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THE AWARENESS OF THE RISK FOR URINARY INCONTINENCE AMONG PREGNANCY WOMEN IN HOSPITAL UNIVERSITI SAINS MALAYSIA (HUSM)

By

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LIST OF ABBREVIATIONS

UI	-	Urinary Incontinence
SUI	-	Stress urinary incontinence
UUI	-	Urge urinary incontinence
MUI	-	Mixed urinary incontinence
USM	-	Universiti Sains Malaysia
HUSM	-	Hospital Universiti Sains Malaysia
PPSK	-	Pusat Pengajian Sains Kesihatan
ICS	-	International Continence Society

ABSTRACT

Urinary incontinence (UI) is a major health problem among adult, especially for women. Even though Urinary incontinence had been established by worldwide long time ago, the problem is still less approach and lack of knowledge among the caregiver and the individuals experience UI especially among the pregnant women. The aim of this study is to determine awareness of the risk for UI among pregnancy women. Samples was taken by randomly sampling among pregnant women, being the first pregnancy and attending antenatal clinic in HUSM (n=100). A constructed questionnaire was used to collect data. The participants comprised of 84% younger adult (less than 30 years old) and the rest is 30 years old and above. The finding shows that the awareness related to risk for UI was less among pregnancy women. There was a significant association between educational level, family income, experiencing of UI, knowing the treatment, knowing about UI and had been asked by health professional with awareness of the risk for UI. The result also shows no significance association with age, gestational age and being employed. In conclusion, improvement to the practiced management of UI is till need to be done in order to increase awareness of this common health problem. So, the scope of health professional's responsibility need to be broad in giving health education to the public about the seriousness of the problem and it impact to individual's life.

KEYWORDS

Urinary Incontinence, Awareness, Pregnant women

ABSTRAK

Masalah terkencing merupakan masalah kesihatah utama dalam kalangan dewasa terutamanya bagi golongan wanita. Walaupun telah lama masalah terkencing telah dikenali oleh semua masyarakat dunia, pendedahan tentang masalah ini di Malaysia masih lagi kurang dan kurang pengetahuan tentang masalah terkencing dalam kalangan ahli profesional kesihatan dan juga individu yang mengalami masalah ini terutamanya dalam kalangan wanita mengandung. Tujuan kajian ini adalah untuk mengenalpasti tahap kesedaran terhadap risiko kepada masalah terkencing dalam kalangan wanita mengandung. Sampel diambil secara rawak dalam kalangan wanita yang mengandung kali pertama dan mendapat rawatan di klinik antenatal di HUSM (n=100). Satu borang soal selidik yang berstruktur diberikan kepada peserta untuk pengumpulan data. 84% peserta adalah terdiri daripada golongan awal dewasa dan selebihnya adalah golongan dewasa. Keputusan menunjukkan kesedaran tentang risiko kepada masalah terkencing adalah kurang dalam kalangan wanita mengandung. Terdapat hubugan signifikasi antara tahap pengajian, pendapatan keluarga, pernah mengalami masalah terkencing, tahu tentang rawatan yang ada, tahu tentang masalah terkencing dan pernah ditanya tentang masalah ini oleh ahli kesihatan. Keputusan juga menunjukkan tiada perkaitan yang signifikasi antara umur, usia kandungan dan pekerjaan. Kesimpulannya, penambahbaikan terhadap pengurusan masalah terkencing dari segi praktikal masih lagi diperlukan dalam usaha untuk meningkatkan kesedaran terhadap masalah kesihatan ini. Oleh itu, skop tanggungjawab ahli kesihatan perlu diperluas dalam memberi nasihat kesihatan kepada masyarakat tentang keseriusan maslah ini dan kesannya terhadap kehidupan individu tersebut.

KATA KUNCI:

Kesedaran, Masalah terkencing, Wanita mengandung

CERTIFICATE

This is to certify that the dissertation entitled "the awareness of the risk for Urinary incontinence among pregnancy women" in HUSM is the bonafide record of research work done by Miss Che Siti Nurzaily Binti Abdullah, 101461 under my supervision. This dissertation submitted in partial fulfillment for the degree of Bachelor of Health Science (Nursing). Research work and collection of data belong to Universiti Sains Malaysia.

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DEFINITION OF KEY TERMS

Terms		Definition
Urinary Incontinence	-	Involuntary loss of urine that is objectively demonstrable and is a social or hygienic problem, International Continence Society (ICS), (Abrams et al., 2002). The complaint of any involuntary leakage of urine (P Abrams, Cardozo, Khoury, & Wein, 2005).
Awareness	-	Knowing something; knowing something exist and is important; being interested in something (Hornby, 2001).
Risk	-	The possibility of something bad happening at some time in the future; a situation that could be dangerous or have a bad result (Hornby, 2001).
Pregnancy	-	The state of being pregnant (Hornby, 2001). The period during which a women carries a developing fetus, normally in the uterus. Pregnancy lasts for approximately 266 days, from conception until the baby is born, or 280 days from the first day of the last menstrual period (McFerran, 2004).
Stress urinary incontinence	-	The involuntary leakage of urine resulting from increased of abdominal pressure (O'Donnell, 1997).
Urge urinary incontinence	-	The complaint of involuntary leakage accompanied by or immediately preceded by urgency (P Abrams et al., 2005).
Mixed urinary incontinence	-	Involuntary urine leakage associated with symptoms of both stress and urge urinary incontinence (Schuiling & Likis, 2006).
Primigravida	-	A women experiencing her first pregnancy (McFerran, 2004).

