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# PROCEEDING



**1<sup>st</sup> ICMHS**

1<sup>st</sup> International Conference  
on Medicine and Health Sciences

**Interprofessional Collaboration to Achieve  
Sustainable Development Goals (SDGs)**

Aug 31<sup>st</sup>-Sep 1<sup>st</sup>, 2016  
Aston Hotel, Jember, East Java  
**Indonesia**



Hosted by:  
Faculty of Pharmacy | Faculty of Dentistry |  
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*Membangun Generasi  
Menuju Insan Berprestasi*

Ban  
Ristya

## Message from the editors

Providing high standard health care to our society is challenging, especially when issues on equity versus equality in accessing health care is to be addressed. The 1<sup>st</sup> International Conference on Medicine and Health Sciences (1<sup>st</sup>ICMHS) on 31 August-1 September 2016 in University of Jember (UNEJ) Indonesia was held to not only disseminate the research update in health sciences but also to provide chances among the researchers and practitioners in health sciences to interact and share their experiences.

The 1<sup>st</sup>ICMHS presented 9 keynote speakers, 7 invited speakers, attracted 45 oral presenters and 60 posters. The proceeding recorded valuable manuscripts which hopefully can be used as a media to transfer the knowledge to wider readers. Utmost thanks go to the scientific committee members who have provided enormous efforts from receiving, selecting and reviewing manuscripts. Special thanks go to the secretariat, publication, sponsorship, event and logistic divisions for giving support for the smooth run of the 1<sup>st</sup>ICMHS. Final thanks go to the steering and organizing committees for assuring the 1<sup>st</sup>ICMHS to achieve its aims. Congratulation delivered to the authors whose research finding in pharmacy, medicine, dentistry, nursing, public health, and other health sciences have indicated their novel and robust contribution to the development of health sciences.

Jember, November 2016

Ari Satia Nugraha  
On behalf of the editors  
1<sup>st</sup> ICHMS

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# DENTAL CARIES IN PREGNANT WOMEN WHO VISITED POSYANDU OF SEVERAL PUBLIC HEALTH CENTERS IN JEMBER

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### Introduction

Pregnancy is a unique period for a woman’s life, which there is physical and physiological changes including the oral cavity [1], [2].

The main salivary changes in pregnancy are saliva rate change, composition, pH, and hormone levels [3]. During pregnancy, pH of saliva and gingival fluid become more acidic [4]. Increased acid production in the oral cavity when accompanied by a lack awareness of pregnant women in maintaining the cleanliness of the oral cavity will expedite the emergence of caries. Based on data of Riskesdas Ministry of Health in 2013, the prevalence of caries in Indonesia was 53.2%, therefore the maintenance of the teeth of pregnant women should be taken into account and improved [5].

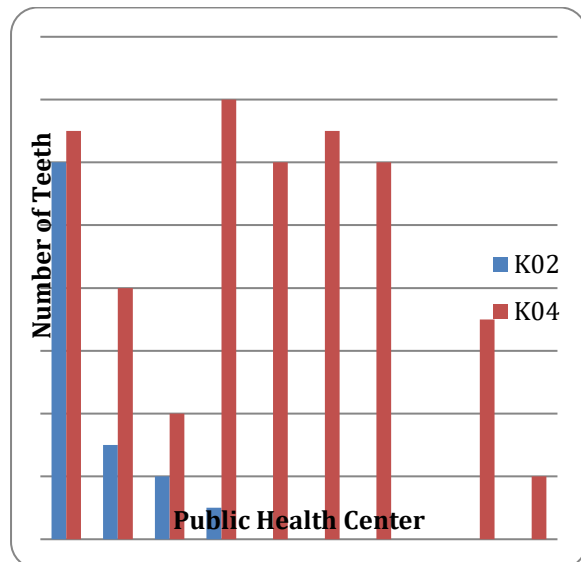
Caries etiologies are multi factorial. They are *hosts*, saliva, microorganisms and time [6]. Based on the background above, author wanted to know dental caries in pregnant women who visit *Posyandu* of several public health centers in Jember.

