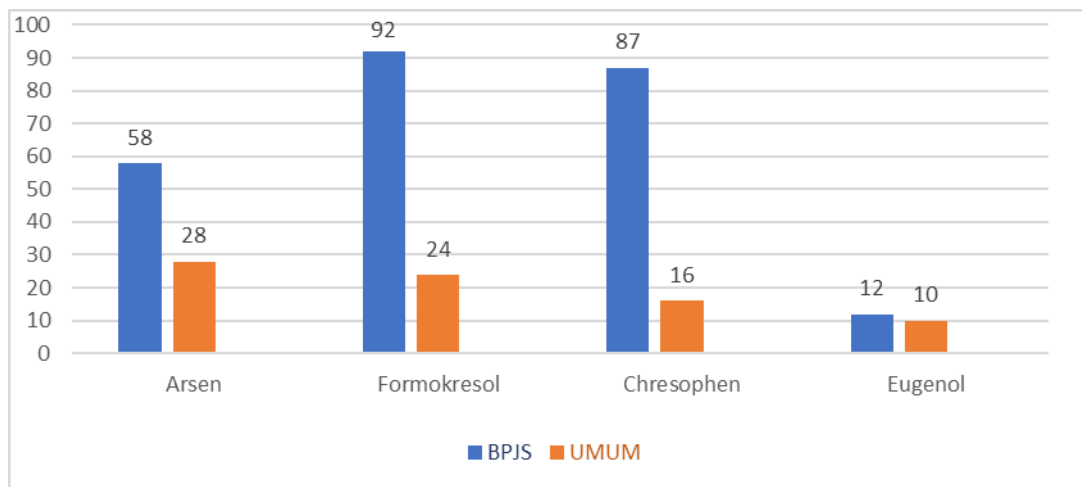


Figure 2. The Use of Pulp Treatment Materials in BPJS and Uninsured Patients

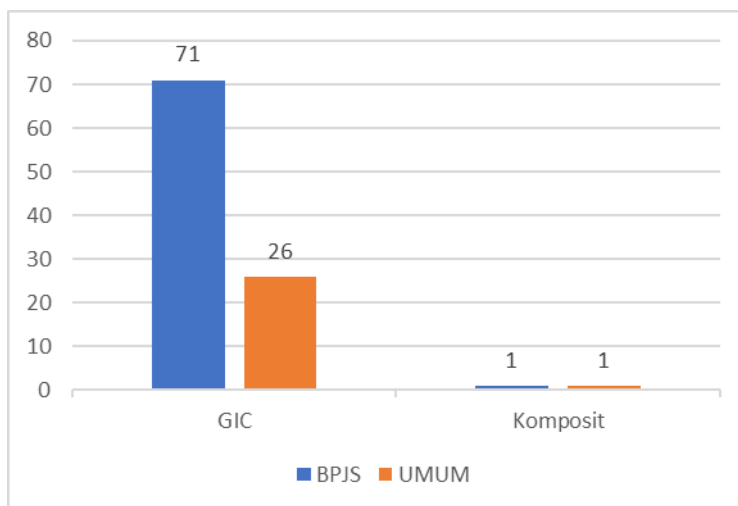


Figure 3. The Use of Post-Pulp Treatment Material in BPJS and Uninsured Patients

DISCUSSION

In this study, samples that met the inclusion criteria were 426 people. Figure 1 explained the status of patient visits to the Dental Clinic of Idaman Hospital Banjarbaru in August to December 2018 to receive health services. Outpatients who received health services with BPJS were 78.84% and uninsured patients were 21.10%. This was because Idaman District Hospital Banjarbaru is the only referral hospital owned by the government in Banjarbaru, so there is no other choice of health services according to C Class Hospital standards, even though BPJS patients domiciled with distance away from Idaman Hospital Banjarbaru.⁷ In addition, for BPJS patients, the role of health workers in first-level health facilities (FKTP) provides information to the public to refer to the Idaman Hospital Banjarbaru because the BPJS health referral system is implemented in stages according to medical needs. The referral system is implemented with the aim of providing quality health services, so that the service goals are achieved without expensive costs.⁸ This is in accordance with the theory of Lawrence Green (1980) in Harahap (2016) that a person's behavior to obtain health services is influenced by supporting factors that are manifested in the physical environment, the availability of health insurance, the availability of health facilities, and the support of health workers in serving the community.⁹ In addition, the study of Ainy et al in 2018 stated that the desire of the community in utilizing health services was determined by the distance or accessibility of health services.^{10,11,12} According to Health Policy Plus in 2018, the rich, whether insured or not, remain at the top in the utilization of health services. Utilization of health services remained stable before the existence of BPJS, then there was a

