INTENTION OF MIDWIVES REGARDING USE OF BASIC ANC PRACTICE GUIDELINES IN PALEMBANG, INDONESIA

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ABSTRACT

A cross-sectional descriptive study was conducted to identify the intention of midwives regarding use of basic ANC practice guidelines in Palembang district of Indonesia. Data of 144 midwives were collected from selected community health centers and 2 public hospitals during January and February 2011. Data were collected by self-administered questionnaire. Chi-square test, correlation analysis and multiple logistic regressions were used to identify factors (socio-demographic, attitudes, subjective norms, and perceived behavior control) related to the intention of midwives.

Fifty-two percent of the midwives were between 40 and 59 years old and 70% worked in maternity divisions for less than 17 years. With regard to academic education levels, 65% of the respondents had had 3 years of midwifery academics. For in-service training experiences, 58% did not have training about antenatal care.

Most midwives (58.3%) had high intention and 41.7% had low intention regarding use of basic ANC practice guidelines. Age and years of working had a statistically significant association with midwives' intention regarding use of basic ANC practice guidelines. Older midwives were 2 times more likely to have high intention compared to younger ones. Midwives who worked more than 17 years were 3 times more likely to have high intention compared to those who worked less than 17 years. There were statistical significances between attitudes, subjective norms, and midwives' intention. Midwives having positive attitudes were 3.7 times more likely to have high intention compared to those having negative attitudes. Also, midwives who had high subjective norms were 3 times more likely to have high intention compared to those with low subjective norms. Perceived behavior control had a minimal influence on midwives' intention. The new and younger staff should be trained to promote positive attitudes towards the use of basic ANC practice guidelines which enable midwives to detect early complications with pregnancy.

KEY WORDS : INTENTION OF MIDWIVES / BASIC ANC PRACTICE GUIDELINES / THEORY OF PLANNED BEHAVIOR

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LIST OF ABBREVIATIONS

ANC	Ante Natal Care
MPSP	Making Pregnancy Safer Program
MMR	Maternal Mortality Rate
GDM	Gestational Diabetes Mellitus
ECV	External Cephalic Version
SFH	Symphyseal Fundal Height
BV	Bacterial Vaginosis
FGR	Fetal Growth Restriction
IOL	Induction of Labour
MDG	Millennium Development Goal
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
PTC	Provincial Training Center
DTC	District Training Center
WHO	World Health Organization
TPB	Theory of Planned Behavior
NPs	Nurse Practitioners
CNMs	Certified Nurse Midwives
SN	Subjective Norms
PBC	Perceived Behavior Control

CHAPTER I
INTRODUCTION

1.1 Rationale and Justification

Every minute a mother dies somewhere in the world because of complications during pregnancy and childbirth. In other words, 1400 mothers die every day, or more than 500,000 mothers die every year in pregnancy and childbirth(1). In 2007, the maternal mortality ratio in Indonesia was 228 per 100,000 live births and still continues to be high. This makes Indonesia have the highest maternal mortality rate in South East Asia(2).

The Indonesian government has introduced many programs to reduce maternal mortality and morbidity rates. These include the Alert Village program, Making Pregnancy Safer program (MPSP) (3) and the10 step basic standards of Ante Natal Care (ANC) as an ANC practice guideline for midwives (4). There are many factors related to the success of particular programs such as the availability of equipment, drugs and adequate facilities; the availability of sufficient qualified midwives; the training and experience of midwives; and community participation (1). All the programs can be successful if everyone involved in them tries their best and contributes especially qualified midwives as key persons.

From a study of maternal risk factors of hypertension syndromes in Brazil, the quality of ANC is more important than the quantity or frequency of ANC. Even though the majority of pregnant women had attended ANC more than seven times, they still presented complications resulting from blood pressure elevation (5). By practicing and applying the basic ANC standards, midwives can detect problems of pregnant women as soon as possible so that they can then give appropriate advice and offer appropriate interventions for them. Observing basic standards can avoid severe problems and decrease the risk of maternal deaths and morbidity. As early as 1930,

from A Clinical Guide to Best Obstetric Practice, many people knew that dangers to pregnant women were considered preventable. Watson stated: “The stillbirth rate falls 50 percent with proper antenatal supervision and the death rate from toxemias, hemorrhages and labour complications is considerably diminished”(6)

The 10 basic ANC standards for pregnant women are called 10 T in Indonesia (4). Originally, ANC practice guidelines for midwives in Indonesia consisted of 7 steps, namely measuring weight and height; measuring blood pressure; measuring the fundus uteri; giving tetanus immunization; giving 90 ferum (Fe) tablets; giving laboratory test for sexual transmitted diseases; dealing with all problems in pregnant women by giving appropriate advice or counselling and treatment in each case and encouraging women to control their pregnancy routinely. In 2009, the government added 3 more steps to the basic ANC practice guidelines. These were: measuring upper arm diameter (nutrition status), knowing the lower uterine-fetal presentation, and counting the fetal heart rate. The laboratory tests were extended to include more routine tests, such as for Hb, blood group, and protein and sugar urine (4). Each of the 10 steps should be properly completed to detect any early pregnancy complications. This 10 step basic ANC program is relatively new and started in 2009. It is appropriate to gauge midwives reactions and their intentions regarding these new standard practice guidelines.

“Despite national policy to shift ANC towards being midwifery-led and despite provisions in a European Directive permitting mostroles in ANC to be performed autonomously by trained midwives, there is no consensus among midwives in Estonia, Africa that all aspects of ANC should be their responsibility at present. Thorough research is required to establish which specific ANC roles Estonian midwives are not willing to take responsibility for, and to examine why they are not willing to take on such roles” (7). Indonesian midwives as the first line service of ANC have huge responsibilities in taking care of pregnant women. For this reason, the Indonesian government improved the ANC practice guidelines from 7 steps to 10 steps in order to increase the quality of ANC services. Initially, the additional steps were likely to be obstetricians’ responsibilities, so midwives’ and obstetricians’ roles now

overlap implement after the 2009 changes. First of all, in order to apply the ANC practice guidelines, midwives should have a positive intention to use the guidelines and be clear about their responsibilities. If midwives' intentions regarding the ANC practice guidelines can lead them to have positive outcomes, such as the early detection of pregnancy complications and reduction of maternal mortality risks, they are more likely to perform the ANC practice guidelines properly (8).

Palembang is the capital district of South Sumatra, Indonesia. In 2005, the maternal mortality ratio for Palembang was 317 per 100.000 live births (9). Major efforts will be needed to achieve the government's target of a maternal mortality ratio of 102 per 100.000 live births by 2015 through the implementation of the MPSP (3). The success of this program will depend on the availability and sustainability of qualified midwives as key persons, and also the adequacy and existence of equipment and facilities to support ANC practice (1). Moreover, excellent programs and adequate equipment are of little use if they are not practiced or used adequately by the providers. The most important thing is whether midwives want to perform the ANC practice guidelines, or not; it needs a strong intention from them about how important it is to use the guidelines and the usefulness of practicing the guideline at the beginning. Few studies have focused on the factors related to the intention of midwives to use basic ANC practice guidelines in Indonesia. Tedja's study in Palembang district found that more than half midwives (59.5%) did not follow the ANC basic practice guidelines (10). For these reasons, it is important to investigate the factors related the intention of midwives to use basic ANC practice guidelines in Palembang, Indonesia.

1.2 Research Questions

- To what extents of the midwives' intentions regarding using the basic ANC practice guidelines?
- What factors are significantly related to midwives' intentions regarding use of the basic ANC practice guidelines in Palembang district?

1.3 Research Objectives

1.3.1 General Objective

- To determine the intentions of midwives regarding use of the basic ANC practice guidelines in Palembang district.

1.3.2 Specific Objectives

- To describe the intentions of midwives in Palembang district regarding use of the basic ANC practice guidelines.
- To describe the independent variables, (i.e. socio-demographic characteristics, attitudes towards using the basic ANC practice guidelines, subjective norms, and perceived behavioral control factors to use basic ANC practice guidelines).
- To examine the association between the independent variables and intentions of midwives to use basic ANC practice guidelines.