CHAPTER 1: INTRODUCTION

1.1 Introduction

Urinary incontinence (IU) is defined as 'the complaint of any involuntary leakage of urine' (International Continence Society, cited in Abram et al., 2005). In other words, UI can be described as urinary leakage or involuntary loss of urine which can impair the life of those who experienced it. Urinary incontinence (UI) is a common health problem that affected an adult community especially in women population. There are many risk factors that can contribute to UI. However, some of the risk factor of UI for women of general population includes age, parity, body mass index, menopause, occupation and also pregnancy (Getliffe & Dolman, 2007).

Even it is not a chronic disease but it's largely affects individual daily life activities. Lose (2005) emphasized that UI has huge impact on patient's quality of life which often devastating and leads to social isolation for many patients (Lose, 2005).

It is reported that many people who had this problem usually isolate themselves from others. This is because of embarrassment related to it if other people know about the problem. According to Getliffe & Dolman (2007), UI impact strongly on how the sufferer feel about themselves, their choices of clothing and the way they interact with others at home, at work or in wider social setting. People with UI have been found to be more depressed, have high level of anxiety, feel more stigmatization and have poorer life satisfaction compared to people who are continent (Shaw, 2001). There was also a study on psychological impact of UI which

include distress, embarrassment, inconvenience, threat to self-esteem, loss of personal control and desire for normalization (Button, Roe, & Webb, 1998).

Although it is a common problem for women, it is however, preventable and treatable. There are various treatments options available for UI include surgical procedures, pharmacological interventions and conservative treatments. Surgical procedures include colposuspension, needle suspension, sling procedures and anterior colporrhaphy. Meanwhile, conservative treatments include physical therapy and behavioral modification (Townsend et al., 2009). Physical therapies include pelvic floor muscle (PFM) exercises, vaginal cones, bio- or myofeedback, and electrical stimulation (J Hay Smith, Berghmans, Burgio, Dumoulin, Hagen, Moore et al., 2009).

Urinary incontinence is always underreported because most people with this problem being hated and misconceptions that UI is a normal process of getting older and being a women. There are many reasons why people do not seek treatment for UI. One of the study found that UI is not viewed as a legitimate medical condition but rather a normal part of the ageing process (Shaw, 2001). It is also viewed as the individual's own fault, perhaps through being a woman and giving birth (Ashworth & Hagan, 1993). The other reason is stigma that attached feeling of being urinary incontinence. Thus, they tend to keep it silence and used several strategies to cope with it. Some of the strategies include wearing pads or panty liner, restricting fluid intake, avoiding social activities, making frequent toilet visits and limiting physical exercise(Lose, 2005; M. O'Donnell, Lose, & Sykes, 2005).

Even though research on UI has been established long time ago particularly in the western countries, there are still a concern that numbers of people with UI do

not seek help. In Malaysia, the development of continence care is still under developed. There are still lack of information and data available on UI generally. Even though Malaysia is one of the countries that have a good health care system for its population with advanced health technology, a proper management practice of UI care however, could not be found in most areas, particularly for women who are at risk for UI.

1.2 Background of the Study

So far, the researcher only managed to find some literatures on studies of UI that conducted in Malaysia. Most of these studies have been carried out on women in general population. For example, according to Malaysian Urological Association (MUA), there are up to 30% of Malaysian women had experienced UI recently ("The Malaysian Urological Association," 2006). There also a study done by Zarina et al. (2005) on three hundred and twenty nine adult women attending Family Medicine clinic in HUSM and found unexpectedly high prevalence of UI among participants (40.4%) (Zarina, Juwita, & Nor, 2005). Meanwhile the study specific about UI on pregnant women was scarce. Only a few studies found to be related to pregnant women (Hvidman, Foldspang, Mommsen, & Nielsen, 2002). However, these studies did not focus on women's awareness towards UI and thus supports the researcher's previous excerption about the lack of information on UI available in Malaysia especially in Kelantan. A study by Dariah et al. (2011) also supported this that less attention given to UI compared to other chronic diseases (Dariah, 2011). Due to lack of information and attention pay to this problem, people tend to perceive UI as not a health problem but a natural process. However, it is proven that those who are affected by UI had experienced numerous difficulties in almost every aspects of their

life due to UI as mentioned earlier. Therefore, awareness of UI seems to be very important for women who are at risk to have it, particularly pregnant women. Pregnancy is found to be one of the risk factor for UI and untreated UI during pregnancy can lead to postnatal UI. Adequate information for women about UI therefore is crucial, not only to treat UI but also to prevent and treat it at earlier stage.

