Cultural Environment, Behavior and Diabetes Melitus Incident in Urban Area of Semarang, Indonesia

by Oktia Handayani

Cultural Environment, Behavior and Diabetes Melitus Incident in Urban Area of Semarang, Indonesia

Oktia Woro Kasmini Handayani, Sri Ratna Rahayu, Efa Nugroho, Berta Kalswahermawati

Abstract— Diabetes occurs 10 years faster in the Southeast Asian region than the European region, which occurs in the most productive periods. Cultural differences as well as cultural transitions can be determinant factors of health cases in urban and rural areas. The purpose of this research is to analyze the effect of the cultural environment, behavior and the occurrence of diabetes mellitus in urban areas of Semarang, Indonesia. The research was conducted in the area of Semarang Regency, using a quantitative approach and supported by qualitative data, the population is DM type 2 patients, sample size of 200 people, with a purposive sampling technique. The independent variable consists of cultural environment, behavior, and the dependent variable is DM. The data is analyzed with regression test method. Cultural environment affects behavior positively, with t value of 4,690 and p (sig.) 0.000, this means sig <0.05, while the effect of behavior on Diabetes Mellitus obtained t value 2.950 with p-value (sig.) 0.003 this means that sig <0.05, thus it can be interpreted that the behavior has a significant effect on Diabetes Mellitus. The cultural environment directly affects the incidence of DM. It can also shape a person's behavior or lifestyle or habit, whether healthy or unhealthy one, which in turn causes symptoms of DM.

Keywords— Behavior, Cultural Environment, Diebetes Millitus, Urban.

I. INTRODUCTION

In 2013 diabetes cases was one of the highest health costs in the world, at around 612 billion dollars (11% of total health cost). From 2010 to 2030, losses from Gross Domestic Product (GDP) worldwide due to diabetes are estimated at around 1.7 trillion dollars. In addition, diabetes occurs 10 years faster in the Southeast Asian region than the European region, which occurs in the most productive periods. Treatment that must be done during life, resulting in economic pressure and financial burden on the family, thereby increasing the severity of symptoms and grievance of people with diabetes (Sneha, 2017; Tol, 2013).

Eating habits of people in Myanmar who like creamy (soft) foods with high fat and sugar content with delicious taste, and eat fruits with high sugar content such as mangoes at low prices and a positive attitude towards the fat body shape is a potential for the emergence of diabetes. Besides religious factors or related to the cultural system, which requires removing footwear when visiting religious places causes the emergence of wound complications in diabetes, and improper treatment, namely by visiting a traditional healer, giving leaves or herbal powder to the wound, all of which add severity of diabetes suffered (Than, 2014). Cultural differences as well as cultural transitions can be determinants of health cases in urban and rural areas. Health cases can be in the form of infectious or non-communicable diseases. The purpose of this research is to analyze the effect of the cultural environment, behavior and the occurrence of diabetes mellitus in urban areas of Semarang, Indonesia.

II. METHODS

The research was conducted in the area of Semarang Regency, this area was chosen as the location with the reasons: 1) an area with DM cases above the national prevalence, 2) an area that became a series of studies in accordance with the compiled road map, and 3) an easily accessible area by researchers at any time. The study uses a quantitative approach that is supported by qualitative data, the population in this study is DM type 2 patients, the sample size is calculated by the formula of Naing et al (2006), and a sample of 200 is determined, with a purposive sampling technique. The independent variable consists of cultural environment, behavior, and the dependent variable is DM. The instruments used consisted of questionnaires, checklist sheets and observation sheets. The validity and reliability test of the questionnaire was carried out on the question / statement item using the Cronbach Alpha coefficient formula. Data analysis using regression test.

III. RESULTS

The study was conducted in Semarang Regency, data collection was carried out at the health center during the clinical examination, in DM and non DM patients. The age of respondents ranged from 43 to 80 years, most at the age of 55-60 years (43%), with the most education at the high school level (52%).

The results of the normality test showed that the research data variables were normally distributed and the results of the linearity test showed that the relation between the independent variables and the dependent variable was partially linear.

Oktia Woro Kasmini Handayani, was Professor of Nutrition in Department of Public Health Science, Universitas Negeri Semarang (e-mail: oktia_woro@yahoo.co.id).

Sri Ratna Rahayu, was graduate of doctoral program from Department of Hygiene, Kanazawa University School of Medicine, Japan (e-mail: s.ratnarahayu@gmail.com).