1.4 Conceptual Frame Work

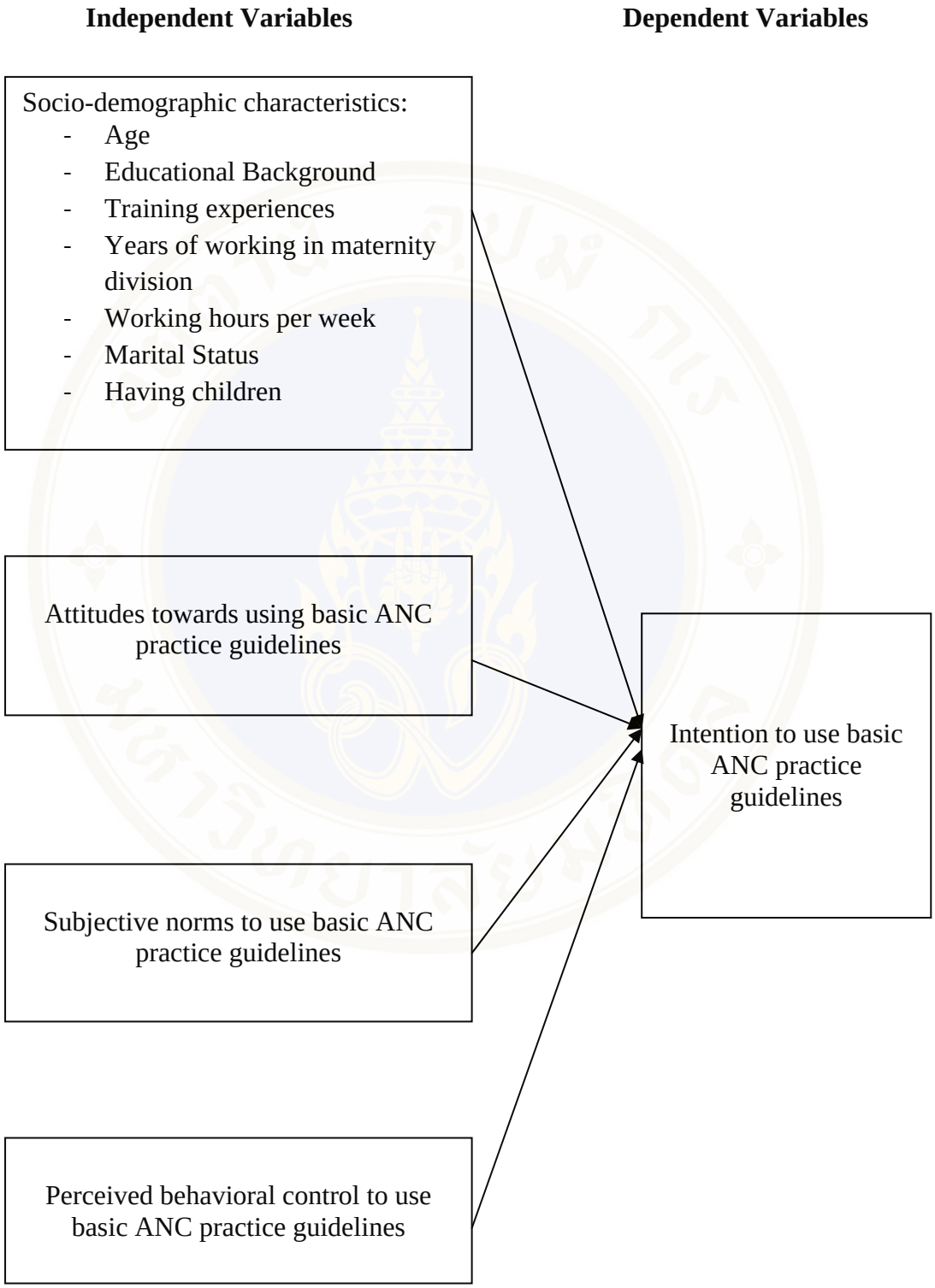

Figure 1.1 Conceptual framework

1.5 Operational definition of studied variables

- **Intentions of midwives regarding using basic ANC practice guidelines**
  Refers to midwives would likelihood engage in using the basic ANC practice guidelines.

- **Attitudes of midwives regarding using basic ANC practice guidelines**
  Refers to the midwives' points of view about performing the ANC practice guidelines are good or bad.

  - Belief about outcomes of applying basic ANC practice guidelines
    Refers to midwives believed that the practice of ANC performance is associated with certain attributes or outcomes.

  - Evaluation of expected outcomes
    Refers to midwives beliefs about the evaluation or outcome of practicing of basic ANC practice guidelines

Finally belief about outcomes and evaluation of expected outcomes were crossed each other to get overall attitudes of midwives.

- **Subjective norms of midwives regarding use of the basic ANC practice guidelines**
  Refers to the midwives beliefs about whether most people approve or disapprove of the basic ANC practice guidelines.

- Normative beliefs
  Refers to midwives beliefs about whether each referent such as the head of health office, colleagues, and patients approves or disapproves of the basic ANC practice guidelines.

- Motivation to comply
  Refers to motivation of midwives to do what each referent such as the head of health office, colleagues, and patients think.

Finally normative beliefs and motivation to comply were crossed each other to get overall subjective norms of midwives.

- **Perceived behavior control of midwives regarding use of basic ANC practice guidelines**

  Refers to the midwives' perceptions about how easy or difficult it is to perform the basic ANC practice guidelines or an overall measurement of perceived control over the ANC practice.

  - Control belief

    Refers to midwives perceived likelihood of occurrence of each facilitating or constraining condition in practicing basic ANC practice guidelines.

  - Perceived Power

    Refers to midwives perceived effect of each condition in making the practice guidelines of ANC performance difficult or easy.

Finally control belief and perceived power were crossed each other to get overall perceived behaviour control of midwives.

- **Socio-demographic factors**.
  - **Age**

    Ages refers to the complete years of respondents at the time of interview.

  - **Academic educational background**

    Refers to whether the respondents had had ≥ 3 years midwifery academic program or only 1 year midwifery academic program.

  - **Training Experiences**

    Refers to the professional in-service training experiences of the respondents related to basic ANC practice guidelines during the last 2 years.

- **Years of working in maternity divisions**

  Refers to how long the respondents have worked as midwives in the maternity division at a community health center and hospital

- **Working hours per week**

  Refers to how many hours midwives work at antenatal care clinics per week

- **Marital status**

  Refers to whether the respondents are single, married, or widowed/divorced/separated.

- **Having children**

  Refers to whether the respondents have children, or have not.

1.6 Limitation of the study

- Data was only gathered by self-administered questionnaire and observation of the real practice could not be done.
- This study only focused on socio-demographic factors, attitudes, subjective norms, and perceived control behavior. Other factors that influence the intentions of midwives regarding use of the basic ANC practice guidelines such as personality traits and intelligence would have needed more time and financial resources to investigate.
- This study only considered midwives' intentions to use the ANC practice guidelines at Palembang community health centers and public hospitals. It did not include the private sector because they had very different work environment and regulations from the public sector.

CHAPTER II
LITERATURE REVIEW

In this chapter, literature is reviewed to provide a theoretical background to understand the intentions of midwives regarding use of basic ANC practice guidelines, and related factors, in Palembang District, Indonesia. The literature review consists of the following parts:

2.1 Preventive care and reducing maternal mortality

Every year, more than 500 mothers die or 1400 mothers die every day because of complications during pregnancy and childbirth in the world. Almost 99% of these deaths occur in developing countries, especially in Africa and South Asian countries (1)(11). Indonesia in Southeastern Asia has a high maternal mortality ratio (MMR), and in 2007 it was 228 per 100,000 live births. Palembang is a district in Indonesia. In 2005, the MMR of Palembang was 317 per 100.000 live births (Indicator Report Database 2005 UNFPA 6th Country Programme) (2).

These data show that maternal mortality is a major problem in the world, and particularly in Indonesia, greater effort is needed to reduce the MMR. Most causes of maternal mortality can be prevented by good quality health services, ANC, skilled health workers assisting at birth, and access to emergency care units (12). In early 1930, in A Clinical Guide to Best Obstetric Practice, Watson stated “The stillbirth rate falls 50 per cent with proper antenatal supervision and the death rate from toxemias, hemorrhages and labour complications is considerably diminished” (6). He clearly mentioned that most of the causes of maternal deaths can be prevented as long as ANC practice guidelines can be properly and adequately followed. The quality of ANC is more important than the quantity or frequency of ANC; even though the majority of pregnant women had attended ANC more than seven times, they still presented complications resulting from blood pressure elevation (5).

National advisory groups and agencies have established recommendations and practice guidelines to assist health care providers in providing preventive care. Although preventive services have been shown to decrease morbidity and mortality from acute and chronic conditions, these services are underutilized for a variety of reasons. One important reason for the gap between preventive guidelines and practice is the failure of health professionals to follow the recommended guidelines (13) (14).

Health promotion and screening efforts are particularly applicable to primary care and advanced nursing practice. Historically, nurse practitioners (NPs) have advocated the integration of health promotion and disease prevention into their practices (15). Some studies have found that NPs spending time on listening and providing health education to their patients makes them more effective at promoting health than other providers (16).

ANC is one particularly effective strategy to reduce or eliminate complications in pregnancy. It is undertaken by midwives as the first line level of care (17). In Indonesia, a policy shift from home births to community-based facility births would enable midwives to offer a better service by operating in teams. In turn, this increases their obstetric workload and thereby their exposure to complications by facilitating access to emergency obstetric care. Attention has focused recently on the

importance of adequate and equitable provision of health personnel to raise levels of skilled attendants at delivery and thereby reduce maternal mortality (18).

The division of tasks and responsibilities implies that one of the most important aspects of midwifery care is risk selection. For example, in the Dutch obstetric/midwifery system, midwives in their role as gatekeepers determine which cases of pregnancy and birth are considered 'normal' and remain under their care and supervision, and which cases are not, and therefore need referral to another level of care provision (17). This kind of health care system has also been applied in Indonesia. It is, therefore, important for midwives to know the basic ANC practice guidelines very well so that they can apply them to reduce pregnancy complications and maternal mortality.

2.2 General information on ANC

2.2.1 History of ANC

In 1915, Williams reviewed 10,000 consecutive deliveries at Johns Hopkins Hospital in New York and concluded that 40% of 705 perinatal deaths could have been prevented by better prenatal care. In 1954, Eastman credited organized prenatal care with having "done more to save mothers' lives in our time than any other single factor". In the 1960s, Dr. Pritchard established a network of university-operated prenatal clinics located in the most underserved communities in Dallas County. In large part because of increased accessibility, currently more than 95% of medically indigent women delivering at Parkland Hospital receive prenatal care. Importantly and related, the perinatal mortality rate of women in this system is less than that of the United States overall (19).

2.2.2 Global ANC practice guidelines

Prenatal care or ANC designed during the early 1900s focused on lowering the extremely high maternal mortality rates (6)(19). It can reduce the maternal and prenatal morbidity and mortality directly through the detection and treatment of pregnancy related or underlying diseases, or indirectly by detecting the risk factors of delivery and ensuring that the high risk pregnant women are cared for in a suitably

equipped facility (20). ANC can be practiced by health providers such as obstetricians, medical doctors, midwives and nurses. The purpose of ANC is to prevent or identify any pre-existing factors that might increase the risks of pregnant women and their babies by providing information and counselling (21).

In 2001, the Three Centres Consensus Guidelines on Antenatal Care 4 commented on the following basic care issues: appropriate number of visits; models of care; smoking cessation; asymptomatic bacteruria; routine investigations; measurement of blood pressure and symphyseal fundal height; urinalysis by dipstick; auscultation of the fetal heart; gestational diabetes mellitus; group B streptococcal disease; hepatitis; HIV; syphilis; and rubella screens. The RANZCOG guideline C-Obs 30: Suitability Criteria for Models of Care and Indications for Referral Within and Between Models of Care 5 and the New Zealand Section 88 guidelines 6 advise on the best practice surrounding referral to secondary care(6).

2.2.2.1 ANC Practice Guidelines in Indonesia

One study in Australia mentioned that the 1988 National Health and Medical Research Council's 'Guidelines for Antenatal Care', which states that "antenatal care can be provided by staff of a hospital antenatal clinic or by obstetricians, GPs or independent midwives on a shared care basis", supports the involvement of a range of practitioners in providing ANC and the availability of varied models of care (22).

