



UNIVERSITI PUTRA MALAYSIA

***PREVALENCE OF MODERN CONTRACEPTIVE USE AND ITS
ASSOCIATED FACTORS AMONG DIABETIC AND HYPERTENSIVE
WOMEN IN THE REGISTERED AGE IN A PUBLIC HOSPITAL IN
BATAM, INDONESIA***

VIVIN DIAN DEVITA

FPSK(m) 2019 46



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By

VIVIN DIAN DEVITA

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Master of Science**

August 2018

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

PREVALENCE OF MODERN CONTRACEPTIVE USE AND ITS ASSOCIATED FACTORS AMONG DIABETIC AND HYPERTENSIVE WOMEN IN THE REGISTERED AGE IN A PUBLIC HOSPITAL IN BATAM, INDONESIA

By

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August 2018

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Introduction: Hypertension and diabetes are still considered as high-risk conditions during pregnancy. Adverse pregnancy outcomes are greater among these women in these conditions. The optimum timing of pregnancy and avoidance of unintended pregnancy by using modern contraceptive methods may reduce mortality and morbidity. However, little is known regarding the contraceptive uptake among these women and the factors associated with it.

Objectives: To determine the prevalence of modern contraceptive use and its associated factors among reproductive women with diabetes and hypertension in Batam, Indonesia.

Methodology: A cross-sectional study was conducted to determine the prevalence and the factors associated with modern contraceptive practices among women with hypertension and diabetes who were registered in Rumah Sakit Umum Daerah Kota Batam and who had been diagnosed with diabetes only, hypertension only or both. A total of 213 total respondents was selected using the systematic random sampling method. The data were collected from the 1st July 2017 to 13th October 2017 using a self-administered questionnaire.

Results: The response rate was 90.6% (out of 235, 213 which were usable). Among the respondents, the overall percentage of currently practiced modern contraceptive methods was 53.1%. The mean age of the respondents was 39.7 (SD= 6.5). The chi square results showed that currently practiced modern contraception was higher

among women in the younger age group of 15 to 40 years ($p < 0.001$), those who had one or two children ($p = 0.008$), those who had good knowledge regarding modern contraceptive methods ($p < 0.001$), those who had positive attitudes towards modern contraceptive methods ($p = 0.02$) and women who had good household decision-making in their family ($p = 0.039$). However, the result in the Multiple Logistic Regression showed that the factors associated with contraceptive practice were young age (AOR=9.38, 95% CI= 2.40-36.57), no more than two children (AOR= 33.8, 95% CI= 2.82-406.12), good level of knowledge regarding modern contraceptive methods (AOR= 2.40, 95% CI= 1.21-4.78) and good household decision-making in the family (AOR= 4.24, 95% CI= 1.28-14.02).

Conclusion: This study has identified that only about half of diabetic and hypertensive women in the reproductive age were practicing modern contraceptive methods in Batam. Young age, having children, having good level of knowledge and good household decision-making were found to be predictors of the modern contraception methods currently practiced among reproductive women with hypertension and diabetes in Batam. For future study, collaboration with BKKBN (*Badan Kependudukan dan Keluarga Berencana Nasional*) will be needed to promote the right contraceptive methods for women with chronic conditions and it will lead to an increase in the prevalence of modern contraceptive uptake among women with chronic diseases.

Keywords: Modern contraceptive use, hypertension, diabetes

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

KELAZIMAN PENGGUNAAN KONTRASEPSI MODEN DAN FAKTOR-FAKTOR YANG BERKAITAN DI KALANGAN WANITA PESAKIT KENCING MANIS DAN TEKANAN DARAH TINGGI DALAM UMUR REPRODUKTIF DI HOSPITAL UMUM DAERAH TERDAFTAR DI BATAM, INDONESIA

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Pengenalan: Tekanan darah tinggi dan kencing manis merupakan kondisi yang berisiko tinggi semasa kehamilan. Risiko kehamilan adalah lebih tinggi di kalangan wanita dengan penyakit ini. Mengoptimalkan masa kehamilan dan mengelakkan kehamilan yang tidak diinginkan dengan menggunakan kontraseptif moden adalah kaedah untuk mengurangkan kematian dan angka morbiditi pesakit. Walau bagaimanapun, tidak banyak yang mengetahui tentang wanita yang tahu mengenai kontraseptif moden yang berkesan di kalangan wanita dengan kencing manis dan tekanan darah tinggi serta faktor yang berkaitan dengannya.