Efa Nugroho was a lecture of Health Promotion Programe in Department of Public Health Science, Universitas Negeri Semarang, Indonesia (phone: +628999349998; e-mail: efa.nugroho@mail.unnes.ac.id).

Bertakalswa Hermawati was a lecture of Health Promotion Programe in Department of Public Heath Science, Universitas Negeri Semarang, Indonesia (e-mail: bertahermawati@gmail.com).

Regression results obtained that the t value of 4.690 with p (sig.) 0,000, this means sig <0.05, thus it can be interpreted that the cultural environment affects behavior positively, which means that if the cultural environment is better then the behavior will be better as well. The effect of behavior on Diabetes Mellitus obtained t value of 2.950 with a p-value (sig.) 0.003 this means that sig <0.05, thus it can be interpreted that the behavior has a significant effect on Diabetes Mellitus in a positive way which means that if the behavior is better then Diabetes Mellitus will decrease.

IV. DISCUSSION

The cultural environment in this research is assessed from elements of habits, values, beliefs and myths that will directly affect the incidence of DM. The results include: 1) habits related to excessive eating consumption, habit of providing or facilitating various snacks and foods high in carbohydrate snacks for family members, lack of sports activities, providing less rest time and cannot manage stress properly, 2) existing values in the community related to DM are still not good, such as being healthy is not considered as the highest value, so a person does not maintain his lifestyle with healthy food and not excessive, adequate exercise, regular health checks, 3) trust in treatment, where people are still dependent or highly believe in herbal medicines that are known based on information from the environment and various media. The cultural environment directly affects the incidence of DM. the cultural environment can also shape a person's behavior or lifestyle or habit, both healthy and unhealthy one, which in turn causes symptoms of DM.

Dariush's research found that in people with four low-risk lifestyle, namely physical activity, eating habit, smoking, and drinking alcohol had an 82% lower in the incidence of DM. In the event that a good body mass index is added to 4 other low-risk lifestyle factors, the incidence of DM is 89% lower. Overall, 9 out of 10 new cases of diabetes emerged due to these 5 lifestyle factors (Dariush M, 2009).

Cultural factors in this case cultural beliefs or values are important factors that can affect the quality of health, care processes and the results of care for people with DM (Julio AR, 2016). In addition, differences in race, ethnicity, tradition will result in differences in health care and treatment (Garcés, Scarinci, & Harrison, 2006; Horowitz, Davis, Palermo, & Vladeck, 2000; Mitra, Sahu, Chakrabarty, Bharati, & Bharati, 2007). Nutrition parenting in the family will affect the habit of consumption of a person who is part of one's lifestyle. The results of the study are in line with the findings in this research which show that the cultural environment contributes the most to the incidence of DM. The contribution of the cultural environment can be directly or indirectly through behavior first.

The eating habit or diet of people in Myanmar, which is part of the culture, where people like creamy (soft) foods with high fat and sugar content with delicious taste, and eat fruits with high sugar content such as mangoes with cheap prices and the existence of a positive attitude towards fat body shape is the potential for the emergence of diabetes (Than, 2014). Other research results mention eating habit is a related factor in the prevention and treatment of type 2 DM (Karmeen, 2004). Various socio-cultural and psychosocial problems are factors that play an important role in the incidence of diabetes and cause diabetes treatment to be ineffective (Than, 2014; Barry, 2013). This finding is also in line with the results of research which states that, family support and the role of relatives have an important role in the improvement of diabetes patient (Sneha, 2017; Tol, 2013). Whereas lifestyle is the main reason for an increase in diabetes cases (Edin, 2016; Ambepitiyawaduge, 2012; Maha, 2016, Than, 2014).

The cultural environment aspect is a factor that needs attention related to the DM problem, this can be seen from other study conducted by Lopez (2006), getting the conclusion that policies related to the incidence of obesity and chronic diseases in the United States are made by considering the cultural environment, social factors, the physical and political environment of the region, whether in the urban, suburban or rural environments. It can be said that the environment in the community can be negative (detrimental) or potentially be empowered.

V. CONCLUSION

Cultural environment affects behavior positively, with t value of 4,690 and p (sig.) 0,000, this means sig <0.05, therefore if the cultural environment is better, then the behavior will be better as well. The effect of behavior on Diabetes Mellitus has t value of 2.950 with a p-value (sig.) 0.003 this means that sig <0.05, thus it can be interpreted that the behavior has a significant effect on Diabetes Mellitus, with a positive effect which means that if the behavior is better then Diabetes Mellitus will decrease. The cultural environment directly affects the incidence of DM. the cultural environment can also shape a person's behavior or lifestyle or habit, both healthy and unhealthy one, which in turn causes symptoms of DM.