1.3 Rationale of the Study

Previous studies on UI commonly focused on prevalence, risk factors and quality of life (QoL). However, the current study that looks into awareness of UI among pregnant women are lacking. Awareness is an important behavior to determine how concern of an individual towards his/her condition. Therefore, it is important to evaluate awareness of UI to inform service development and provide a baseline of which to measure progress of the problem (Getliffe K &Dolman M, 2007)

1.4 Problem Statement

Due to the lack of health information and proper management related to UI available for the public, many people do not aware of this health problem. Thus, most of the sufferer's tend to keep the problem silence and do not seek help for UI. Most commonly, treatment is sought when the problem getting worse. According to Newman (1999), a woman waited for three and half years before seeking help and most of them view unwanted leakage of urine as part of being female and this just another nuisance to deal with.

This behavior is closely related to one's attitude and perceptions of being incontinence. Based on the Health Belief Model, a person will only seek help when

he/she perceived potential that they are going to have a serious health condition and is susceptible to have it (Nutbeam & Harris, 1999).

1.5 Purpose of the Study

This study is carried out to evaluate pregnant women's awareness of the risk for UI during pregnancy.

1.6 Aims of the Study

1.6.1 General Objective

To determined pregnant women's awareness of the risk for UI.

1.6.2 Specific Objectives

1. To assess pregnant women's knowledge about UI

2. To explore factors influences pregnant women's awareness levels on the risk of UI

3. To determine strategies taken by pregnant women to cope with UI during pregnancy

4. To explore pregnant women's treatment seeking behavior

1.7 Research Questions

1. Are pregnant women understood about UI?

2. Do they aware that they are at risk for UI during pregnancy?

3. What are factors influences pregnant women's awareness level of the risk for UI?

4. What are the strategies used by pregnant women to cope with UI during pregnancy?

1.8 Research Hypothesis

Ho I: There is no significant association between sociodemographic factors with the level of pregnant women's awareness of UI

Ha I: There is a significant association between sociodemographic factor with the awareness of UI among pregnant women

1.9 Justification for, and Significance of the Study

This study intends to disclose the importance of increasing awareness of the risk for UI during pregnancy among pregnant women and in later life. About half of pregnant women for the first time had experienced urinary symptoms, and mostly during the last trimester (D. K. Newman, 1999). Accordingly, this problem will persist after childbirth if it is left untreated during pregnancy (D. K. Newman, 1999). However, if this problem is prevented or treated at earlier stage, it may reduce the risk for UI or chronic UI

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter will review previous literature related to urinary incontinence (UI) that focuses on pregnant women. As literatures of UI in pregnant women are limited, studies on UI among women in general population was included in this study. Review of literature in this chapter covers the prevalence, the types of UI that mostly affects women, risk factors and the impact of UI. Besides that, issues on the treatment, awareness of UI and treatment seeking behavior for UI are also discussed.

2.2 Etiology of UI during pregnancy

Urinary incontinence is commonly experience by most pregnant women and it worsening as pregnancy advances. This is supported by Brummen et al. (2006) that the number of women with UI increased with gestational age (Brummen, Bruinse, Bom, Heintz, & Vaart, 2006). The underlying etiology for pregnancy inducing UI is not completely understood. It is believed that the detrusor instability resulting from changes in hormone levels (Wijma, Potters, Wolf, Tinga, & Aarnoudse, 2001) or autonomic denervation (Viktrup, Rortveit, & Lose, 2006) may play a role. It also may due to anatomical changes due to the growing uterus and the engagement of the fetal head in the pelvis (Wijma et al., 2001). Furthermore, Wijma et al. (2001) suggested that reduced fascial strength and subsequent weakness of the pelvic support might also contribute to UI. While Mikhail & Anyaengbunam (1995) relates this occurrence to the changes in the anatomical during pregnancy include enlargement of the uterus with increased pressure on the bladder and alterations in renal, bladder and urethral function (Mikhail & Anyaengbunam, 1995).

2.3 The prevalence of UI during pregnancy

In general population, a prevalence study by Hunskaar (1999) was conducted comparing UI in women between four countries: Asia, Japan, Europe and USA. The study reported that in Asia, the percentage of UI is about 14.6% while in Japan, Europe and USA the rate were 32%, 26% and 37% respectively (Hunskaar, 1999). A further breakdown of prevalence rates in Asia according to the Asian Society for Female Urology indicated that there were about 6% women with UI in Malaysia (Getliffe & Dolman, 2007).