Objektif: Untuk menentukan kelaziman penggunaan kontrasepsi moden dan faktor-faktor yang berkaitan dengannya di kalangan wanita pesakit kencing manis dan tekanan darah tinggi dalam umur reproduktif di Batam, Indonesia

Metodologi: Sebuah kajian keratan rentas telah dijalankan untuk menentukan kelaziman dan faktor-faktor yang berkaitan dengan amalan kontrasepsi moden di kalangan wanita pesakit kencing manis dan tekanan darah tinggi yang berdaftar di Rumah Sakit Umum Daerah Kota Batam dan telah disahkan menghidap sakit kencing manis sahaja atau tekanan darah tinggi sahaja atau kedua-duanya. Teknik Pensampelan rawak yang sistematik digunakan untuk memilih responden. Kajian telah dijalankan dari 1 Julai 2017 sehingga 13 Oktober 2017 menggunakan borang soal selidik yang diisi sendiri oleh responden.

Hasil: Kadar respon bagi kajian ini ialah 90.6%. Di kalangan responden, jumlah keseluruhan wanita yang mengamalkan kontrasepsi semasa ialah 53.1%. Purata umur responden ialah 39.7 ± 6.51 tahun dan berkisar diantara 22 sehingga 49 tahun. Keputusan Khi Kuasa dua menunjukkan wanita dengan umur lebih muda (15-40) ($p=0.0001$), mempunyai anak satu atau dua ($p=0.008$), berpengetahuan baik berkenaan kontrasepsi moden ($p=0.0001$), memiliki sikap positif mengenai kontrasepsi moden ($p=0.02$) dan mempunyai pengurusan yang baik perihal isi rumah keluarga ($p=0.039$) adalah signifikan secara statistik dengan penggunaan kontrasepsi moden semasa ($p<0.05$). Walau bagaimanapun, hasil dari regresi logistik berganda telah menunjukkan bahawa faktor-faktor yang berkaitan dengan amalan kontrasepsi moden semasa ialah usia muda (AOR=9.38, 95% CI= 2.40-36.57), jumlah anak yang dimiliki (AOR= 33.8, 95% CI= 2.82-406.12), berpengetahuan baik mengenai kontrasepsi moden (AOR= 2.40, 95% CI= 1.21-4.78), dan mempunyai pengurusan yang baik dalam pengurusan rumah (AOR= 4.24, 95% CI= 1.28-14.02).

Kesimpulan: Kajian ini telah mengenal pasti bahawasanya separuh dari kalangan wanita dalam usia reproduktif yang menggunakan kaedah kontraseptif moden. Usia muda, mempunyai anak, berpengetahuan baik berkenaan kontrasepsi moden dan mempunyai pengurusan yang baik dalam pengurusan rumah menjadi faktor ramalan dalam amalan kontrasepsi moden di kalangan wanita pesakit kencing manis dan tekanan darah tinggi dalam umur reproduktif di Batam. Untuk kajian dimasa yang akan datang, dicadangkan untuk melakukan kerjasama dengan BKKBN (*Badan Kependudukan dan Keluarga Berencana Nasional*) untuk meningkatkan jumlah pengguna kontrasepsi moden.

Kata Kunci: Amalan kontrasepsi moden, tekanan darah tinggi, kencing manis.