Table 2.1 Summarizes the current evidence for aspects of antenatal care relevant to practice in Australia and New Zealand(6)

	Topics	Recommendations
Education	Breastfeeding	Both group and individual sessions are effective. Follow through into postpartum is important
	Diet	Interventions to limit weight gain reduce GDM* (Olsen 2007).
	Smoking cessation	Effective use of nicotine (Rigotti 2006).
Late pregnancy complications	Breech, ECV*, twins, hypertensive syndromes, VBAC high head, post-maturity, etc	Benefit from individual counseling by specialist. It is important to document and communicate in regard to plans.
Maternal screening	Past obstetric and family history	Accurate documentation gives best risk assessment.
	BMI assessment	GDM recognition. Allows advice in regard to limitation of weight gain.
	STI and BV*	Reduces prematurity and fetal complications.
	Blood haemoglobin (Hb)	Anaemia detection, haemoglobinopathies, rhesus antibodies, reduced blood transfusions.
	Previous infections	Rubella, syphilis, hepatitis C, HIV. Allows for appropriate interventions.
	Polycose	GDM diagnosis improved.
	Domestic issues	Use of screening questions improves recognition.
	Mental health	Benefits of ALPHA program/direct questioning improves outcomes.
	Urine dipstick	Proteinuria in community automated point of care testing recommended for Pre eclampsia detection
Fetus	Anomaly screening	Decision aid and leaflets both effective for pregnancy screening (Graham 2000 Becker 2004). Women prefer one on one discussions.
	Gestational age confirmation	First trimester dating and viability, assists induction of labour (IOL) and other decisions.
	Fetal growth	Scans and Doppler assist identify FGR*.
Examination	SFH* measurement	Incomplete evidence regarding benefits. Individualised GROW charts.
	Fetal heart auscultation	No benefit over fetal movement enquiry. Reassurance only.

* GDM = gestational diabetes mellitus
* BV = bacterial vaginosis
* ECV = external cephalic version
* FGR = fetal growth restriction
* SFH = symphyseal fundal height

In some countries including Indonesia, midwives are the first line of maternal health care services, especially ANC for pregnant women (17)(18). Indonesia has been identified as one of 57 countries with a critical shortage of health personnel (23), but at a national level there is no shortage of midwives, largely because of the village-based midwife program. This initiative, launched in 1989 (24), was unique as a national effort to follow the World Health Organization's (WHO) guidance for safe motherhood. It sought to address high maternal mortality, thought to be due to a dearth of midwives and under-use of services (25), particularly in rural areas, by assigning a midwife to each village in the country and thereby raising the number and distribution of skilled attendants.

In Indonesia, existing nurses were to be trained in midwifery under an intensive 1-year program, to live in and work from village birthing facilities provided by the communities for which they had responsibility, and to operate as multi-purpose providers, but with specific responsibility for pregnancy, delivery and post-partum care (24)(26)(27).

The Indonesian ministry of health initiated a midwifery education program from 1989 to 1996 that trained more than 54,000 community-based midwives. Due to this program, the proportion of deliveries assisted by skilled attendants throughout Indonesia rose from 25% in the early 1990s to 76% in 2006 (28). The Indonesian government developed the MPSP as a strategy to reduce maternal and infant mortality in 2000. It becomes a continuation of the safe motherhood program in Indonesia.

2.2.2.1.1 Making Pregnancy Safer Program

The MPSP was implemented in Indonesia in 1988. These efforts were successful in reducing the MMR from 450 in 1985 to 228 maternal deaths per 100,000 live births at 2007 (3). Although this showed a reduction of the MMR, the national target based on the Millennium Development Goal (MDG) of 102 maternal deaths per hundred thousand live births by 2015 is still far from being achieved (3).

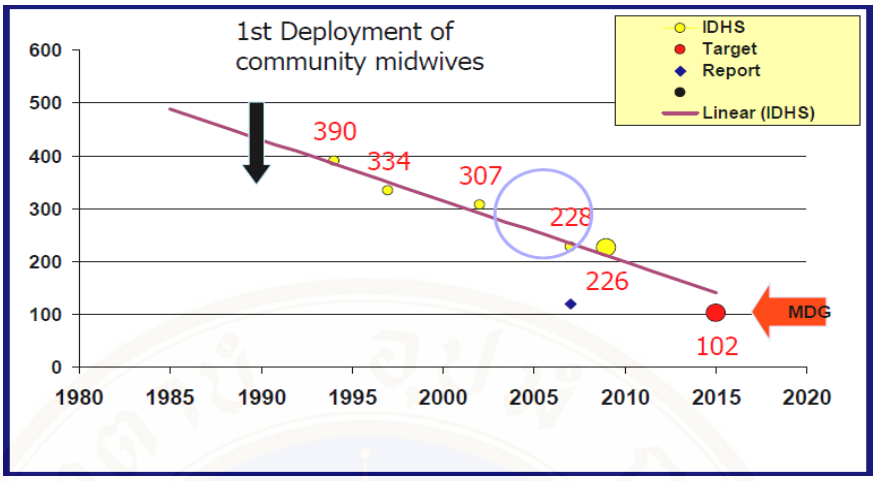

Figure 2.1 Trend of maternal mortality ratio in Indonesia (3)

Awareness of the risks of delaying transfers of pregnant women to health centers has also grown as a result of the Program Gerakan Sayang Ibu (To Love Mother Programme in Bahasa). This information program prompted many villages to provide transportation to transfer pregnant women either to community health centres or midwife delivery huts (28).

These initiatives were part of WHO's MPSP strategy, which was launched in 1999 with support from the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF) and the World Bank. The MPSP in Indonesia has three key principles: every delivery should be attended by a skilled birth attendant, every complication should be referred and managed appropriately, and all reproductive-age females should have access to contraceptives and post-abortion care. The Indonesian government has set a target to lower the MMR to 125 per 100,000 live births by 2010 (3) (28).

2.2.2.1.2 The 10 Basic ANC Guideline Practices in Indonesia.

There are many Indonesian government programs to reduce maternal mortality and infant mortality ratios. These include the Mother Friendly Movement (Gerakan Sayang Ibu), the White Ribbon Alliance, BPCR/ P4K with Sticker “Village alert”, the PTC and DTC (Provincial and District Training Center), the 10 step of basic ANC practice guidelines (3) (29).

The Indonesian government promulgated the 10 step basic ANC practice guidelines based on WHO ANC standard practice. Table 2 lists interventions delivered to mothers during pregnancy, childbirth and in the postpartum period, and to the newborn soon after birth. These include important preventive, curative and health promotional activities for the present as well as the future. “Routine essential care” refers to the care that should be offered to all women and babies, while “situational care” is dependent on disease patterns in the community. Some women and babies with moderately severe diseases or complications require “additional care” while those with severe diseases or complications require “specialized care” (30).

The Indonesian government has set up a policy regarding ANC visits to mirror WHO policy; minimum of 4 of ANC visits for pregnant women (4). In every visit, basic ANC practice guidelines have to be applied by the midwives. Before 2000, the government required only 7 steps of basic ANC standard practices. These consisted of measuring weight and height, measuring blood pressure, measuring the fundus uteri, giving tetanus immunization, giving 90 ferum (Fe) tablets, giving a laboratory test of sexual transmitted diseases, and giving appropriate advice or treatment in each case ,and encouraging women to control their pregnancy routinely (29). In 2009, the government added 3 more basic ANC standard practice guidelines. These included measuring upper arm diameter (nutrition status), knowing the lower uterine-fetal presentation, and counting the fetal heart rate. Laboratory tests were extended to include more routine tests, for example, Hb, blood group, and protein and sugar urine (4).

2.3 Related studies about intention of health providers regarding use of the basic ANC practice guidelines

2.3.1 Socio-demographic factors

Personality traits, intelligence, socio-demographic variables, values, and other variables of this kind are considered "background factors" in the Theory of Planned behavior (TPB). They are not neglected but assumed to influence intentions and behavior indirectly by affecting behavioral, normative, and/or control beliefs. That

is, the components of the TPB are assumed to mediate the effects of background factors on intentions and actions. The theory acknowledges that background factors can provide valuable information about possible precursors of behavioral, normative, and control beliefs, information not provided by the theory itself. Conversely, with the aid of the TPB it becomes possible to examine why a given background factor influences behavior by tracing its effects via the more proximal antecedents of the behavior (31)

In Kathleen Reeve's study (2004), chi-square tests were used to examine the relationships between intention and NPs' gender, age, type of certification, degree, practice locale, and number of years in practice. No significant relationships were found between intention and NP gender, age, practice locale, or years in practice (32).

In Palembang in 2001, Tedja suggested that there was a significant association between workload and the adherence to ANC practice guidelines or perception of midwives (p-value = 0.032). Midwives who had lighter workloads were 2.64 times more likely to follow basic ANC practice guidelines (10). Suganda’s study in Jakarta (33) showed that long years of working would increase the self esteem and skill of midwives. Hanifi’s study in Bogor (34) found that there was a positive relationship between long years of working and their performance in their work. Anderson (35), also found that longer years of working can increase capabilities or skills and intention to do the work better than before. However, Tedja's study found no significant relationship between age and the adherence to, and perception of, midwives basic ANC practices guidelines (10). In Sarwono’s study in Yogyakarta (36), older persons liked making friends and were friendlier to everyone. Moreover Hartono’s study (37) also found that older and maturer midwives had stronger intentions to do their daily work as professional midwives.

On the other hand, there were significant correlations between some socio-demographic variables and perception in Al-Ateeq E's study in Virginia, U.S.A (2008). The majority of nurses were female (93.2%). The age of respondents ranged from the 20’s to the 60‘s, and the most common age

Table 2.2 Care in pregnancy, childbirth and postpartum period for mother and newborn infant (30)

	Routine care (offered to all women and babies)	**Additional care** (for women and babies with moderately severe diseases and complications)	**Specialized-obstetrical and neonatal care** (for women and babies with severe diseases and complications)
Pregnancy care- 4 visits *Essential*	- Confirmation of pregnancy - Monitoring of progress of pregnancy and assessment of maternal and fetal well-being - Detection of problems complicating pregnancy (e.g.,anemia,hypertensive disorders, bleeding, malpresentations, multiple pregnancy) - Respond to other reported complaints - Tetanus immunization, anemia prevention and control (iron and folic acid supplementation) - Information and counseling on self care at home, nutrition, safer sex, breastfeeding, family planning, healthy lifestyle - Birth planning advice on danger signs and emergency preparedness - Recording and reporting - Syphilis testing	- Treatment of mild to moderate pregnancy complications: • mild to moderate anemia • urinary tract infection • vaginal infection - Post abortion care and family planning - Pre-referral treatment of severe complications • Pre-eclampsia • Eclampsia • Bleeding • Infection • Complicated abortion - Support for women with special needs e.g. adolescents, women living with violence - Treatment of syphilis (women and her patner)	- Treatment of severe pregnancy complications: • Anemia • Severe pre-eclampsia • Eclampsia • Bleeding • Infection • Other medical complications - Treatment of abortion complications
Situational	- HIV testing and counseling - Antimalaria intermittent preventive treatment (IPT) and promotion of insecticide treated nets (ITN) - Deworming - Assessment of female genital mutilation (FGM)	- Prevention of mother to child transmission of HIV (PMTCT) by antiretroviral treatment (ART), infant feeding counseling, mode of delivery advice - Treatment of mild to moderate opportunistic infections - Treatment of uncomplicated malaria	- Treatment of severe HIV infection - Treatment of complicated malaria

ranges were 45 to 54 years (29.7%) and 25 to 34 (27%). Only 6.8% were 25 or less and 14.2% were 55 and older. The correlation between age and perception of the eight attributes of work environment was positively and significantly associated with five attributes, nurse/physician (RN/MD) relationships ($r = 0.302$, $p < 0.01$), support for education ($r = 0.244$, $p < 0.01$), autonomous nursing practice ($r = .222$, $p < .01$), nurse-manager support ($r = .233$, $p < 0.01$), and a culture that values concern for the patient ($r = 0.263$, $p < 0.01$). The results showed that support for education, autonomous nursing practice, nurse-manager support, and a culture that values concern for the patient was affected by age (38)

Level of education was negatively and significantly associated with six attributes, support for education ($r = -0.306$, $p < 0 .01$), autonomous nursing practice perceived ($r = -0.210$, $p < 0.05$), adequacy of staffing ($r = -0.256$, $p < 0.01$), working with other nurses who are clinically competent ($r = -0.274$, $p < 0.01$), nurse-manager support ($r = -0.343$, $p < 0.01$), and a culture that values concern for the patient ($r = -0.293$, $p < 0.01$). These results suggest that educational level was inversely related to nurse perceptions of work environment (38).