According to Burgio et al. (1996), it is reported that about 59.5% of 523 women participate in this study found to have UI during pregnancy. Later on, a Norwegian study by Wesnes et al. (2007) indicated that 58.1% women participate in this study found to have UI during pregnancy. On top of that, the prevalence of any UI is doubled in pregnant women compared to before the pregnancy (Wesnes, Rortveit, Bo, & Hunskaar, 2007). In a study by Wesnes et al. (2007) shows an increasing prevalence of UI before pregnancy by 26% to 58% in week 30 of pregnancy. Besides that, in terms of its occurrence, almost equal rate of UI was reported before and after delivery (26.3% versus 28.5%) (Lose, 2005) and more women being incontinent and becomes continent approximately in every second (Huebner, Antolic, & Tunn, 2010).

In Netherlands a study on pregnant women indicated that the number of women reporting UI increased significantly from 16% at 12 to 16 weeks, to 30% at 28 to 30 weeks and to 35% at 36 to 38 weeks (Wijma et al., 2001). This study shows a lower percentage of UI compared to earlier study by Burgio et al. (1996) which shows that the onset of UI in the first trimester was 6.8%, 34.7% in the second trimester and 58.5% in the third trimester (Burgio, Locher, Zyczynski, Hardin, &

Singh, 1996). With regards to severity, UI during pregnancy was reported worsened in 44.6% women, stayed the same in 42.2% and improved in only 13.2% in a study by (Burgio et al., 1996).

Furthermore, Hvidman et al. (2002) reported that the period prevalence of UI during pregnancy was found to be 24.1% among primiparous women and the first episode ever experienced by 16.7% during the two last trimester of the first pregnancy. While in other study, 16% of 1232 primiparae were reported having UI during pregnancy (Foldspang, Hvidman, Mommsen, & Nielsen, 2004). Moreover, a study done by Thomason et al. (2007) reported that sixteen percent of 80 primiparous leaked during pregnancy and out of this number 70% of them experienced frequent leakage during pregnancy (Thomason, Miller, & DeLancey, 2007).

2.4 Types of UI

There are several types of UI that commonly affects women in general, which are stress urinary incontinence (SUI), urge urinary incontinence (UUI) and mixed urinary incontinence (MUI). Of these three, the most common type in younger women is SUI (Lose, 2005). Clinically, SUI is refers to "the involuntary leakage of urine resulting from increased of abdominal pressure" (O'Donnell, 1997). Besides that, the ICS has define SUI at three levels: as a symptom, a sign and a condition (P Abrams et al., 2005). For symptom, SUI is the complaint of involuntary leakage of urine on effort or exertion, or on sneezing/coughing. In terms of sign, SUI is the observation of involuntary leakage from the urethra, synchronous with exertion/ effort, or sneezing/coughing. While for condition, SUI is the involuntary leakage of

urine during an increased in abdominal pressure, in the absence of a detrusor contraction (P Abrams et al., 2005).

Stress urinary incontinence also is the most common type of UI in pregnancy (Adaji, Shittu, Bature, Nasir, & Olatunji, 2010; Wesnes et al., 2007). It often appears during the first pregnancy (Arrue, Ibanez, Paredes, Murgiondo, Belar, Sarasqueta et al., 2010). A study conducted in Norway indicated that the prevalence of SUI 12 years after first pregnancy and delivery was significantly higher in women with onset during the first pregnancy (Viktrup et al., 2006). The other study done by Hvidman et al. (2002) found that 16.7% of 352 pregnant women experienced their first symptom of SUI during the two last trimesters of their first pregnancy (Hvidman et al., 2002).

Urge urinary incontinence (UUI) is the complaint of involuntary leakage accompanied by or immediately preceded by urgency (P Abrams et al., 2005). It can be associated with losses of small urine between normal micturition or large volume losses with complete bladder emptying (Hacker, Gambone, & Hobel, 2010). It is also refers as involuntary urine loss that is preceded by a strong and sudden desire to void (O'Donnell, 1997). Urge UI also defines as a strong desire to urinate that is difficult to postpone (Schuiling & Likis, 2006)

Mixed urinary incontinence (MUI) is present when a woman has symptoms of both SUI and UUI (O'Donnell, 1997; Schuiling & Likis, 2006). According to Schuiling & Likis (2006), MUI is an "involuntary urine leakage associated with symptoms of both stress and urge urinary incontinence" (Schuiling & Likis, 2006). It is often a complex bladder and urethral dysfunctions that results in loss of voluntary bladder control (O'Donnell, 1997).

With regard to age, SUI occurs mainly in younger and middle-aged women and peaks around the fifth decade, while it become less common in older women. In contrast, MUI becomes more common in older women (Lose, 2005). In a Malaysian study by Law et al. (2007), it was reported that 63.7% of the participant had SUI while 72.5% had UUI. While in Malaysia, a study was conducted to determine the prevalence of UI among Kelantanese women in HUSM. This study recruited 91 women in HUSM using self-administered questionnaire. The result indicated that 30% of the women described had strong and sudden desire to urinate during the day (Law, Soon, & Bakar, 2007).