significant increase in the utilization of BPJS services in the first year of BPJS with an increase in community members of BPJS by 64%. The causative factors that significantly influence the increase in BPJS patient visits are the poor, so the purchasing power is low, especially on health services.¹³ BPJS patient visits in the Dental Clinic of Idaman Hospital are also increasing due to the tiered referral system in the BPJS patient care process. The tiered referral system is from First Level Health Facilities (FKTP) to C Class hospitals as Advanced Level Health Facilities (FKTL). Therefore, with a tiered referral system that has been running on BPJS patients, the government needs to add more health service facilities to avoid the high number of visits to one health facility. This is done so that the hospital can provide optimal services. Hospitals that are not able to handle the high number of visits will impact many patients who are not satisfied with the health services at that hospital. In addition, this will affect the performance of hospitals in providing health services.

Treatment for pulp disease is endodontic treatment or root canal treatment. However, in its implementation, not all health facilities, especially hospitals, do root canal treatment with various considerations. Pulp treatment is done in cases of pulp disease. Treatment of pulp disease in the Dental Clinic of Idaman Hospital Banjarbaru in the form of pulpotomy treatment, which is the treatment by removing the pulp tissue in the pulp chamber and continued with the placement of biocompatible materials and being able to maintain tooth vitality. Pulpotomy is performed on teeth that have healthy pulp with irreversible pulpitis symptoms and caries reaching the pulp.¹⁴ In the Dental Clinic of Idaman Hospital Banjarbaru, patients with pulp disease are not treated with root canals, but what is done is to

clean the cavities, the application of cotton containing drugs such as arsenic, formocresol, cresophene, and eugenol, accompanied by temporary restoration. Then the patient controls after the application of the drug 7 days later. If the patient has no complaints after 3-4 treatments, then ZnPO₄ base is applied and restored with fixed restoration, such as GIC material for posterior teeth and composite material for anterior teeth.

Figure 2 shows the use of materials in pulp treatment at the Dental Clinic of Idaman Hospital Banjarbaru. Arsenic material as a devitalization agent was used in 58 cases (13.6%) of BPJS patients. This number was greater than in uninsured patients in 28 cases (6.6%). This was because BPJS patients' visits to the Dental Clinic of Idaman Hospital Banjarbaru were more than uninsured patients. Arsenic is still used as an ingredient of devitalization because it is considered fast to relieve pain and its application is brief to follow up. The application of arsenic is by inserting cotton containing arsenic into the cavity and then covered with a temporary restoration. Arsenic is not a gold standard material in pulp treatment. Arsenic is a heavy compound that can enter the body orally, inhalation, and absorption through the skin or mucous membranes. Arsenic enters the bloodstream and is deposited in organs such as the liver, kidneys, muscles, bones, skin and hair. Arsenic that enters the body of a pregnant woman can penetrate the placenta and be absorbed by the fetus. The use of arsenic in root canal treatment is no longer recommended because it can cause pain in the process of killing the pulp. If it leaks on a temporary restoration, it can cause necrosis of gingival and periapical tissue.¹⁵ Several studies of arsenic on hard tooth tissue have been widely reported. One of them was Manju et al's study in 2017 showing that chronic arsenic exposure resulted in an increase in one's caries experience. This is supported by Sarwar et al's study in 2015 which states that teeth have a tendency to abrasion in populations exposed to arsenic. Policies on arsenic as a drug have also been published even though their use as pulp treatment materials has not yet been formulated. Regulation of the Head of the Drug and Food Supervisory Agency No. 12 of 2014 states that the quality requirements of a medicinal product are to pass the organoleptic test parameters, water content, pH, microbial contamination, and heavy metal contamination, one of which is arsenic. Regulation of the Food and Drug Supervisory Agency No. 5 of 2018 states that the distribution of processed foods and medicines must minimize or even eliminate the presence of arsenic contamination as a heavy metal.^{16, 17, 18, 19}