ACKNOWLEDGEMENTS

Firstly, I would like to express my sincere gratitude to my advisor Dr. Rosliza Abdul Manaf (MBBS, MComMed, PhD) for giving her continuous support and professional adviser and guidance and for my master study and related research. Her patience, motivation, and immense knowledge. She continuously allowed this paper to be my own work, but steered me in the right direction whenever she thought I needed it.

Besides my advisor, I would like to thank you to the rest my thesis supervisory committee member: Dr. Suriani Ismail and Dr. Afdhalun A Hakim SPJP, FIHA, FAsCC, for their insightful comment sand encouragement.

My sincere thanks also goes to Dr. Dedi Suradi, Dr. Ganda Hidayat, Sp.PD and Dr. Ade Seniorita, Sp.PD, who had provided me with an opportunity to join their team as researcher and who gave me permission to conduct the research in Rumah Sakit Umum Daerah Kota Batam. Without their precious support, I would not possible to conduct this research.

I would also thank to my parents, Mama and Papa for continuously supporting me in physiological and financial aspect.

This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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TABLE OF CONTENTS

	Page
ABSTRACT	i
ABSTRAK	iii
ACKNOWLEDGEMENTS	v
APPROVAL	vi
DECLARATION	viii
LIST OF TABLES	xiii
LIST OF FIGURES	xv
LIST OF ABBREVIATIONS	xvi
CHAPTER	
1 INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	4
1.3 Significance of Study	5
1.4 Research Question	5
1.5 Research Objective	5
1.5.1 General Objective	5
1.5.2 Specific Objectives	6
1.6 Research Hypothesis	6
2 LITERATURE REVIEW	7
2.1 History of Modern Contraception	7
2.2 Access to Modern Contraception in South East Asia	8
2.3 Use of Modern Contraception in Indonesia	9
2.4 Use of Modern Contraception in Batam	11
2.5 The types of Modern Contraception	12
2.5.1 Hormonal Injections	12
2.5.2 IUD	13
2.5.3 Pills	13
2.5.4 Barrier Methods	14
2.5.4.1 Female Condoms	14
2.5.4.2 Male Condoms	15
2.5.5 Implants	16
2.6 Contraceptive Use among Diabetic Women	16
2.7 Contraceptive Use among Women with Hypertension	18
2.8 Diabetes and Hypertension Treatment in Indonesia	19
2.9 Contraception Access in Indonesia	19
2.10 Factors Associated with Contraception Use	20
2.10.1 Socio-Demographics and Socio-Economics Factors	20
2.10.1.1 Age	20
2.10.1.2 Education Level	21
2.10.1.3 Number of Currently Living Children	22
2.10.1.4 Religion	22
2.10.1.5 Working Status	23

2.10.1.6	Family Income	23
2.10.2	Attitude Factors	24
2.10.2.1	Communication between Husband and Wife	24
2.10.2.2	Discussion with Health Workers	24
2.10.2.3	Decision Making	25
2.10.3	Knowledge about Modern Contraception among Hypertension and Diabetes Women	25
2.10.4	Other Factors	26
2.11	Conceptual Framework	26
3	METHODOLOGY	28
3.1	Study Location	28
3.2	Study Design	29
3.3	Study Duration	29
3.4	Study Population	29
3.4.1	Inclusion Criteria	29
3.4.2	Exclusion Criteria	29
3.5	Sample Size	30
3.5.1	Using Formula for One Proportion	30
3.5.2	Using Formula for Two Proportion	31
3.6	Sampling Method	32
3.7	Variables	33
3.7.1	Dependent Variable	33
3.7.2	Independent Variable	33
3.8	Data Analysis	34
3.9	Definition of Terms	35
3.9.1	Practice of Modern Contraceptive	35
3.9.2	Respondent's Socio-Demographics and Socioeconomic	35
3.9.3	Attitude Factors	35
3.9.4	Knowledge about Modern Contraception use among women with Hypertension and Diabetes	36
3.10	Data Collection	36
3.10.1	Questionnaire	36
3.10.2	Quality Control	37
3.10.2.1	Content Validity	37
3.10.2.2	Face Validity	37
3.10.2.3	Reliability	37
4	RESULTS	38
4.1	Response Rate	38
4.2	Socio-demographics and Socioeconomic Characteristics of Respondents	38
4.3	Disease Distribution among the Respondents	39
4.4	Contraceptive Use	40
4.4.1	Characteristics of Current Contraceptive Users	40
4.4.2	Reasons for Discontinuation of Contraceptive among "Ever" Used	41
4.4.3	Unmet Needs of Contraception among Non-Use	42