2.5 Risk factors for UI during pregnancy

There are several risk factors of UI during pregnancy reported in the literature. This includes hormonal and mechanical changes, UI before pregnancy, obesity, maternal age and parity (Paul Abrams, Cardozo, Khoury, & Wein, 2002).

2.5.1 Hormonal changes

Hormonal and mechanical changes during pregnancy are known to become an important risk factor for UI in pregnant women. Hormonal effects were including effects of the reproductive hormone relaxin, increased hormonal concentrations, and local tissue changes caused by hormones which may affect the continence mechanism during pregnancy. Mechanism during pregnancy was also influenced by variability in strength and thickness of pelvic floor muscle function in pregnant incontinent women (Thomason et al., 2007). If the strength and thickness of pelvic floor muscle is good enough during pregnancy, the occurrence of UI maybe can be avoided.

2.5.2 Multiparity

Other risk factor is multiparity. According to Adaji et al. (2010), primigravid women had the lowest prevalence of UI, while the prevalence increased with increasing parity (Adaji et al., 2010). Ironically, according to Viktrup et al. (2006), the first pregnancy and delivery was found to be associated with the risk of UI (Viktrup et al., 2006). This is because as increasing in parity, weakness of the anatomical structure of pelvic floor because of muscle trauma due to repetitive pregnancy and delivery that leads to the UI problem.

2.5.3 Socio-demographic factors

Several studies indicated demographic is associated to the incident of UI includes age, occupation, gestational age, educational level, and more. For example in a study by Burgio et al. (1996), they found that age, education, income and attendance at childbirth classes, were strongly associated to UI (Burgio et al., 1996). In another study, BMI showed an association with pregnancy UI (Hvidman et al., 2002). However, there is also a study indicating no association BMI with pregnancy UI (Chiarelli & Campbell, 1997).

2.5.4 Socio-economic factors

Socioeconomic gradient may also influence the prevalence estimates of UI. This is because women in lower socioeconomic group were more likely underrepresented due to the response rate about 45% of targeted sample (Wesnes et al., 2007) . According to Wesnes et al. (2007), risk factor such as age, BMI and parity may distribute differently in low-income pregnant women (Wesnes et al., 2007).

2.5.5 Urinary Incontinence before pregnancy

Having UI before pregnancy is also a significant risk factor for UI during pregnancy (Wesnes et al., 2007). In women who start experienced symptoms of UI during pregnancy, their own body size and the weight of the baby were the significant risk factors rather than maternal age (Glazener, Herbison, MacArthur, Lancashire, McGee, Grant et al., 2006). However, other study mentioned that overweight before first pregnancy was the only cofounder for the risk of any SUI (Viktrup et al., 2006). In addition, a study done by Brown et al. (2009) indicated that higher pre-pregnant maternal BMI and maternal age were two factors associated with new UI in pregnancy (Brown, Donath, MacArthur, McDonald, & Krastev, 2009).

Obviously, risk factors of UI between studies are differs. This might be due to discrepancies in definition of UI, the population background and methods used. Although there were only a few studies available to be use on reference for this study, the researcher had to keep in mind to use the right definition and clearly explained the method used to carry out this study as explained on Chapter 3.

2.6 The impact of UI

It has been reported in many studies that UI has considerable impact on the sufferer's life physically, emotionally, socially and financially (Lose, 2005).The experience of being incontinence is unique to each women (William, Assassa, & Smith, 2002). Many incontinent women feel highly ashamed, being embarrassed and refrain from social activities. Severely incontinent women were 80% more likely to suffer a depression while women with mild to moderate incontinence had a 40% greater risk for depression than continent women (Lose, 2005). As many as 38% of middle aged and 28% of older incontinent women claimed to avoid sporting

activities because of UI. Many women with UI also reported a negative effect on their self-perception, confidence and personality (Lose, 2005). As it poses considerable impact to women's life, awareness of UI among the public especially women is crucial.

2.7 Treatment of UI

The treatment of UI also had been mentioned in previous chapter. However, here more emphasize on common treatment that always used by those who had UI. Pelvic floor muscle training or also known as Kegel exercises are frequently recommended to help improve urinary function. They involve exercising the pubococcygeal muscles in order to gain greater muscular control in order to exert a stronger closing force over the urethra (Duthie et al., 2007). Meanwhile, Biofeedback involves the use of vaginal monitoring instruments to detect physiologic events then translated electronically into visual or auditory signals. These visual and auditory representations help patients develop conditioned responses. A meta-analysis of 10 trials involving women with UI found no significant difference in leakage rates for biofeedback-assisted pelvic floor muscle training (PFMT) versus PFMT alone (J Hay Smith, Berghmans, Hendriks, Bie, & Doorn, 2001). Besides that bladder retraining was also being used as a sole therapy for UI. This revealed that UI is actually can be cured if it can be detected and treated earlier and that may worsen if left untreated.