### Methods

A descriptive observational study with cross sectional approach. This is a brief search, observation or data collection at once at a time (point time approach) [7]. This research was conducted in January and February 2016. The study was located in Mayang, Ledokombo, Pakusari, Rambipuji, Jember Kidul, Jenggawah, Tanggul, Kencong, Ambulu and Jelbuk public health center Jember. Sample size are 151 subjects. The variables of research is dental caries in pregnant women. The data collection are using the diagnosis of dental and oral disease of public health centers, codes which were used in this study were K02 and K04. K02 diagnosis is namely dental caries in the form of pulp irritation and hyperemia of the pulp, while K04 is a disease of the pulp and periapical tissues (abscess, granuloma, pulp polyp, pulpitis, gangrene of the pulp, root gangrene). Data were analyzed descriptively and presented in frequency distribution tables and graphs.

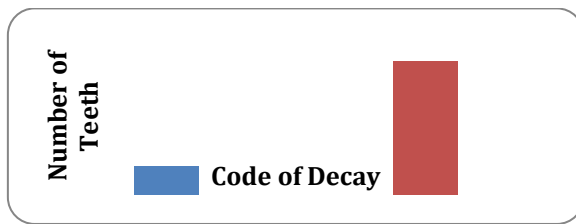
### Result

The results of the study of dental caries in pregnant women who visited several *Posyandu* in Jember presented in the graph below :



**Figure 1. Number of Dental and Oral Disease Diagnosis Suffered by Pregnant Women Who Visited *Posyandu* in Several Public Health Center, in Jember.**

Table 1 and Figure 1 above show that Mayang public health center with 31 samples had 12 teeth in K02 and 13 teeth in K04. Ledokombo public health center with 17 samples had 3 teeth in K02 and 8 teeth in K04. Pakusari public health center with 6 samples had 2 teeth in K02 and 4 teeth in K04. Rambipuji public health center with 19 samples had 1 teeth in K02 and 14 teeth in K04. Jember Kidul public health center with 18 samples had no teeth in K02 and 12 teeth in K04. Jenggawah public health center with 18 samples had no K02, meanwhile had 13 teeth in K04. Tanggul public health center with 17 samples had no K02, meanwhile had 12 teeth in K04. Kencong public health center with 5 samples had no K02 and K04. Ambulu public health center with 17 samples had no K02, meanwhile had 7 teeth in K04. Jelbuk public health center with 3 samples had no K02 meanwhile had 2 teeth in K04. The ratio of the number of K02 diagnosis to K04 diagnosis in pregnant women in several Public Health Center in Jember can be seen in the following graph:



**Figure 2. Comparison of K02 Diagnosis to K04 Diagnosis in Pregnancy in several Public Health Center in Jember .**

The figure above shows that pregnant women with dental caries K04 diagnosis involved 85 teeth, while the K02 diagnosis involved 18 teeth.

#### DISCUSSION

The most number diagnosis of dental caries in pregnant women are pulp diseases and periapical tissues (abscess, granuloma, pulp polyp, pulpitis, gangrene of the pulp, root gangrene), this is due to the low level of knowledge and the willingness to maintain oral health, so that dental disease will continue to get worse. Knowledge is associated with self-motivation as well as the surrounding. Not only is the knowledge but also good attitudes and behavior will give the good result in oral health status. This behavior can affect oral health status, thus caries does not extend into the pulp and doesn't turn into periapical abnormalities [8].

The study of Hajikazemi et al., which was conducted on 320 pregnant women showed the results that they were lack of knowledge, attitude and practice to maintain oral health, only 5.6% of respondents had good levels of knowledge, while 30% of respondents had good attitudes towards health and 34,4% of respondents performed good maintenance health actions [9].