The other correlation was between years of experience in current position and the eight attributes of work environment. This result reveals a negative correlation with four attributes: control of and over nursing practice ($r = -0.182$, $p < 0.05$), perceived adequacy of staffing ($r = -0.212$, $p < 0.05$), working with other nurses who are clinically competent ($r = -0.182$, $p < 0.05$), and nurse-manager support ($r = -0.177$, $p < 0.05$) suggesting that the years of experience in current position is inversely related to nurse perceptions of work environment (38).

Makowiecka's study stated that the 1-year midwifery training program was of questionable quality, inadequate duration and, because of a combination of the high number of midwives being trained, low fertility and low use of facilities, many midwives had virtually no experience of managing a delivery during their training. Small scale evaluations suggest that midwives who qualified under this scheme did not have the skills or knowledge needed to perform their midwifery duties effectively (39).

The low obstetric workload of midwives compromises their professional capacity through lack of skill maintenance. In one study about midwifery provision in Indonesia (2008), almost all (98%) village-based and (94%) health centre midwives had assisted women around the time of delivery over the preceding 3 months, while fewer than half of the nurses (46%) had done so. Of those who had attended women during labour, delivery or the immediate postpartum period, the total number attended was very low, with a median of 10 (IQR: 6–18) over 3 months. Nurses assisted fewest deliveries (median: 3, IQR: 2–7) and hospital midwives the most (median: 20, IQR: 9–50) ($P<0.001$) (39).

2.3.2 Behavioural intention regarding use of the basic ANC practice guidelines.

The literature contains limited information or just a few studies describing current health promotion attitudes and practices of NPs (32). In one study in Texas (2004), as previously stated, the recommendations of Ajzen and Fishbein (1980) guided the instrument developed for this study. Bivariate correlations were conducted to assess the associations between the predictor variables and intention. All measures were significantly correlated with intention. Texas NPs who had positive attitudes, identified social support, and had the necessary internal and external resources, expressed greater intentions of engaging in health promotion activities with their patients (32).

Other research in America, in 2007, about Certified Nurse-Midwives' (CNMs) intention to counsel and prescribe emergency contraception to women in Colorado also showed that the three factors that contribute within the TPB, attitudes towards behavior, subjective norms, and perceived behavior control, were found to significantly predict the intention of CNMs (40).

Kortteisto’s study in Finland (41) found that the intention to use clinical practice guidelines in decision making for patient care was more often positive than negative intention. Kortteisto’s study showed 18% of the respondents indicated absolutely positive and 30% positive intention, while only 1% indicated absolutely

negative and 4% negative views, and the rest groups were in probably positive or negative and neither negative nor positive groups.

There was no similar study about intention in Palembang. However, Tedja's study about the adherence to guidelines or perception of midwives (10) in Palembang found that 57.1% of the respondents did not agree with basic ANC practice guidelines (7T) and only 42.9% did agree. That research also found that only 40.5% of respondents followed the ANC basic practice guidelines, and 59.5% did not (10).

2.3.2.1 Attitudes towards using basic practice guidelines as a promotive and preventive care.

Most of the Texas NPs responding to the survey were knowledgeable about the importance of health promotion in their practices and had positive attitudes to health promotion. Nearly 75% responded that preventing disease was very important. Approximately 92% replied that serving as a role model by engaging in regular physical activity, not smoking, and maintaining an ideal weight was an important aspect of the role of the NP. Over 67% of the Texas NPs surveyed disagreed with the statement that smokers would not quit smoking even if encouraged by a health care provider to do so. More than 98% of Texas NPs completing the questionnaire agreed that routine screening for obesity, alcohol consumption, and physical inactivity should be included in the history and physical of particular individuals. Unfortunately, only 61.2% of individuals agreed that providing screening and health promotion for every patient seen would be easy (32).

The Texas NPs represented in this study had a positive attitude toward health promotion and intended to provide screening and counseling for the majority of their patients. Nearly 100% of the study participants agreed that preventing disease is important and that cancer and diabetes mellitus screening should be included in routine history and physical. Almost 97% responded that a smoking history should be taken from every patient. In addition, 99.5% agreed that health promotion is an important aspect of the NP role. Texas NPs have very positive attitudes about health promotion; however, their attitudes to health promotion appear to be more positive than the reported practices would suggest (32).

Emeis's study (2008) showed that CNMs had positive attitudes toward emergency contraception (EC) as a method to reduce unintended pregnancy. This was reflected in the frequency with which they counseled and prescribed EC to women (40).

2.3.2.2 Subjective norms regarding use basic ANC practice guidelines.

The few studies on midwifery that have been undertaken in Canada have described the attitudes of health care professionals and how these professionals envisage midwifery practice. A small study in Ottawa in 1986 found that most of the physicians questioned thought that midwives should have nursing qualifications, and 60% thought that midwives should work under the supervision of a physician. A study in Quebec found that physicians, nurses and midwives agreed about the training of midwives, with most stating that midwives should have a university degree. There was also agreement about midwives providing care to women with normal pregnancies, collaborating with other health care professionals in the care of these women and delivering the babies in hospital (42).

In a national survey of NPs by Burns et al, (2000) in Texas, many responded that it was useless to counsel patients about physical activity because they would not follow the recommendations. As found in other studies, a frequently cited barrier to health promotion by Texas NPs was a lack of patient desire to change. Unfortunately, reimbursement for health promotion is generally low, which can negatively influence the provision of preventive care. Reimbursement for the recommended clinical preventive services frequently ranged from 30% to 58%. Texas NPs agreed that the lack of reimbursement for health promotion did influence their practice. In fact, several felt so strongly about this issue that they telephoned the investigator to encourage dissemination of the statistics gathered in that survey to policy makers in a position to change the reimbursement system (32).

In the United States, less than 5% of the total annual health care expenditure is spent on health promotion. Politics helps determine the overall funding for preventive services. The growing numbers of NPs might impact political factors by increasing their efforts with policy makers in disseminating information

about the benefits of healthy lifestyles and encouraging policies requiring reimbursement for prevention and counselling activities (32).

There was disagreement about the issues of out-of-hospital births, the autonomy of midwives and whether midwives should work under the supervision of physicians. A 1999 survey of Quebec physicians involved in maternity care found that physicians who were judged to be more client-centered were more open to midwifery, as were those who had had previous experience working with midwives. A small U.S. study in Kansas found that obstetricians were more likely than family physicians to include a nurse-midwife in their practice, and both types of physicians agreed that nurse-midwives were qualified to deliver babies in hospital. Literature from European studies has little relevance, as midwifery practice there is under the supervision of physicians (42).

Kortteisto's study about health professionals' intentions to use clinical guidelines, also found that the strongest factor for the physicians was the perceived behaviour control, while the key factor for the nurses and the other professionals was the subjective norms. This means that context- and guidelines-based factors either facilitate or hinder the intention to use clinical guidelines among physicians and, correspondingly, normative beliefs related to social pressures do so for nurses and other healthcare professionals (41).

Opinions about various aspects of midwifery practice differed significantly between diploma-prepared and degree-prepared nurses. Nurses with a university degree more commonly expressed opinions consistent with autonomous midwifery practice; however, almost 80% of the total sample used in the George's study in Kansas thought that midwives should work under physician supervision, and 90% thought that physician consultation should be mandatory. The issue of home births was contentious, with 44% of the total sample disagreeing with the idea and 20% stating no opinion on the matter. Nurses working in smaller communities were more likely to support home births. Nurses who had had experience working with midwives were more likely to support midwives being able to perform episiotomies, prescribe contraceptives and deliver primiparas (42).

2.3.2.3 Perceived Behavioural Control to Use Basic ANC Practice Guidelines.

Texas NPs were asked to identify barriers to providing health promotion for every patient seen in their practices (see Table 7). The most significant barrier to the provision of health promotion identified by 56.9% of respondents—was lack of time. Lack of reimbursement for health promotion activities was identified as a barrier by 30.8% of Texas NPs (32).

Midwives attend a median of 40 births per year. There is no internationally agreed minimum number of deliveries that a midwife should perform to maintain her midwifery skills, but Scotland and Bullough (2004) recommend an optimal annual workload for obstetricians of between 100 and 125 normal deliveries. If the same recommendation is applied to Indonesian midwives, their delivery volume falls well below optimal levels, and their capacity to manage complications and recognize the need for referral may be compromised because they come across these situations so infrequently (39).

In one study in Burkina Faso (2009), physical examination was performed individually in all the cases by midwives and was conducted in a room used as an office equipped with an examination table. The light was poor in all the cases; daylight was the only source in 78% of the cases. Clinical examination was often interrupted by a visitor or another health worker or even a stranger, which did not guarantee the confidentiality of information. The examination was brief in all the cases and cardiopulmonary sounding was not performed in any case. A speculum was not used for gynecological examination in any health center. Vaginal examination was often carried out using a different fingerstall for each patient but using the same pair of gloves for all the patients. Hands were washed with soap before and after each examination in a very few cases where water was available (1).