2.8 Awareness of UI

Although UI is acknowledged as a common health problem among women and that pregnant women are at higher risk for UI due to several factors but very little effort being made to distinguish women's awareness about UI. Besides that, very

little information about UI is available for women to help increase their awareness (Saleh et al., 2005). However, the researcher found difficulties to find studies on pregnant women that mainly assess the awareness of UI.

Awareness of UI can be revealed through women's treatment seeking behavior (Getliffe & Dolman, 2007). Those who seek treatment are believed to have some awareness about the health problem. Saleh et al. (2005) reported that many of the cases was underreported due to lack of information of UI (Saleh, Bener, Khenyab, Al-Mansori, & Muraikhi, 2005). In their study among Qatari women, 43.5% had not heard of UI. This indicates that routine medical assessment among 56.5% women by their physicians, whether family practitioners or specialists, did not include an inquiry about UI (Saleh et al., 2005).

A study has proved that awareness of the problem encouraged women to share their problem with health professional (Lepire & Hatem, 2007). This would help an early detection of UI and thus, help prevent UI in later life. In turn, lack of awareness may cause women to keep the problem silence. They would only seek help when the problems worsen whereby conservative therapy such as pelvic floor muscle exercise is no longer effective to treat the problem.

There was a study conducted in Turkey to determine awareness level of UI among women in general population. A total of 229 women over 20 years old who attended gynecology outpatient clinics in Turkey participated in this study. They found that 37.11% of the participants had UI symptoms. Participant also indicated that they did not feel UI as a health problem (56.5%) , had never admitted to health institution for UI (80.0%) and had never got any necessary treatment for UI (85.9%)

although they lived with the symptoms for 13 to 96 months (Kok, Senel, & Akyuz, 2006).

An awareness study of UI was also carried out in Japan among women aged between 41- 67 years old (Ushiroyama, Ikeda, & Ueki, 1999). Of 26.3% participants with UI, only 7% consulted a doctor for treatment. They concluded that it is important to improve women's awareness of UI as well as the benefits of seeking treatment for UI (Ushiroyama et al., 1999).

2.9 Treatment seeking behavior for UI

According to Lose (2005), low consultation rate for UI was the common finding for not seeking treatment for UI in most epidemiological studies (Lose, 2005). Among those who developed UI during pregnancy, only 30.3% mentioned it to their doctor (Burgio et al., 1996). Accordingly, non-seekers often do not consider UI as a medical problem, but rather as a nuisance to be dealt with on their own (Lose, 2005). The most common reasons for this behavior was that the women thought UI is normal (95.5%), they were not bothered by it (80.6%), they thought it could not be helped (71.6%), embarrassment (4.5%) or fear of telling the doctor (4.0%) (Burgio et al., 1996). Meanwhile, the other important reason for not seeking help is that the patient does not know where to seek help, or they were unaware of treatment options available for them (Lose, 2005; Mutema, 2009). Therefore, it is crucial to make every woman aware of the fact that becoming incontinent during pregnancy is not a normal condition and that it is by no means they should not feel shameful to talk about it and set check up at the nearest clinic (Lose, 2005).

2.10 Theoretical Framework

In order to understand how knowledge on certain health problem affects individual's awareness, the researcher decided to apply the Health Believes Model to help explain this relationship as in Figure 2.8. This model was proposed by Rosenstock (1974), which was then modified by Becker (1974), with the same elements of motivational theory (Kozier, Erb, Berman, & Snyder, 2008). This model suggests that an individual will only take an action to promote health once they believed they are susceptible to have the problem or exposed to a serious consequences. At this level, they believe that action taken will reduce or minimize the consequences (Nutbeam & Harris, 1999).