REFERENCES

Ambepitiyawaduge Pubudu De Silva et.all. 2012. Social, cultural and economical determinants of diabetes mellitus in Kalutara district, Sri Lanka: a cross sectional descriptive study. Int J Equity Health, 11: 76.

Barry W. Rovner, Robin J. Casten, Lynn Fields Harris. 2013. Sociocultural Influences on Diabetes Self-Management Behaviors in Older African Americans. Diabetes Spectrum, 26(1): 29-33.

Edin Begic, Amira Arnautovic, and Izet Masic . 2016. Assesment Of Risk Factors For Diabetes Mellitus Type2. Mater Sociomed, 28(3): 187–190.

Lopez Russell P, Hynes H Patricia. 2006. Obesity, Physical Activity, and The Urban Environment: Public Health Research Needs. Environmental Health: A Global Access Sciences Source, 5:25

Maha Alsejari. 2016. Sociocultural Characteristic, Lifestyle, and Metabolic Risk Factors Among a Sample of Kuwaiti Male University Students. American Journals of Men's Health 11 (2): 308-317

Sneha D. Patil1, Jyotsna S. Deshmukh1, Chaitanya R. Patil. 2017. Social factors influencing diabetes mellitus in adults attending a tertiary care hospital in Nagpur: a cross sectional study. International Journal of Research in Medical Sciences 5(11):4988-4992

Than Than Aye, Moe Wint Aung, Ei Sandar Oo. 2014. Diabetes mellitus in Myanmar: Socio-cultural challenges and strength. J Soc Health Diabetes 2:9-13

Tol A, Sharifirad G, Shojaezadeh D, Tavasoli E, Azadbakht L. 2013. Socio economic factors and diabetes consequences among patients with type 2 diabetes. J Educ Heal Promot. 2:12

Karmeen D. Kulkarni. 2004. Food, Culture, and Diabetes in the United States. Clinical Diabetes, 22(4)

Dariush Mozaffarian, Aruna Kamineni, Mercedes Carnethon, Luc Djoussé, Kenneth J. Mukamal, and David Siscovick. 2009. Lifestyle Risk Factors and New-Onset Diabetes Mellitus in Older Adults:The Cardiovascular Health Study. Arch Intern Med., 69(8): 798–807

Garcés, I. C., Scarinci, I. C., & Harrison, L. (2006). An examination of sociocultural factors associated with health and health care seeking among latina immigrants. Journal of Immigrant and Minority Health, 8(4), 377–385. https://doi.org/10.1007/s10903-006-9008-8

Horowitz, C. R., Davis, M. H., Palermo, A.-G. S., & Vladeck, B. C. (2000). Approaches to eliminating sociocultural disparities in health. Health Care Financing Review, 21(4), 57–74.

Mitra, M., Sahu, P. K., Chakrabarty, S., Bharati, S., & Bharati, P. (2007). Nutritional and Health Status of Gond and Kawar Tribal Pre-school Children of Chhattisgarh, India. Journal of Human Ecology, 21(4), 293–299. https://doi.org/10.1080/09709274.2007.11905988

Oktia Woro Kasmini Handayani was born on Jogjakarta, October 1, 1959. She holds general practitioners degree, University of Diponegoro, Semarang, Central Java, Indonesia, on 1987, master degree in Public Health, Gadjah Mada University, Jogjakarta, Indonesia, on 1999 and holds a doctoral degree in Development Study at Satya Wacana University, Salatiga, Central Java, Indonesia, 2011. She is a lecturer of Public Health Department, Semarang State University since 1987 until now. She was Head of Bachelor Degree Program, Public Health Department on 2012 and Head of Master Degree Program, Public Health, on 2013. Now, she is VICE DEAN of General Affairs and Finance on Sport Faculty, Semarang State University. She published 1) Social Capital at Health Development Perspective, Semarang, Central Java by Fastindo on 2014 and 2) Nutritional status of Health Education and Parenting Nutrition for students, Semarang, Central Java by Fastindo on 2015. The published article are Health Promotion Models to reduce childhood obesity in Elementary School; A Comparison study between Indonesia and Australia". Journal of scientific research and reports, vol. 7, issue 01, pp 1-10, 2015. She is interested in Public Health Nutrition. Prof. Dr. dr. Oktia Woro Kasmini Handayani, M.Kes is a member of Ikatan Dokter Indonesia (IDI), Ikatan Ahli Kesehatan Masyarakat Indonesia (IAKMI) and Chief of Jejaring Nasional Pendidikan Kesehatan (JNPK).