2.4 Theoretical Model

2.4.1 Theory of Planned Behavior

The theory of reasoned action (TRA) and TPB focus on theoretical constructs that are used to predict health-related behaviors. These theories propose that the best predictor of behavior is an intention to perform that behavior. The TPB suggests that there are reasons for one's intention to perform a behavior (32). Ajzen developed the TPB; to predict whether a person intends to do something, the following needs to be known (31) (43):

- Whether a person is in favor of doing it ('attitude')

Attitude reflects a personal judgement that performing a particular behavior is good or bad. It is influenced by an individual's beliefs about outcomes of behavior and outcome evaluation. People who believe that performing a particular behavior will lead mostly to positive outcomes, will hold a positive attitude towards performing that behavior. However, a person who believes that performing a particular behavior will mostly lead to negative outcomes, will hold a negative attitude.

- How much a person feels social pressure to do it ('subjective norm')

Descriptive perceptions are about what important people actually do. They are divided into two categories:

- Injunctive perceptions about what important people think a person should do.
- Subjective perceived social pressure to perform a behaviour.

Subjective norms reflects how a person perceive the social pressure from important others to perform or not to perform a particular behavior. It is a function of belief about the expectation of others (normative belief) and an individual's tendency to live up to these others' expectations (motivation in comply). Important others can be parents, teachers, peers, doctors, etc.(43).

- Whether a person feels in control of the action in question (‘perceived behavioral control’)

To improve the predictive value of the theory, Ajzen (1985; 1988; 1991) expanded the model to the TPB, by adding the construct of perceived behavioral control. It reflects individual perception about how easy or difficult it is to perform that specific behavior. The stronger the perceived control, the more likely it is that a person will act on that intention, including in face of obstacles (31) .

As a general rule, the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be a person’s intention to perform the behavior in question (31).

Changing these three ‘predictors’ can increase the chance that a person will intend to do a desired action and thus increase the chance of the person actually doing it. In a clinical consultation, the clinician’s treatment decisions and actions are examples of intentional behavior. In implementation research, clinical guidelines make evidence-based recommendations about the actions of clinicians in order to maximize the quality of care. Many interventions are likely to work through clinicians’ attitudes, subjective norms and perceived behavioral control; enhancing these is likely to increase compliance with guidelines (31) (32) (40).

Behavior is the manifest, observable response in a given situation with respect to a given target. Single behavioral observations can be aggregated across contexts and times to produce a more broadly representative measure of behavior. In the TPB, behavior is a function of compatible intentions and perceptions of behavioral control. Conceptually, perceived behavioral control is expected to moderate the effect of intention on behavior, such that a favorable intention produces the behavior only when perceived behavioral control is strong. In practice, intentions and perceptions of behavioral control are often found to have main effects on behavior, but no significant interaction (8)

Based on the TPB, the best predictor of behavior is a person’s intention to perform (or not to perform) that behavior (43). Intention is an indication of a person's readiness to perform a given behavior, and it is considered to be the immediate

antecedent of behavior (31). For example, to predict whether midwives will perform basic ANC practice guidelines, the simplest approach is to ask whether they intend to do so. It is important, however, to know the reasons underlying this intention. Other factors, including demographic and environmental characteristics, and knowledge are assumed to operate through model constructs and do not independently contribute to explain the likelihood of performing a behavior (31).

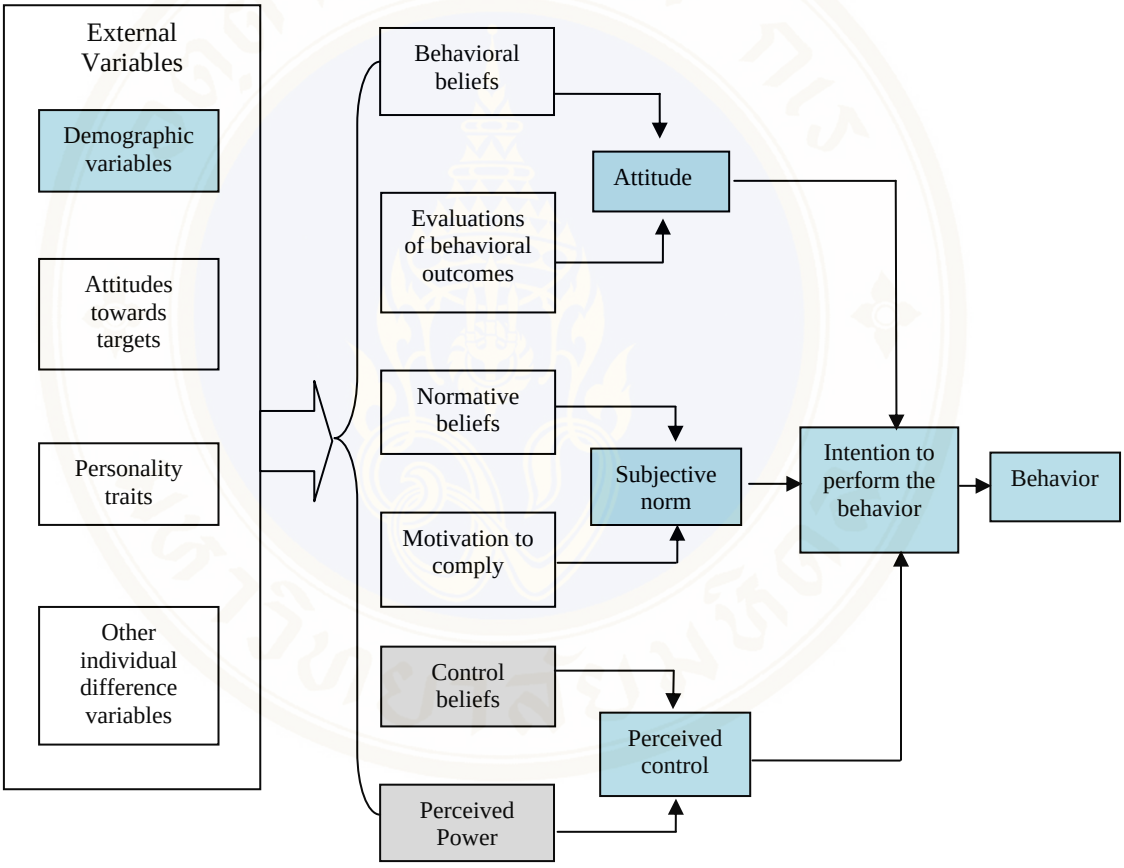

Figure 2.2 Theory of Reasoned Action and Theory of Planned Behavior

2.4.2 The theory of planned behavior and this study

For nurse-midwives, simply being aware of a recommendation for a health promotion behavior may not be enough. In a small study in U.S. CNMs had an incomplete understanding of the concept of evidence based medicine and were working with in wide variations in practice guidelines. Understanding multiple

influences on behavior such as the construct in the TPB is an important step in trying to understand the gap between theory and practice (Figure 3) (31) (40). It also stated in Walker's study that The TPB has been widely used to explore factors associated with health professionals' beliefs and attitudes to health related behaviour (44).

Based on above studies, The TPB is appropriate to be used in this study. Applying the TPB in the conceptual framework of this study, socio-demographic factors, attitudes, subjective norms and perceived behaviour control are the independent variables and intention is a dependent variable. The TPB is an appropriate model to explain the relationship between independent factors and dependent factors in this study.

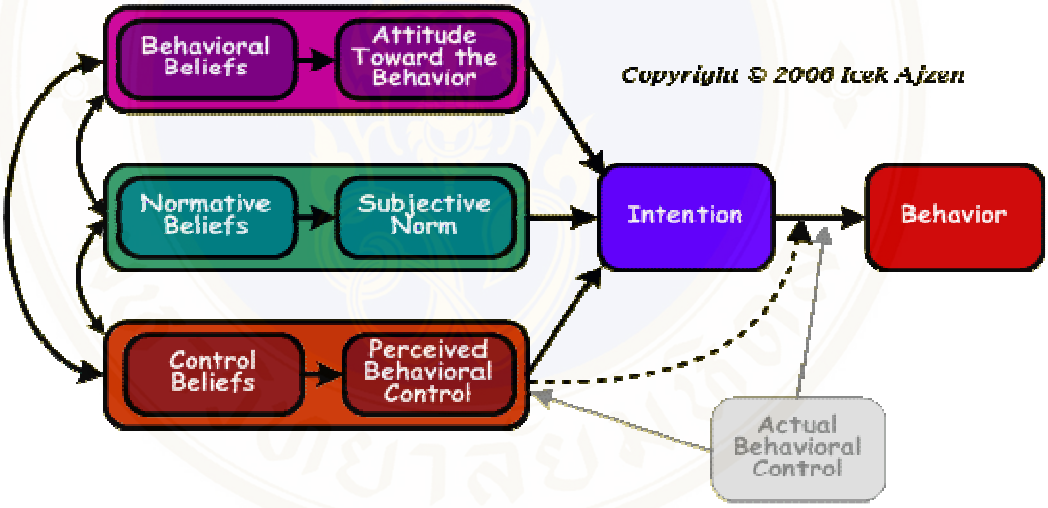

Figure 2.3 The theory of planned behavior diagram

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research design

A cross sectional study was designed the two-month period of the survey, which aims to discover the factors related to intention of midwives regarding using the basic ANC practice guidelines.

3.2 Study population

The population in this study comprised of midwives who worked in the maternity divisions of Palembang community health centers and public hospitals in Palembang District, Indonesia. The total number of the population was 173 midwives.

3.3 Study place

Geographically, Palembang is located at 2° 59'27 .99 "S 104° 45'24 .24" longitude. The total area of Palembang City is 102.47 km ² with an average height of 8 meters above sea level. The location of Palembang is strategic because it passed by the Trans Sumatra road linking regions in the island of Sumatra. In addition there are also in Palembang is a Musi River.

Figure 3.1 Indonesia Map

Figure 3.2 Palembang Map

The study was conducted at community health centers and public hospitals in Palembang District, South Sumatera Province, Indonesia. In Palembang District, there were a total of 39 community health centers and 2 public hospitals which provided maternal and child care.

3.4 Sample size and sampling technique

3.4.1 Sample size

The sample size (n) was calculated using the proportion formula:

$$n = \frac{Z^2 NP(1-P)}{Z^2P(1-P)+(N-1)E^2} = \frac{(1.96)^2 (173) (0.5) (1-0.5)}{(1.96)^2(0.5)(1-0.5)+(173-1)(0.05)^2}$$

$$n = \frac{166.1492}{1.3904} = 119.49 \sim 120$$

E = 5% (acceptance error)
Z = 1.96 (standard normal score at 95% of confidence interval)
N = 173 (total population of midwives work in maternal division)
P = 0.5

P was equal to 0.5 since the researcher did not have information from any previous study. This generated the largest sample size. According to the above formula, the required sample size should have been at least 120. In this study, the sample size was increased by 20% to allow for insufficient information or inappropriately completed questionnaires, so that the sample group comprised about 144 midwives.