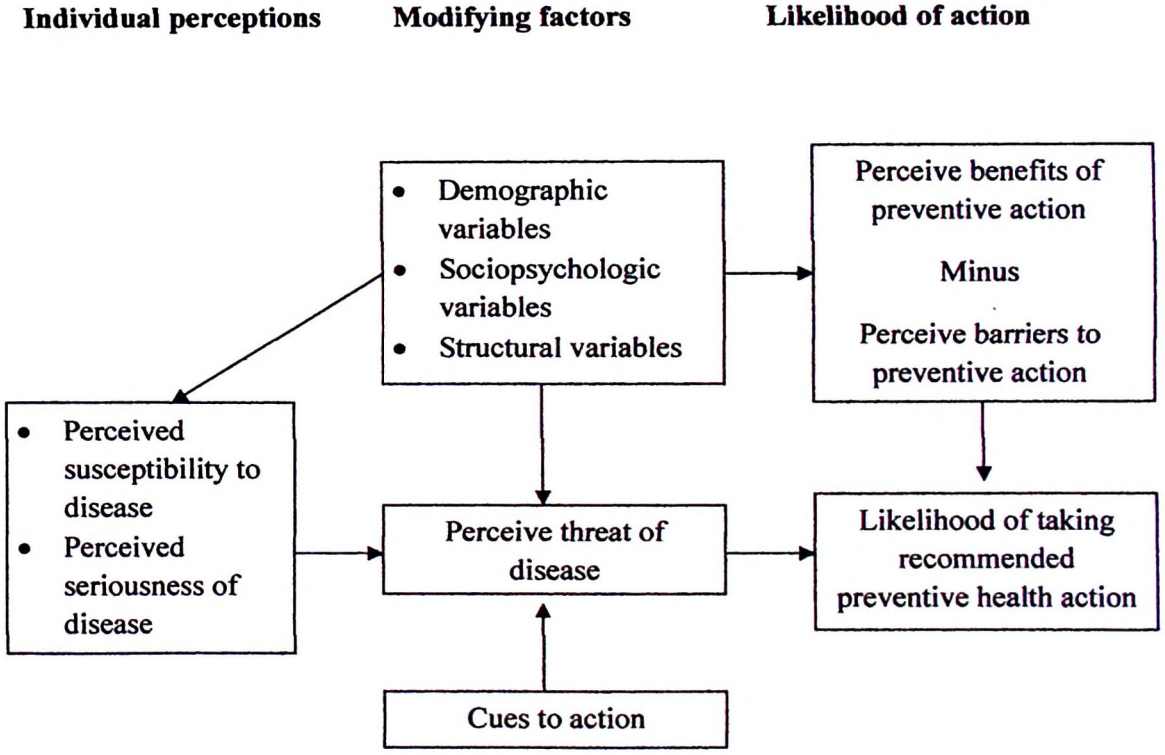

Figure 2.8: The Health Believes Model (Adapted from (Kozier et al., 2008)

This theory has three components: Individual perceptions, Modifying factors and Likelihood of action. In individual perceptions, it includes perceive susceptibility to disease and perceive seriousness of the disease. The perceive susceptibility is an individual's assessment of his/her chances of getting the disease while the perceive seriousness is an individual's judgment as to the severity of the disease. When the perceiveness of susceptibility occurred, the individual realized that they are at risk to get UI. The perceiveness of seriousness on the other hand, is signified by limitation of activities and embarrassment because of UI which may lead to lower confidence level and self-esteem as well as social isolation.

Modifying variables is an individual's personal factors that affect whether the new behavior is adopted. Modifying factors includes demographic, sociopsychological, and structural variables and perceived threat of disease and cues to action. The cue to action is the factors that will inspires a person to change behavior. Demographic variables such as age, gestational age, parity, race, and occupation were previously proven to be related to UI during pregnancy (Burgio et al., 1996). Based on my understanding, this can be explained for example, Madam A is pregnant for the first child. When reading the magazine, she noted that pregnancy also can contribute to UI occurrence. As she perceives susceptibility to the UI, she tends to take action to prevent UI such as practice in pelvic floor muscle exercise.

In likelihood of action, it includes perceive benefits of preventative action and perceive barriers to preventive action. The perceived benefit is an individual's conclusion as to whether the new behavior is better than what she is already doing while the perceived barrier is an individual's opinion as to what will stop her from adopting the new behavior. In perceived benefits of preventive action, in order to minimize the risk for UI during pregnancy, a person may control the causes of UI.

For examples their body mass index, their toileting behavior, bladder training, practice on pelvic floor exercise and more. In perceived barriers to preventive action, a person may try to improve their knowledge and health seeking behavior in order to treat or reduce the severity of problem.

CHAPTER 3: METHODOLOGY & METHODS

3.1 Introduction

This chapter explains how this study is conducted. It covers the study design and the rationale for utilizing it. An explanation about the population setting, characteristic of population, instrumentation used with their structure, ethical issue, data collection and analysis methods will also be included in this chapter. All these are important for the researcher to appropriately guide in conducting the study as well as to ensure the study is on the right tract.

3.2 Research Design

This study was a cross-sectional and descriptive study in nature. Cross-sectional design was relatively quick to carry out as participants needs to respond to the questionnaire only once. The cross sectional study was also based on current situation and the result from this type of research design can be generalized to the population. The cross sectional studies were carried out over a short term period and suitable to be used in limited time period to conduct a research study. While descriptive is to describe the data and characteristics about the study. This also concerned with the participants were being studied with the study setting which was completely natural and carried out in the present. Accordingly, this study also described participant's behavior without influencing it.

3.3 Population and Setting

Participants of this study were among pregnant women who are primigravid and attended the Antenatal clinic in Hospital Universiti Sains Malaysia (HUSM), Kubang Kerian, Kelantan. Based on the researcher's observation, the selection of this

setting was made concerning the number of pregnant women who came for antenatal check-up which were adequate for this study sample size.