4.5	Communication with Health Care Workers	42
4.6	Communication and Decision Making in the Family	43
	4.6.1 Household Decision Making	43
4.7	Attitude Regarding Modern Contraceptives Methods	44
4.8	Knowledge Regarding Modern Contraceptive Methods	46
4.9	Association between Socio-Demographic Characteristics And Socioeconomics with Practice of Modern Contraceptive Methods	49
4.10	Association between Knowledge of Modern Contraceptive Methods with Practice of Modern Contraceptive Methods.	50
4.11	Association between Attitude towards Modern Contraceptive with Practice of Modern Contraceptive Methods	51
4.12	Association between Household Decisions Making With Practice of Modern Contraceptive Methods.	51
4.13	The Predictors of Modern Contraceptive Practise	52
	4.13.1 Simple Logistic Regression	52
	4.13.2 Multiple Logistic Regressions	54
5	DISSCUSSION	56
5.1	Modern Contraceptive Practices among Respondents	56
5.2	Socio Demographic Characteristics of Respondents	58
5.3	Knowledge on Modern Contraceptive Methods	61
5.4	Attitude towards Modern Contraceptive Methods	63
5.5	Factors Associated With Practice of Modern Contraception	65
6	SUMMARY, CONCLUSION AND RECOMMENDATION	68
6.1	Summary and Conclusion	68
6.2	Recommendation	68
6.3	Limitation	69
	REFERENCES	70
	BIODATA OF STUDENT	82
	LIST OF PUBLICATIONS	83

LIST OF TABLES

Table	Page
2.1 The number and proportion of women users of modern contraceptive in Asia region	9
2.2 Proportion of DM, OGT and FBS among population with age ≥ 15 years in 2013	16
2.3 Diabetic factor among reproductive age women with diabetes in 2007	17
2.4 Price of Modern Contraceptive Method in Indonesia	20
3.1 Calculation of Sample Size with two proportion	31
3.2 Statistical test for data analysis	35
4.1 The distribution of respondents according to socio-demographic and socio economic background (N=213)	39
4.2 Distribution of respondents according to number of children (N=213)	39
4.3 Disease distribution among respondents (N=213)	40
4.4 Distribution of contraceptive practice (N=213)	40
4.5 Distribution of contraceptive users among disease (N=113)	40
4.6 Distribution of contraceptive choice among active users (N=113)	41
4.7 Distribution of place to get their contraception among active users (N=113)	41
4.8 Distribution of reason of discontinuation (N=89)	41
4.9 Distribution of reason for contraceptive non-use (N=100)	42
4.10 Distribution of communication with health workers (N=213)	42
4.11 Distribution frequency of counselling (N=175)	43
4.12 Distribution of respondents having discussion with husband (N=213)	43
4.13 Distribution of refusing discussion with husband regarding family planning (N=17)	43
4.14 Distribution of household decision making (N=213)	44
4.15 Distribution of decision making type (N=213)	44