Sri Ratna Rahayu was born in Semarang, May 18, 1972. She holds a general practitioner degree, University of Diponegoro, Semarang, Central Java, Indonesia, on 1999, master degree in Public Health Diponegoro University, Semarang, Indonesia, on 2006 and holds a doctoral degree in Medical Science at Kanazawa University, Japan, 2015. She is a lecturer of Public Health Department, Semarang State University since 2008 until now. She was Head of Study Health Center of Research and Devotion, Semarang State University in 2011. Head of Master Degree Programe on 2015 till now.She published 1) Association between posttraumatic stress disorder (PTSD) severity and ego structure of the Nanai people, 2) Factors associated with tuberculosis cases in Semarang District, Indonesia: case-control study performed in the area where case detection rate was extremely low,3) Posttraumatic stress disorders in the Nanai after pollution of the Amur River: ethnocultural analysis, 4) Effect of vitamin K2 on trabecular bone mass in senescence-accelerated mice P6 with water-immersion restraint stress, 5) A Doubled-Blind, Crossover-RCT in T2DM for Evaluating Hypoglycemic Effect of P. indicus, M. charantia, P. vulgaris and A. paniculata in Central Java , 6) Tuberculosis Suspect in the Companies in Semarang District Indonesia; Case-Control Study .She is interested in Public Health Epidemiology. dr Sri Ratna Rahayu, M.Kes, PhD member of Ikatan Dokter Indonesia (IDI), Ikatan Ahli Kesehatan Masyarakat Indonesia(IAKMI) and Persatuan Dokter Herbal Medik Indonesia (PDHMI).

Efa Nugroho was born in Banjarnegara, Indonesia on 24th February 1989. He graduated from Semarang State University at Indonesia with a Bachelor of Public Health in 2012. Then, he is studying at the Diponegoro University to complete his Masters of Health degree in Health Promotion. He was a lecturer of Health Promotion in Semarang State University. He published HIV-AIDS Prevention for Public Health (Semarang, Indonesia : Diponegoro, 2014), articles in International Seminar in Public Health Education Prociding (Semarang, Indonesia, Semarang State University 2015), and articles in Unnes Journal of Public Health (Semarang, Indonesia, Semarang State University, 2016). He is interested in reproductive health and health promotion. Efa Nugroho, S.KM was a member of International Planned Parenthood Federation (IPPF), Voluntary Services Overseas (VSO), and Indonesian Youth Volunteer.

Bertakalswa Hermawati was born on Semarang, September 20, 1979. She has a bachelor degree in Psychology at Soegijapranata University Semarang, Indonesia on 2001. She also graduates from Psychology Profession Degree, Gadjah Mada University, Jogjakarta, Indonesia, on 2003 and holds a master degree in Psychology at Indonesia University, Jakarta, Indonesia. She is a lecturer of Public Health Department, Semarang State University. She is interested in child development and health promotion. Bertakalswa Hermawati, S.Psi., M.Si is a member of Himpunan Psikologi Indonesia (HIMPSI).

Cultural Environment, Behavior and Diabetes Melitus Incident in Urban Area of Semarang, Indonesia

8 saspublisher.com
Internet Source
1%

9 pesquisa.bvsalud.org
Internet Source
1%

10 Natalia Korshunova, Hironobu Katsuyama, Masashi Demura, Hideji Tanii et al. "Posttraumatic stress disorders in the Nanai after pollution of the Amur River: ethnocultural analysis", Environmental Health and Preventive Medicine, 2013
Publication
1%

11 libmast.utm.my
Internet Source
<1%

12 content.nejm.org
Internet Source
<1%

13 circ.ahajournals.org
Internet Source
<1%

14 digitalarchive.gsu.edu
Internet Source
<1%

15 journal.unnes.ac.id
Internet Source
<1%

16 Dariush Mozaffarian, Emelia J. Benjamin, Alan S. Go, Donna K. Arnett et al. "Heart Disease and Stroke Statistics—2016 Update", Circulation, 2016
<1%

Exclude quotes   Off   Exclude matches   Off

Exclude bibliography   On

Cultural Environment, Behavior and Diabetes Melitus Incident in Urban Area of Semarang, Indonesia