3.4.2 Sampling technique

Stratified sampling technique was used to randomly select midwives from the total of 39 health centers and 2 public hospitals in Palembang District. The community health centers were divided in to two groups; 12 high workload community health centers and 27 low workload community health centers. They became two groups because high workload community health centers have more patients than the low workload community health centers. Moreover, in the public

hospitals, there were more patients than in health centers. The number of patients will affect the intention of midwives to use ANC practice guidelines; the most reason is due to lack of time in applying the practice guidelines (31). Using proportional to size, 10 high workload community health centers (in order to get 50 midwives) and 22 low workload community health centers (in order to get 68 midwives) were randomly selected to participate in this study and also 2 public hospitals were included to get 26 midwives. On average, there 5 midwives worked in each high workload health center and 3 midwives worked in each low workload health center. In Muhammad Hoesin hospital, there were 19 midwives, and in Bari hospital there were 13 midwives.

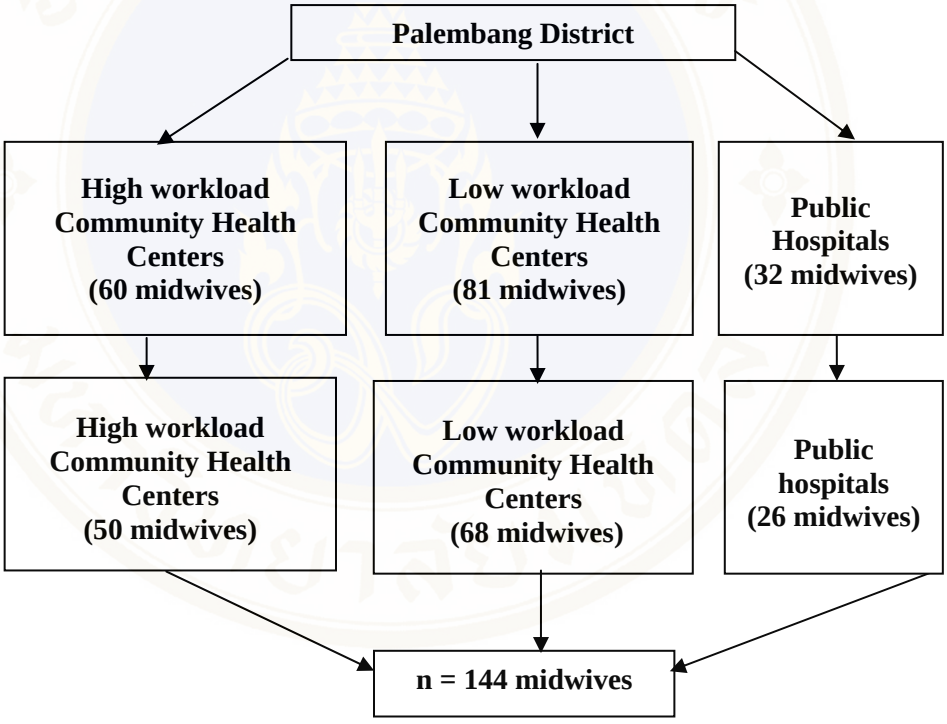

Figure 3.3 Sampling technique

3.5 Research instruments for data collection

There were a structure questionnaire and 3 opened-ended questions about advantages and disadvantages of using basic ANC practice guidelines. Data collecting technique was self-administered.

A structure self-administered questionnaire with closed-ended questions was constructed based on the manual of constructing questionnaires of the TPB (45) and existing theories. It was divided into 5 parts. It consisted of parts as follows:

Part 1 Socio-demographic factors

This part consisted of 6 questions dealing with the respondents' socio-demographic factors (age, educational background, training experiences, years of working in maternity division, marital status, and having children).

Part 2 Attitudes to using basic ANC practice guidelines

This part consisted of questions dealing with the attitude to using basic ANC practice guidelines and included 12 questions to determine the attitude levels of midwives toward using the ANC practice guidelines. Only 8 questions were scored as the others were direct measurement questions. The Cronbach's alpha coefficient of the standard questionnaire for attitude is 0.89 (34).

- Belief about outcomes of applying ANC practice guidelines (4 questions)

  Midwives believed that the practice of ANC performance was associated with certain attributes or outcomes. It was measured by unipolar unlikely-likely scale; scored 1 to 7 (Thurstone Scale).
- Evaluation of expected outcomes (4 questions)

  Midwives beliefs about the evaluation or outcome of practicing of basic ANC practice guidelines. It was measured by bipolar bad-good scale; scored -3 to +3.

The example of making the attitudes score:

A	If I use the 10 step basic ANC practice guidelines, I will feel that I am doing something positive for the patient	**Unlikely 1 2 3 4 (5) 6 7 Likely**
B	It causes a lot of worry and concern for a pregnant women if they are found to have high risks or complications in pregnancy	**Unlikely 1 (2) 3 4 5 6 7 Likely**

C If I use the 10 step basic ANC practice guidelines; I will detect any problems at an early stage **Unlikely 1 2 3 4 5 6 7 Likely**

D If I use the 10 step basic ANC practice guidelines, I've got to see patients more often **Unlikely 1 2 3 4 5 6 7 Likely**

E Doing something positive for the patient is **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

F Worry and concern experienced by patients if they are found to have high risks or complications in pregnancy is **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

G For these patients, detecting problems at an early stage is **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

H Seeing patients more often is **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

Imagine that a respondent had responded by circling the numbers indicated ***bolded*** above.

The total attitude scores were calculated as using the formula:

Attitudes = (A x E) + (B x F) + (C x G) + (D x H)

Attitudes = (5 x +3) + (2 x -2) + (6 x +3) + (2 x -1)

= (+15) + (-4) + (+18) + (-2)

= +27

The total attitude scores were ranged -84 to +84 and were classified into 2 groups: positive attitudes and negative attitudes.

Therefore, the attitude scores of the respondents reflected **positive attitudes** (i.e. **In favour** of practicing basic ANC practice guidelines).

Regarding there were only few respondents got negative scores in attitude scores, the 75th percentile (P_{75}) was used as the cut off point. These attitudes were classified into two groups: “positive” or “negative”.

Part 3 Subjective norms regarding use of basic ANC practice guidelines

This part consisted of questions dealing with the subjective norms regarding use of basic ANC practice guidelines and included 11 questions to determine the subjective norm levels of midwives to use the basic ANC practice guidelines. Only 8 questions were scored as the others were direct measurement questions. The Cronbach’s alpha coefficient of the standard questionnaire for subjective norms is 0.84 (34).

- Normative belief (4 questions)

  Midwives beliefs about whether each referent such as the head of health office, colleagues, and patients approve or disapprove of the basic ANC practice guidelines. It was measured by bipolar disagree-agree scale; scored -3 to +3.

- Motivation to comply (4 questions)

  Motivation of midwives to do what each referent such as the head of health office, colleagues, and patients thought. It was measured by unipolar unlikely-likely scale; scored 1 to 7(Thurstone Scale).

The example of making subjective norms score:

A The head of community health centers or obstetricians think I **should not -3 -2 -1 0 +1 +2 +3 should use the practice guidelines 10 step basic ANC**

B Patients would **disapprove -3 -2 -1 0 +1 +2 +3 approve of my using the 10 step basic ANC practice guidelines to their pregnancy.**

C Other midwives **do not -3 -2 -1 0 +1 +2 +3 do use the 10 step basic ANC practice guidelines.**

D The government **would disapprove -3 -2 -1 0 +1 +2 +3 approve of my using the 10 step basic ANC practice guidelines.**

E	Doing what GPs or obstetricians think I should do is important to me	**Not at all 1 2 3 (4) 5 6 7 Extremely**
F	The approval of my patients is important to me	**Not at all (1) 2 3 4 5 6 7 Extremely**
G	Doing what other midwives do is important to me	**Not at all 1 (2) 3 4 5 6 7 Extremely**
H	The government's approval of my clinical practice is important to me	**Not at all 1 2 3 4 5 (6) 7 Extremely**

Imagine that a respondent had responded by circling the numbers indicated ***bolded*** above.

The total subjective norm scores were calculated as:

SN= (A x E) + (B x F) + (C x G) + (D+ H)

SN = (+1 x 4) + (+3 x 1) + (+2 x 2) + (+2 X 6)

= (+4) + (+3) + (+4) + (+12)

= +23

The possible range of total scores was -84 to +84. Therefore, the normative belief score of the participant reflects **positive** social pressure (i.e. **to practice the basic ANC practice guidelines**).

Regarding there were no negative scores in subjective norm scores, P_{75} was used as the cut off point. It was classified into 2 groups: high subjective norms and low subjective norms.

Part 4 Perceived behavior control to use basic ANC practice guidelines

This part consisted of questions dealing with the perceived control behavior to use basic ANC practice guidelines and included 11 questions to determine the perceived behavior control levels of midwives to use the basic ANC practice guidelines. Only 8 questions were scored as the others were direct measurement questions. The Cronbach's alpha coefficient of the standard questionnaire for perceived behavior control is 0.78 (34).

- Control belief

  Midwives perceived likelihood of occurrence of each facilitating or constraining condition. It was measured by unipolar unlikely-likely scale; scored 1 to 7 (Thurstone Scale).

- Perceived Power

  Midwives perceived effect of each condition in making the practice guidelines of ANC performance difficult or easy. It was measured by bipolar difficult-easy scale; scored -3 to +3.

The example of making perceived behavior control score:

A	The equipment* which support for prenatal care I use is not very accurate	**Unlikely 1 2 3 4 (5) 6 7 Likely**
B	When I am using the 10 step basic ANC practice guidelines in the prenatal care I feel rushed	**Unlikely 1 2 (3) 4 5 6 7 Likely**
C	The equipment of prenatal care is uncomfortable for patients	**Unlikely 1 (2) 3 4 5 6 7 Likely**
D	Patients come to the prenatal care Inappropriately dressed to have their pregnancy checked using the 10 step basic ANC practice guidelines	**Unlikely 1 2 (3) 4 5 6 7 Likely**

E	I am	**Less likely (-3) -2 -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if the equipment that I use is accurate**
F	I am	**Less likely -3 (-2) -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if I feel rushed in the consultation.**
G	I am	**Less likely (-3) -2 -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if the equipment are uncomfortable.**
H	I am	**Less likely -3 (-2) -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if they come to the consultation inappropriately dressed to have their pregnancy checked**.