4.16	Distribution of respondents on attitude towards modern contraceptive methods * (N=212)	45
4.17	Distribution of attitude classification (N=212)	46
4.18	Distribution of respondent's knowledge regarding family planning (N=213)	47
4.19	Distribution Methods of Respondent's Knowledge Regarding Modern Contraceptive for Diabetes And Hypertension (N=213)	48
4.20	Distribution of knowledge type (N=213)	49
4.21	Association between socio-demographic characteristics and socioeconomics with practice of modern contraceptive methods (N=213)	50
4.22	Association between knowledge of family planning with practice of modern contraceptive methods (N=213)	51
4.23	Association between attitude towards family planning with practice of modern contraceptive methods (N=213)	51
4.24	Association between household decision making with practice of modern contraceptive methods (N=213)	52
4.25	Simple logistic regression to identify predictors of modern contraceptive practice (N=213)	53
4.26	Multiple logistic regressions showing predictors for modern contraceptive practice (N=213)	55

LIST OF FIGURES

Figure		Page
2.1	Indonesia family planning service providers 2014	10
2.2	Percentage of Contraceptive Use among Married Women 2015	10
2.3	Prevalence of contraception use by sub-district in Batam among reproductive women 2014	11
2.4	Conceptual Framework on Factors Associated with Modern Contraception Use among Women in Reproductive Age with Diabetes and Hypertension	27
3.1	Flow Chart of recruitment of study respondents	33

LIST OF ABBREVIATIONS

<	Less than
>	Greater than
≤	Less than or equal to
≥	More than or equal to
ACOG	American College of Obstetrics and Gynecology
AOR	Adjusted Odds Ratio
BTL	Bilateral Tubal Ligation
BKKBN	National Family Planning Coordinating Board
CI	Confidence Interval
COC	Combinded Oral Contraceptive
COR	Crude Odds Ratio
CU-IUD	Copper Intrauterine Device
CI	Confidence Interval
DMPA	Depot Medroxy Progesterone Acetate
EC	Emergency Contraception
FC	Female Condoms
FP	Family Planning
HIV	Human Immudeficiency Virus
ICPD	International Conference on Population and Development
IUD	Intrauterine Device
JKEUPM	Ethics Committee for Research Involving Human Subjects
LARC	Long-Acting Reversible Contraceptives
LNG-IUD	Levonotgestrel Intrauterine Device
MDGS	Millennium Development Goals

NAC	National AIDS Commission
OCP	Oral Contraceptive Pills
STIs	Sexually Transmitted Infections
TV	Television
UK	United Kingdom
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNDP	United Nations Development Programme
USA	United States Of America
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Background

As of 2016, World Health Organization (WHO) announces that 56.9 million global deaths were caused by non-communicable diseases (NCDs). NCDs such as, heart disease, hypertension, diabetes, cancers and chronic respiratory diseases are major contributors of mortality and morbidity rates around the globe, causes 80% of death in low income and middle income countries (Alwan et al., 2009). Indonesia as one of the middle income country and the world's fourth most populated country stated by world bank, has the seventh largest number of diabetic patients (7.6 million), despite relatively low prevalence (4.8% including both diabetes type 1 and 2 in individuals aged 20–79 years) in 2012 (Soewondo et al., 2013). The data from the demographic health survey showed that prevalence of diabetes and hypertension had increased in five years, from 1.1% in 2007 to 2.1% in 2013. Similarly, the prevalence of hypertension had increased from 7.6% in 2007 to 9.5% in 2013 among 252 million population in Indonesia (Profil Kesehatan Indonesia, 2014). At the national level, diabetes was identified as the third main cause of death after stroke and hypertension, ahead of cancer and chronic obstructive pulmonary disease.

Human Development Index (HDI) is a summary of statistics, used to measure life expectancy, access to knowledge and a decent standard of living. A country with high life expectancy, good education, and high average income will score a higher HDI (Human Development Report, 2018). In 2017, Indonesia was ranked at the 116th position out of 189 countries and territories (Fatoni et al., 2015). In order to rise through the rankings, Indonesia aims to increase the index for healthy life by providing public health services across the country. In this strategy, the health services are prioritizing on health improvement, illness prevention, and focusing on various health problems found in society as a whole. To complete this mission, Community Health Centre (PUSKESMAS) will be on the front lines in providing healthcare for population on sub-district level. PUSKESMAS is assisted by Second Level Health Office located in district and Level one Health Office in the province or town, as a reference for more severe patients (Badan Penelitian dan Pengembangan Kesehatan, 2013).