A total of 56.3% caries in pregnant women has turned into the pulp and periapical tissue abnormalities. Increased sexual hormones, especially progesterone and estrogen hormones during pregnancy can lead to changes in the oral cavity in the form of increased permeability of gingiva blood vessels so that it becomes very sensitive to local irritants such as plaque, calculus and caries [10], beside that, changes in the oral environment and less hygiene in oral cavity are also the causes. One of factors that may support quicker process of caries in the pregnant women is salivary pH. Their salivary pH are more acidic because they often eat foods that contain lots of sugar. Nausea and vomiting which often occur in pregnant woman making them lazy to maintain oral cavity cleanliness. As the result, acid in plaque and acid from the mouth because of nausea or vomiting are able to accelerate the process of dental caries [11], [12].

The pain of dental caries can lead to reduced appetite, poor nutritional intake thus adversely

affect the fetus that result low birth weight. Pain because of dental caries can also cause an increase in blood pressure in pregnant women which will increase a risk of eclampsia [13], [14].

#### CONCLUSION

Diagnosis of dental and oral diseases suffered mostly pregnant women of several *Puskesmas* in Jember are the pulp disease and periapical tissue disease (abscess, granuloma, pulp polyp, pulpitis, gangrene of the pulp, root gangrene).

#### REFERENCE

1. Sultana RR, Zafarullah SN, Kirubamani NH. 2011. Saliva Signature of Normal Pregnant Women in Each Trimester as Analyzed by FTIR Spectroscopy. *Indian Journal of Science and Technology* 4(5):481-486.
2. Cunningham FG. 2005. *Obstetri Williams Volume 1*. 21 ed. Jakarta: EGC.
3. Direktorat Jenderal Bina Upaya Kesehatan Republik Indonesia. 2012 . *Pedoman pemeliharaan kesehatan gigi dan mulut ibu hamil dan anak usia balita bagi tenaga kesehatan di fasilitas pelayanan kesehatan*. Jakarta: Kementerian Kesehatan RI.
4. Fejerskov Ole, Kidd Edwina. 2008. *Dental Caries the disease and its clinical management second edition*. Oxford: Blackweel Munksgaard.
5. Badan Penelitian dan Pengembangan Kesehatan. 2013. *Pokok-pokok Hasil Riskesdas Indonesia Tahun 2013*. Jakarta: Kementrian Kesehatan RI.
6. Pitts, Nigel. 2009. *Detection, Assesment, Diagnosis and Monitoring of Caries*. United Kingdom: Dental Heath Services and Research Units University of Dundee.
7. Budiharto 2008. *Metode Penelitian Kesehatan dengan Contoh Bidang Ilmu Kesehatan Gigi*. Jakarta. EGC.
8. Purwaka, Dora Pratiwi. 2014. *Hubungan antara Tingkat Pendidikan, Pengetahuan dan Perilaku Ibu Terhadap Status Karies Pada Anak Usia Prasekolah di Tk Laksmi, Kartasura, Kab.Sukoharjo Tahun 2014*. Yogyakarta: Fakultas Kedokteran Gigi Universitas Muhamadiyah Yogyakarta.
9. E Hajikazemi, F Oskouie, S Mohseny, S Nikpour, H Haghany. The Relationship between Knowledge, Attitude and Practice of Pregnant Women About Oral and Dental Care. *European Journal of Scientific Research* 24 (4), 556-562
10. Ganesh, Akila, et al., 2011. A Survey on Dental Knowledge and Gingival Health of Pregnant Women Attending Government Maternity Hospital, Chennai. *Journal of Oral Health & Community Dentistry*. 5(1): 24-30

11. Manuaba IBG, Manuaba IAC, Manuaba IBGF.2007. *Pengantar Kuliah Obstetri*. Jakarta: EGC.
12. Council on Clinical affairs, Committee on the Adolescent. 2012. Guideline on oral health care for the pregnant adolescent (Revised). *Journal of America Academy of Pediatric Dentistry*. 37(6): 159-165
13. Carranza FA, Newman MG. 2015. *Clinical Periodontology*. 12 ed. Philadelphia: WB Saunders Co.
14. Roberson, T.M; Heymann, H.O; Jr. Swift, E.J. 2006. *Art and Science of Operative Dentistry*. Fifth Edition. Missouri : Elsevier.