* equipment refers to stethoscope, tensimeter, weight and height measurement, fetoscope or USG, measurement of diameter of upper arm and fundus uteri, speculum, obgyn bed.

Imagine that the respondent had responded by circling the numbers indicated ***bolded*** above.

The total perceived behavioral control scores were calculated as

PBC = (A x E) + (B x F) + (C x G) + (D x H)

PBC = (5 x -3) + (3 x -2) + (2 x -3) + (3 x -2)

= (-15) + (- 6) + (- 6) + (-6)

= - 33

The possible range of total scores was -84 to +84. Therefore, the PBC score of the participant reflects **negative** control, i.e. practicing basic ANC guidelines practice was fairly difficult.

Regarding there were only few respondents got negative scores in perceived behaviour control, P_{75} was used as the cut off point. It was classified into 2 groups: high perceived control (feel in control of using basic ANC practice guidelines) and low perceived control (not feel in control of using basic ANC practice guidelines).

Part 5 Intention regarding use of basic ANC practice guidelines

This part consisted of 3 questions dealing with the intention to use ANC practice guidelines. These questions determined the intention level of midwives to use the ANC practice guidelines. It was measured by unipolar strongly disagree-strongly agree scale: score 1 to 7 (Thurstone Scale). The Cronbach's alpha coefficient of the standard questionnaire for intention is 0.90 (34).

The range of the intention scores was 3 to 21. Total score was categorized as high intention, if it was above P75. If it was less than or equal to P75, it was categorized as low intention.

Moreover, three open-ended questions were included to ask respondents' opinions about the advantage and disadvantage of using the 10 step basic ANC practice guidelines, and the need for supports from the government to help them to perform the basic ANC practice guidelines,

3.6 Pre-testing of the questionnaires

The questionnaire was pre-tested at sub-community health centers in Palembang, Indonesia. 23 respondents were selected, the reliability of the attitudes = 0.63, subjective norms = 0.74, perceived behavior control = 0.59, and intention = 0.75. They were calculated using Cronbach's alpha coefficient. Revised the final questionnaire was done to facilitate proper items of question for self-administered in the field. In order to make respondents got the clear explanations about the questionnaires, the researcher visit all the respondents in the selected health centers.

3.7 Data collection procedure

Data collection was undertaken after receiving permission of Mahidol University Institutional Review Board (COA.NO.MU-SSIRB 2011/008.0401) as follow:

1) Asked permission from District Health Office and Chief of Health Centres and the Director of Public Hospitals in the region by letter from AIHD's Director.

2) Translated questionaire from English to Bahasa Indonesia.

3) Selected respondents from the selected community health centers and public hospitals in Palembang district.

4) Asked midwives who worked in maternity division at selected community health centres and public hospitals to agree to participate. Before asking the midwives to answer the self-administered questionnaire, the researcher explained the purpose of the research and confirmed that the collected data would be kept confidential and that respondents could skip questions or refuse to answer.

5) Consent was obtained from each midwife.

6) The respondents completed the self-administered questionnaire. It took approximately 30 minutes to complete this questionnaire. If a participant did not understand a meaning of a question, the researcher explained the meaning. If the participant felt uncomfortable answering the question, it might be left blank.

3.8 Data management and analysis

Data were analyzed using standard statistical packages. EPI DATA was used for data entry and Minitab was used for data analysis. Descriptive statistics and Chi-square test, correlation analysis and multiple logistic regressions were used to analyze the data.

The method of making age variable becoming two groups (i.e. 20-39 and 40-59), the median was used as the cut off point. Regard to years of working variable, the researcher made the equal interval by calculating the difference between maximum data and minimum data than it was divided two. For working hours per week, it was divided based on the minimum working hours per week for midwives work in maternity divisions which were 30 hours/week.

CHAPTER IV
RESULTS

This cross-sectional study was conducted to determine the intentions of midwives regarding their use of basic ANC practice guidelines in the Palembang District of Indonesia. The study population was midwives aged between 21 and 56 years. Data was collected using a self-administered structured questionnaire. One hundred and forty four midwives participated in this study after its purpose had been explained to them, and after they had received a participant's information sheet and completed an informed consent form.

The findings initially described both dependent and independent variables are presented in terms of frequency and percentage. The relationships between the different independent variables and respondents' intentions regarding use of basic ANC practice guidelines were statistically determined by using Chi-square tests and multiple logistic regression. The results of this study are presented in 8 parts as follows:

4.1 Socio-demographic characteristics.

4.2 Attitudes to using basic ANC practice guidelines.

4.3 Subjective norms regarding use of basic ANC practice guidelines.

4.4 Perceived behavior control to use basic ANC practice guidelines.

4.5 Intention regarding use of basic ANC practice guidelines.

4.6 Advantages and disadvantages of using basic ANC practice guidelines.

4.7 Association between study factors and intention of midwives

4.8 Factors relating to the intentions of midwives

4.1 Socio-demographic characteristics

Table 4.1 shows that 47.9 percent of the respondents were aged 21 to 39 years and 52.1 percent aged 40 to 56 years. The median age was approximately 40 years old.

With regard to academic education level, 64.5 percent of the respondents had had 3 years at midwifery academic, 29.9 percent had had 1 year at midwifery academic, while only 5.6 percent had had more than 3 years at midwifery academic.

Of the midwives in this research, 70 percent had had less than 17 years working in maternity divisions and only 30 percent had had more than 17 years working experience in a maternity division.

Nearly two-third of the respondents (60.6%) worked hours more than 30 hours per week in a maternity division; 39.4 percent worked less than 30 hours per week; and only few midwives (2) did not answer to this question.

With regard to midwives' in-service training, 58.3 percent of the respondents did not have any training and 23.6 percent had one training session every year. Few of the respondents (18.1%) had training more than one training session every year. From these data, it could be concluded that most of the respondents very rarely received in-service training, especially about basic ANC practice guidelines.

A large majority of the respondents (82.6%) were married, 11.1 percent were single, and only a small percentage of the respondents (6.3%) were divorced, widowed or separated.

In relation to having children, the respondents were asked whether they had been pregnant and whether they had ever given birth. 83.9 percent replied that they had been pregnant and had given birth. 16.1 percent replied that they had not. Only 1 respondent did not answer this question.

Table 4.1 Number and percentage of the respondents by socio-demographic characteristics

Socio-demographic characteristics		Number (n=144)	Percent
Age groups (years)			
20-39		69	47.9
40-59		75	52.1
Min. = 21	Max. = 56	Median = 40.0	QD = 8.5
Academic education levels			
> 3 years midwifery academic		8	5.6
3 years midwifery academic		93	64.5
1 year midwifery academic		43	29.9
Years of working (n=140)			
≤ 17 years		98	70.0
> 17 years		42	30.0
Min = 1	Max = 35	Median = 14.0	QD = 8.0
Working hours/week (n=142)			
≤ 30 hours/week		56	39.4
> 30 hours/week		86	60.6
Min = 12	Max = 60	Median = 36.0	QD = 6.0
In-service training experiences			
No training		84	58.3
One training		34	23.6
> one training		26	18.1
Min = 0	Max = 4	Median = 0.0	QD = 0.5
Marital status			
Single		16	11.1
Married		119	82.6
Divorced/widowed/separated		9	6.3
Having children (n=143)			
Yes		120	83.9
No		23	16.1

4.2 Attitudes towards using basic ANC practice guidelines

The respondents were asked eight questions in order to assess their overall attitudes towards using basic ANC practice guidelines. These attitudes were classified into two groups: “negative” or “positive”. The criteria for these two classifications were based upon whether or not the respondents’ answer scores were equal to, or less than, the total P_{75} score, or greater than the P_{75} score. Table 4.2 illustrates that 70.8% of the respondents had negative attitudes about using basic ANC practice guidelines, and that 29.2% had positive attitudes.

Table 4.2 Number and percentage of the respondents by attitudes towards using basic ANC practice guidelines

Attitudes towards using basic ANC practice guidelines	**Number**	**Percent**
Negative	102	70.8
Positive	42	29.2
Min.= -15 Max.= 84 Median = 43.5 QD = 14.4		

Score : Negative $\leq P_{75}$, Positive $> P_{75}$

4.3 Subjective norms regarding use of basic ANC practice guidelines

The respondents were asked eight questions in order to assess the overall subjective norms regarding use of basic ANC practice guidelines. These subjective norms were classified into two groups: “low” or “high”. The criteria for these two classifications were based upon whether or not the answer scores were equal to, or less than, the total P_{75} score, or greater than the P_{75} score. Table 4.1 illustrates that 75.0% of the respondents had low subjective norms regarding use of basic ANC practice guidelines, and 25.0% had high subjective norms.

Table 4.3 Number and percentage of the respondents by subjective norms regarding use of basic ANC practice guidelines

Subjective norms regarding use of basic ANC practice guidelines	Number	Percent
Low	108	75.0
High	36	25.0
Min.= 15 Max.= 84 Median = 68.5 QD = 12.9		

Score : Low ≤ P_{75}, High > P_{75}

4.4 Perceived behavior control regarding use of basic ANC practice guidelines

The respondents were asked eight questions in order to assess the overall perceived behavior control regarding use of basic ANC practice guidelines. Perceived behavior control was classified as either “low” or “high”. The criteria for these classifications were based upon whether or not the respondents’ answer scores were equal to, or less than, the total P_{75} score, or greater than the P_{75} score. Table 4.2 illustrates that 74.3% of the respondents had low perceived behavior control and 25.7% had high perceived behavior control.

Table 4.4 Number and percentage of the respondents by perceived behavior control regarding use of basic ANC practice guidelines

Perceived behavior control regarding use of basic ANC practice guidelines	Number	Percent
Low	107	74.3
High	37	25.7
Min.= -18 Max.= 48 Median = 4.0 QD = 8.9		

Score : Low ≤ P_{75}, High > P_{75}

4.5 Intention regarding use of basic ANC practice guidelines

The respondents were asked eight questions in order to assess overall intentions to use basic ANC practice guidelines. These intentions were classified into two groups: “low” or “high”. The criteria for these classifications were based upon whether or not the respondents’ answer scores were equal to, or less than, the total P_{75} score, or greater than the P_{75} score. Table 4.3 illustrates that 41.7% of the respondents had low intentions, and 58.3% had high intentions.