Figure 2 also shows the use of cresophene as much as 20.42% in BPJS patients and 3.76% in uninsured patients. The use of eugenol was 2.81% in BPJS patients and 2.35% in uninsured patients. The most common use of pulp treatment material was formocresol with its use in BPJS patients as many as 92 cases (21.5%) and in uninsured patients as many as 24 cases (5.6%). This was due to the large number of patients who visit, so that cheap and easy materials are needed to shorten the service time. The use of formocresol is relatively short and easy, that is only applied for 3-5 minutes before the cotton pellet is removed, so that it will shorten patient care time at the Dental Clinic of Idaman Hospital Banjarbaru. Formocresol is the most often used material, both in BPJS patients and uninsured patients. Formocresol is a gold standard pulpotomy material that has bacteriostatic properties and is most often used in pulpotomy treatments with a high success rate. Formocresol works as a dressing material that requires other ingredients to fill the pulp chamber. But, actually, formocresol is more widely used for primary teeth instead of permanent teeth. Formocresol is known to be toxic, and has a mutagenic risk. This material is also carcinogenic to humans when absorbed systemically. In addition, formocresol is also known to have hypoplastic effects, hypomineralization and tissue necrosis when it affects the gingiva.²⁰

Figure 3 shows the use of post pulp treatment materials in the Dental Clinic of Idaman Hospital Banjarbaru. The most widely used material was GIC in 71 cases (16.6%) in BPJS patients and 26 cases (6.09%) in insured patients. Although this material is not strong enough to withstand large chewing pressures, it has the advantage of being biocompatible with pulp, releasing fluoride, affordable, and easy to obtain. This is in line with a study conducted by Lengkey et al in 2015 in one of the Bitung health facilities which stated that the most used material for restoration was GIC of 93% and was applied most often in posterior teeth.²¹ Composite material in the Dental Clinic of Idaman Hospital Banjarbaru is more used in anterior teeth than in the posterior because the composite is an aesthetic restoration material. Composites have good color stability and match natural teeth in terms of color, transparency and texture. However, the composite is not economical for the restoration material on the posterior teeth that have a large cavity, so it is less efficient in patients care, especially BPJS in the Dental Clinic of Idaman Hospital Banjarbaru. This is in line with the research of Wigati et al in 2016 at Manado Dental Hospital who found that the use of composite restoration

materials was at least 20.63% compared to amalgam (52.91%) and GIC (24.46%).²²

Pulp treatment in uninsured and BPJS patients is done by pulpotomy using arsenic, formocresol, cresophene, eugenol and permanently restored using GIC or composite. Root canal treatment in pulp disease is not performed at the Dental Clinic of Idaman Hospital Banjarbaru because not all root canal treatments can work well. Lack of knowledge of pulp anatomy due to the lack of supporting radiographic facilities is one of the reasons for the failure of endodontic treatment, while supporting radiographic examinations are needed to determine root anatomy and calculate length of work. The availability of tools and materials in each hospital is limited, especially C-class hospitals such as the Idaman Hospital Banjarbaru, as well as the long treatment time being considered in this hospital for not doing root canal treatment. In addition, Idaman Hospital Banjarbaru recruited a dental conservation specialist, so that root canal treatment in certain cases will be referred vertically to that section.²³

The benefit of this research is that it can be used as a consideration for making appropriate policies in the implementation of BPJS. Implementation of policies regarding BPJS membership needs to be evaluated so that hospitals for BPJS participants can improve services in accordance with the care that patients need. In addition, it is necessary to have a policy on limiting the use of dental pulp treatment materials so that materials that cause negative effects on patients can be avoided. Efforts to improve the health need to get more attention in order to improve the quality of life in achieving optimal health goals. This research certainly has many shortcomings. Next researchers can conduct research on the age and sex description of the use of root canal treatment and post root canal treatment materials, and research needs to be done on which tooth treated by the root canal treatment based on the material used.

CONCLUSION

The conclusion of this study is the visit of outpatients who get health services with BPJS more than uninsured patients. The use of dental pulp treatment materials, both in BPJS and uninsured patients, namely arsenic, formocresol, cresophene and eugenol. The fixed post-treatment pulp material used, both for BPJS and uninsured patients, is GIC and composite.

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