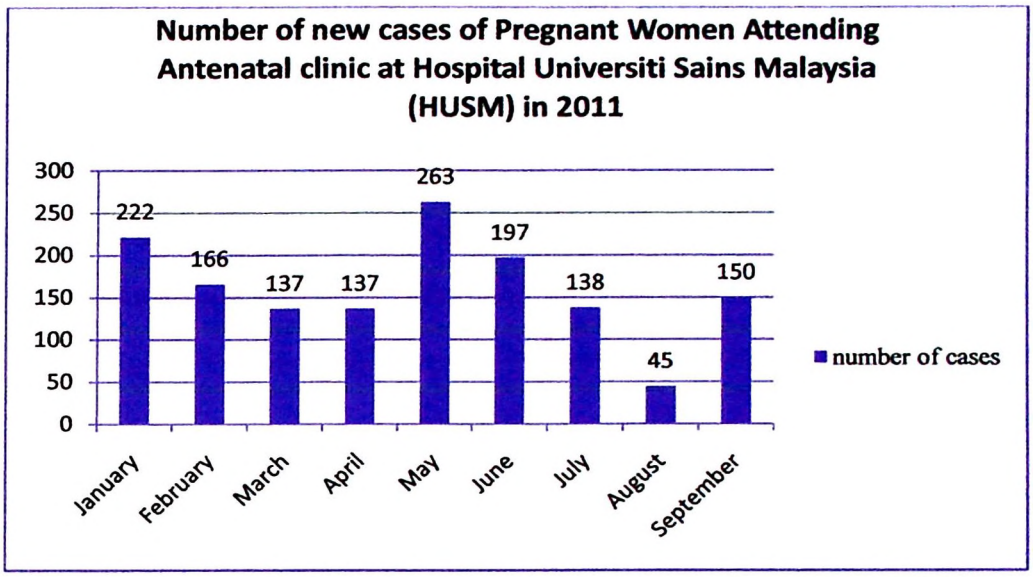

Figure 3.1: Number of new cases Pregnant Women Attend Antenatal clinic at Hospital Universiti Sains Malaysia (HUSM) in 2011. (Unit Rekod HUSM, 2011)

Figure 3.3 shows the number of pregnant women attending antenatal clinic for new booking at HUSM from January until September 2011. The trend of patient attending antenatal clinic was vary for each month. The highest number of attendance was recorded in May with 263 new cases. Meanwhile the lowest case was in August with only 45 new cases. However, the researcher found difficulty to differentiate cases by parity using the available documentation. Due to the incomplete information documented in the check-up form, the new cases attended were presumed as primigravid and was included in the study.

3.4 Sample

3.4.1 Sample Size

Sample size is calculated using online sampling size formula by Raosoft, Inc ("Raosoft: sample size calculator," 2004). This formula was used for this study because it is easy, consumed less time and convenience to researcher. Sample size is determined at margin error 5%, 95% confident level, and 50% response distribution. The calculation was also taken into consideration the population size from the mean of new case of pregnant women attending antenatal clinic from January until September 2011 which was about 162 per month. To overcome the risk of drop out and incomplete data, about 10% of participant were included. Therefore, sample size for this study was calculated

The margin error: 5%

Confidence level: 95%

Population size: 162 (mean of new case pregnant women who attending antenatal clinic at HUSM from January until September 2011)

Response distribution: 50%

Recommended sample size: 115

Considering the ±10% dropout from the participants, the sample size is calculated to be between 103 to 127 participants.

3.4.2 Sampling Method

Applied simple random sampling will be used for this study only on pregnant women who attending antenatal clinic at HUSM that met the inclusion criteria.

The inclusion criteria for participant of this study are:

1. pregnant women with first pregnancy (primigravid)
2. able to read and understand Malay language
3. agreed to participate in this study
4. attending antenatal clinic in HUSM

While the exclusion criteria are:

1. woman who is pregnant for second time and more
2. disagree to participate in this study

3.5 Instrumentation

3.5.1 Instrument

Instrument used in this study is a self-administered questionnaire that consists of three sections. The first section is Section A that gathers pregnant women's demographic data. This is followed by Section B which assessed pregnant women's knowledge of UI that was later on used to measure their awareness level of UI. Finally is Section C, which was self generated questionnaire used to identify the status of UI and strategies used by women to deal with UI.

Questions in Section B was a combination of several validated questionnaire that is purposefully modified by the researcher to suit the objective of this study (Hermansen, O'Connell, & Gaskin, 2010); the Gunn Tow Bin Centre and Vital & health Statistics from the National Health Interview Survey in US (1985); the Behavioral Risk Factor Surveillance (2002). Altogether, there were 20 questions in this questionnaire.

A. Demographic data: six questions
B. Awareness of UI: twelve questions to measure knowledge of UI through three points Likert-scale.
C. Urinary incontinence status and treatment practice. There are 14 questions altogether for this section. (refer to appendix 3, page 63)

3.5.2 Measurement of Variables

The dependent variable for this study was awareness of UI. Meanwhile, the independent variable is the demographical data and current UI status with treatment seeking treatment.

Variables	**Instrument**	**Measurement variables**
Awareness of UI	Level of awareness on UI: Twelve questions are on knowledge of UI based on three points Likert-scale ranging from "yes", "no" and "not sure". The questions covered on	The knowledge level was determined through how much participants answered the questions correctly. The score is