The study by the Ministry of Health in Indonesia reported that the prevalence of chronic diseases was greater in rural (5.6%) compared to urban areas (5.1%) (Badan Penelitian dan Pengembangan Kesehatan, 2013). Hence, to expand PUSKESMAS service coverage, the government established the Center of Health Assistant Community (PUSTU) in every village located far from the city and hospital services. This center is staffed by village midwife and general practitioners (Pasaribu, 2015).

Reproductive health program had been implemented in Indonesia since 1998. This program covers four major services for reproductive health; essential reproductive health services, mother and children health services, family planning, and sexual transmission infections (STIs) preventing program including HIV and AIDs. In family planning program alone, 90 percent of the acceptors are married women. In light of this statistic, it can be seen that single women, teenagers, and old women are often excluded from receiving reproductive health services (Fatoni et al., 2015). One of the previous studies indicated that two thirds of all 3600 respondents aged between 20 and 44 engaged in pre-marital sexual intercourse without using condoms to prevent diseases or pregnancy (Utomo et al., 2012). Sixty percent out of 245 million Indonesian populations are in reproductive age. According to United Nations Fund for Population Activities (UNFPA), the number of Indonesian women within the reproductive ages of 15 to 34 years old will continue to increase slowly for the next 20 years. Unless the fertility rates decline, Indonesia population is expected to grow due to the increase in the annual number of births. In addition, the working-age population of more mature age – those aged 30-64 – will also increase rapidly, as a result of higher fertility rates at the time when they were born.

In the next two decades, Kepulauan Riau province will be populated with a large number of reproductive age population due to fertility and migration patterns (Jones, 2010). Batam, the largest city in Kepulauan Riau province, contains a majority of the province's population. Currently, this city has the highest number of reproductive age with 702,975 people or 55.9% from total reproductive age in the whole province population. Kepulauan Riau province comprises of 48.7 % men and 51.2 % women (Dinas Kependudukan Provinsi Kepulauan Riau, 2012).

Hypertension is a leading cause of mortality and morbidity in reproductive age. In Indonesia, the prevalence of hypertension among reproductive age women are 25.8% (Badan Penelitian dan Pengembangan Kesehatan, 2013). Among women in this group, hypertensions are related to increased risk during their pregnancies and causing manifestations of the most common medical complication of pregnancy. As such, a large part of antenatal care is devoted to the disclosure of pre-eclampsia, the most dangerous hypertensive disorders (Magee et al., 2015). Furthermore, gestational hypertension is also associated with increased risks of coronary heart disease and stroke (Canoy et al., 2016). Women with hypertensive disorders had significantly higher rates of cesarean delivery and maternal morbidities (Gibson, Waters, & Bailit, 2016). The frequency of hypertensive complications was found to be different by the weeks of pregnancy. Recently, Gibson et al. (2016) reviewed on hypertensive complication by the months as follows: 9.2% in the 37th week, 6.4% in the 38th week, 4.7% in the 39th week, and 3.9% in the 40th week. Therefore, pregnancy for women in hypertensive ought to be planned appropriately to decrease the probability of unintended pregnancy and the risk that follows (Darroch & Singh, 2013).

Proportion of hypertension among diabetes population is 51.8% in Indonesia (Sihombing, 2017). Previously, Arshad et al. (2015) conducted an investigation among Indonesian diabetes patients above 30 years of age. Results of this study

revealed that 68.0% of the diabetes patients were women (Arshad et al., 2015). Another study on hypertension was conducted, covering 13 provinces in Indonesia. In total, 42.7% of men had hypertension, while the figure was slightly higher for women, at 48.9% (Sohn, 2016). These findings were consistent with national survey conducted in 2014 by the Ministry of Health of Indonesia. Similar trends had been observed in this survey where women (7.0%) were more prevalent to having chronic diseases as compared to men (5.0%). Furthermore, stated in the same report, hypertension during pregnancy was claimed as the most common cause of maternal mortality in Indonesia (Kementrian Kesehatan Indonesia, 2014).

International Diabetes Federation reported that diabetes is the ninth leading cause of death. Over 300 million people worldwide have diabetes and approximately half of these are women. Globally, 2.1 million women died each year because of diabetes and majority of them was in the productive age group between 40 and 60 years (Alliance, 2011). Furthermore, in a report on global deaths from NCDs, 55% of diabetes deaths occur in women (World Health Organization, 2011). In Asians, mortality in women with diabetes stands second highest (Bajaj et al., 2013). Not only it is the third main cause of total death in Indonesia, diabetes mellitus is also an important issue contributing to adverse pregnancy outcomes. Health Research and Development Agency of Indonesia reported that the proportion of diabetes among reproductive age were 6.9% (Badan Penelitian dan Pengembangan Kesehatan, 2013). Diabetes in pregnancy is considered a high-risk condition for both mother and baby. Among women with diabetes during pregnancy, they face a higher risk of preterm delivery, Large Gestational Age (LAG) and perinatal mortality compared to women without chronic disease (Brudenell & Beard, 2015). A cross sectional study about maternal and fetal outcome in women with Type 2 versus Type 1 diabetes mellitus showed that women with Type 2 diabetes had a significantly higher risk of perinatal mortality (Brudenell et al., 2015).

In a study performed among reproductive age women with chronic condition between 18 to 29 years, it was observed that merely 49.6% were aware of the adverse effects of diabetes and hypertension on pregnancy (Nelson & Rezvan, 2012). In another similar investigation, it was reported that woman cannot give informed consent for contraceptive methods without knowing its benefits; including the health risk adverted by pregnancy prevention. Moreover, in the case where women are not adequately informed on the knowledge of contraception, they might view it negatively. When women have negative perception on the need to preclude inadvertent pregnancy, they may not be adequately motivated to plan and prepare for their pregnancy. Their ignorance on birth control may affect their contraception selection and utilization (Callegari et al., 2014).

1.2 Problem Statement

The occurrence of parallel epidemiological transitions, demographic transition and technological transition in Indonesia has resulted in changes of disease patterns from infectious diseases to non-communicable diseases (NCDs). There is virtually no reliable information available at the moment on the contraceptive practice among women with chronic condition in Indonesia. It can be inferred that Indonesia has not addressed this problem as part of contraceptive trends for eligible women. Preventing unintended pregnancy for women at different stages of reproductive age is required in order to prevent adverse maternal and fetal outcomes (Afsana, 2011). Unplanned pregnancies may increase the possibility of adverse pregnancy outcome among women with chronic condition. In Indonesia, women who do not practice Long Acting Reversible Contraceptive Methods (LARCs) tend to get unintended pregnancy (Saptarini & Suparmi, 2016).

Common misconception and poor understanding on the side effects of modern contraceptives affects the women's attitude towards modern contraceptive. The stigma of modern contraceptive practice causes weight gain is one the most common misconception among women. This belief leads them to refuse practicing contraception. Moreover, it was reported 64.6% of hormonal acceptor claimed that they have gained weight after undergoing contraception treatment (Nur & Rahman, 2017). In fact, there is no significant relation between body weight gain and contraceptive practice. The occurrence of weight gain among contraceptive users could be attributed by other factors such as inactive lifestyles and unbalance diet (Ida Trisna, 2008).

A cross sectional study was conducted from neighboring country with similar socio economic and demographic country background to explain the risk during pregnancy among women with diabetes and hypertension disorder. About 70% of Malaysian women who had chronic medical conditions did not use modern contraceptive methods, in spite of being sexually active and not planning to conceive within a year (Manaf, Ismail, Latiff, 2012).

For women with diabetes, women preference and health status are the two main factors that determine the choice of contraception. This is largely due to the fact that we need to consider the suitability of hormonal contraceptive and their insulin intake (Brudenell & Beard, 2015). This is a huge concerns among patients about adding extra chemical or hormone to their body on top of the insulin or the medication for their diabetes mellitus (Shawe, Smith, & Stephenson, 2011). The research conducted by Schwarz et al. (2011) discovered that 52.2% of women with diabetes have not specifically documented receiving contraceptive counseling, prescriptions, or services. Hence, this has shown that they did not receive contraceptive advice in the past from any health professional that may lead to the ineffective use of contraceptive (Shawe et al., 2011).

Pregnant women is often being excluded in hypertension study since pregnancy may exert idiosyncratic influences on hypertension (Sohn, 2016). A study regarding contraceptive use among women with hypertension in Indonesia suggested that contraceptive pill consumption will affect level of hormones and this may increase blood pressure. These results indicated that hypertension occurs 2 to 3 times more often in oral contraceptive users compared to women who are not practicing contraception (Pangaribuan & Lolong, 2015).

For women with hypertension, effective family planning is crucial in order to reduce the risk to both the mother and the fetus. The planning must take into account the patient's glucose management and the safe contraceptive for women with hypertension (Meseret, 2015). To sum, the right decision in contraceptive use was a major factor to decrease the risk in pregnancy and to avoid the unintended pregnancy among women with diabetics and hypertension in their reproductive ages.

1.3 Significance of Study

Findings from this study will provide baseline data on family planning, specifically on the modern contraceptive use among women in reproductive age with chronic diseases. To best of our knowledge, there is no previous report in the literature on factors associated with the contraceptive use among women population in Batam. Therefore, the findings regarding these factors will shed new light on this issue. Next, the results obtained from this study will serve as an important platform from which to improve the health care services. Health care provider will be able to plan additional program in promoting about family planning for women with chronic condition. In a brief, these findings will give specific information and data regarding contraceptive practice among hypertension and diabetes women in government hospital of Batam to help them identifying the criteria of their patients based on contraceptive type and history of practice.

1.4 Research Question

1. What is the prevalence of modern contraceptive use among reproductive women with hypertension and diabetes in Batam?
2. What are the factors associated with modern contraceptive use among reproductive women with diabetes and hypertension in Batam?

1.5 Research Objective

1.5.1 General Objective

The general objectives are to determine the prevalence of modern contraceptive use and its associated factors among reproductive women with diabetes and hypertension in Batam.

1.5.2 Specific Objectives

1. The specific objectives are:
2. To measure the prevalence of modern contraceptive use among women with diabetes and hypertension of reproductive age group in a registered government hospital Batam.
3. To describe the socio-demography and socio-economics factors (age, education level, number of children, religion, number of children, working status and family income), attitude factors (communication between husband wife, discussion with health workers and household decision-making) and knowledge regarding contraception among reproductive women with diabetes and hypertension in Batam.
4. To determine the relationship between selected socio demographic and socio-economics factors (age, education level, number of currently living children, religion, family income, working status) with practice of modern contraception among respondents.
5. To determine relationship between knowledge of modern contraceptive use and the risk of pregnancy in chronic condition (diabetes and hypertension) with practice of modern contraceptive use among respondents
6. To determine the relationship between attitude factors with practice of modern contraceptive.
7. To determine the predictors of contraceptive practice among respondents.

1.6 Research Hypothesis

The research hypotheses are:

H1: there is significant association between socio-demographics and socio- economics factors (age, education level, number of children, religion, working status and family income) and practice of modern contraceptive among respondents.

H2: there is significant association between attitude factors (communication between husband, wife discussion with health workers and household decision-making) and practice of modern contraceptive among respondents..

H3: there is significant association between knowledge about modern contraception among hypertension and diabetes and practice of modern contraceptive among respondents.

H4: There are significant predictors for modern contraceptive practices among the respondents.

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