Table 4.5 Number and percentage of the respondents by intention regarding use of basic ANC practice guidelines

Intention regarding use of basic ANC practice guidelines	**Number**	**Percent**
Low	60	41.7
High	84	58.3
Min.= 12 Max.= 21 Median = 21.0 QD = 1.5		

Score : Low ≤ P_{75}, High > P_{75}

4.6 Advantages and disadvantages of using basic ANC practice guidelines

This data was gathered from 3 open-ended questions. Table 4.4 illustrates that 91.6% of the respondents said by using basic ANC practice guidelines they could detect early pregnancy complications; 20.1% of respondents thought that they could easily follow the guidelines, and could follow the guidelines systematically. Following these guidelines, they felt more confident to provide ANC for the patients. 21.5% of respondents said they could make an accurate diagnosis, and also could give appropriate treatment or action, such as referral to an obstetrician after detecting pregnancy complications.

52.1% of the respondents wrote that it took a long time to apply the basic ANC practice guidelines. As a consequence, the patients also felt uncomfortable waiting. However, 27.1% of the respondents said there were no disadvantages doing basic ANC practice guidelines.

Table 4.6 Number and percentage of the respondents' opinions by advantages, disadvantages of using basic ANC practice guidelines and the government supports

General information	Number	Percent
Advantages of using basic ANC practice guidelines*		
- Early detection of pregnancy complications	132	91.6
- Following guidelines systematically generate more confidence in making accurate diagnose.	29	20.1
- Can give appropriate treatment or refer to an obstetrician after detecting pregnancy complications.	31	21.5
- Can decrease maternal morbidity and mortality.	9	6.3
- Can follow up the progress of pregnancy and also the nutrition status of mother and baby.	18	12.5
- Can make patients more satisfied with the services and have more trust in midwives.	10	6.9
- Ensures thorough preparation for delivery and awareness of all risks of pregnancy.	7	4.9

Table 4.6 Number and percentage of the respondents' opinions by advantages, disadvantages of using basic ANC practice guidelines and the government supports (cont.)

General information	Number	Percent
Disadvantages of using basic ANC practices guidelines*		
- No disadvantage of using basic ANC practice guidelines	39	27.1
- Need a long time to follow the basic ANC practice guidelines	75	52.1
- Difficult to follow and basic ANC practice guidelines are not efficient and effective.	6	4.2
- Need a lot of equipment and facilities and incur more expense.	4	2.8
- Patients feel more worried and uncomfortable knowing about their complications.	9	6.3
Support from government*		
- Training about ANC regularly and frequently.	77	53.5
- Complete equipment and laboratory facilities for following basic ANC practice guidelines.	83	57.6
- Supervision and appraisal program	72	51.4

***** multiple answer

4.7 Association between study factors and intention of midwives

4.7.1 Correlation Analysis

Correlation analysis was used to determine the relationship between socio demographic factors (age, years of working, working hours and in-service training experience, attitudes, subjective norms, perceived behavior control and intentions regarding use of basic ANC practice guidelines. The results are shown in Table 4.7.

Table 4.7 Correlation coefficients between the numerical independent variables and score of intention regarding use of basic ANC practice guidelines

Variables	Coefficient	P-value
- Age	0.117	0.164
- Years of working in maternity division	0.116	0.173
- Working hours/week	-0.087	0.301
- In-service training experiences	-0.078	0.353
- Attitudes	0.237	0.004*
- Subjective Norms	0.456	<0.001*
- Perceived Behavior Control	0.065	0.438

*Significant at $p< 0.05$

There were significant and positive associations between attitudes, subjective norms and intention regarding use of basic practice guidelines (p-value = 0.004 and p-value = <0.001 respectively). The respondents who had higher attitude and subjective norm scores also had higher intention scores. The strongest correlation coefficient was subjective norms ($\beta = 0.456$, p-value = <0.001). However, the other factors were not significantly associated with the intention scores.

4.7.2 Chi-Square Test

Table 4.8 Association between socio-demographic factors and intentions of midwives regarding use of basic ANC practice guidelines

Variables	n	Intention		Crude OR	95% CI OR	Chi-Square p-value
		Low (%)	High (%)			
Age groups						
20-39 years	69	50.7	49.3	1.00	1.05 - 4.04	**0.034***
40-59 years	75	33.3	66.7	2.06		
Academic Education levels						
≥ 3 years academic	101	38.6	61.4	1.52	0.74 – 3.12	0.256
1 year academic	43	48.8	51.2	1.00		
Years of working in maternity division						
≤ 17 years	98	47.9	52.1	1.00	1.17 – 5.74	**0.017***
> 17 years	42	26.2	73.8	2.60		
Working hours/week						
≤ 30 hours	56	33.9	66.1	1.62	0.80 – 3.25	0.174
> 30 hours	86	45.4	54.6	1.00		
Training experiences						
No Training	84	41.7	58.3	1.00	0.51 – 1.96	1.000
Have Training	60	41.7	58.3	1.00		
Marital Status						
Single	16	56.3	43.7	1.00		
Married/Divorce/ widow	128	39.8	60.2	1.94	0.68 - 5.54	0.213
Having children						
Yes	120	38.3	61.7	2.09	0.85 – 5.16	0.107
No	23	56.5	43.5	1.00		

* Significant at $p < 0.05$

Chi-square tests were used to identify significant associations (p-value of less than 0.05) between socio-demographic factors, attitudes, subjective norms, and perceived behavior control, respectively, and midwives' intentions regarding use of basic ANC practice guidelines. The results are shown in Tables 4.8 and 4.9.

In chi-square tests, in-service training experience was categorized into two groups, "no training group" and "have training group". Academic education level was categorized into 2 groups, "≥ 3 years midwifery academy" and "1 year midwifery academy". As well as in marital status was divided into 2 groups, "single" and "married/divorced/widow".

With regard to socio-demographic factors, the age was associated with intention regarding use of basic ANC practice guidelines. Older midwives tended to have 2 times more high intention than younger midwives (p-value = 0.034). The results also indicated that there was a significant association between work duration in maternity divisions and intention regarding use of basic ANC practice guidelines. Midwives with more than 17 years experience working in maternity divisions tended to have more a high intention regarding use of basic ANC practice guidelines than those with less than 17 years working experience (p-value = 0.017). Other socio-demographic factors (working hours/week, academic education levels, in-service training experience, marital status, and having own children) did not show any association with intention regarding use of basic ANC practice guidelines.

There was an association between the respondents' attitudes regarding use of basic ANC practice guidelines and intention regarding use of basic ANC practice guidelines. Those who had positive attitudes towards using basic ANC practice guidelines tended to have a more high intention regarding their use than those who had negative attitudes (p-value = 0.002).

With regard to subjective norms, there was an association between subjective norms regarding use of basic ANC practice guidelines and intention regarding their use. Those who had high subjective norms tended to have more high intentions regarding use of basic ANC practice guidelines than those who had low subjective norms (p-value = 0.006). However with regard to perceived behavior

control, the results showed that there was no association between perceived behavior control to use basic ANC practice guidelines and intention regarding their use.

Table 4.9 Association between attitudes, subjective norms, perceived behavior control and intention regarding use of basic ANC practice guidelines

Variables	n	Intention		Crude OR	95% CI OR	Chi-Square p-value
		Low (%)	High (%)			
Attitudes						
Negative attitude	**102**	**50.0**	**50.0**	**1.00**		
Positive attitude	**42**	**21.4**	**78.6**	**3.67**	**1.59 – 8.43**	**0.002***
Subjective norms						
Low SN	**108**	**48.2**	**51.8**	**1.00**		
High SN	**36**	**22.2**	**77.8**	**3.25**	**1.36 – 7.77**	**0.006***
Perceived behavior control						
Low Perceived	**107**	**42.9**	**57.1**	**1.00**		
High Perceived	**37**	**37.8**	**62.2**	**1.24**	**0.58 – 2.67**	**0.584**

*Significant at $p < 0.05$

4.8 Factors relating to intention

Multiple logistic regression analysis was used to identify independent variables that were statistically significant determinants of high intention regarding use of basic ANC practice guidelines. Table 4.8 illustrates the results when some independent variables identified as significant by chi-square tests were included in the multiple logistic regression analysis (i.e. years of working in maternity divisions,

attitudes and subjective norms). However, the age group which was significant in chi-square test, was not included in the multiple regression model because the age variable correlated to the years of working in maternity divisions. If the age group of respondents was included in the multiple regression model, it would distort the result of other variables as shown in Table 1 of appendix.

Table 4.10 The Multiple logistic regression model of intention regarding use of basic ANC practice guidelines

Factors	**High Intention regarding use of basic ANC practice guidelines**		
	Adj. odds ratios	**95 % CI**	**P-value**
Years of working in maternity division			
≤ 17 years	**1.00**		**0.029***
> 17 years	**2.52**	**1.10 – 5.78**	
Attitudes			
Negative attitudes	**1.00**		
Positive attitudes	**3.01**	**1.21 – 7.52**	**0.018***
Subjective Norms			
Low subjective norms	**1.00**		
High subjective norms	**2.50**	**0.98 – 6.35**	**0.055**

*Significant at p< 0.05

Using multiple logistic regression, there were significant associations found between years of working in maternity divisions, attitudes and high intention regarding use of basic ANC practice guidelines, when adjusted for other factors in the model.

As shown in Table 4.8, when applying multiple logistic regression analysis to the model, only the following factors were found to be statistically associated with high intention regarding use of basic ANC practice guidelines: years of working in maternity divisions, and attitudes (p-value = 0.029 and 0.018 respectively).

The results showed that attitudes were the strongest predictor for midwives' intentions regarding use of basic ANC practice guidelines. Midwives who indicated that they had positive attitudes were 3 times more likely to have high intentions than those who stated that they had negative attitudes, after adjusting for the other factors in the model.

In this study, analysis of the relationship between intention and independent variables were also conducted by multiple linear regression test. However, the two important assumption of multiple regression analysis: normality and homoscedasticity (equal variance) were violated (see graph and Table 2 of Appendix). This happened may due to the number of the variables scores which were calculated were rating scale.

CHAPTER V
DISCUSSION

This cross-sectional study was conducted among midwives aged 21 to 56 years old working in community health centers and public hospitals in Palembang, Indonesia. The questionnaire comprised 47 structured questions concerning socio-demographic factors, attitudes, subjective norms and perceived behavior control of midwives regarding use of basic ANC practice guidelines. The study's aim was to determine the factors influencing the intention of midwives regarding use of basic ANC practice guidelines, and to get a better understanding of the relationship between midwives' intentions in this regard and various factors such as their socio demographic characteristics, attitudes, subjective norms, and perceived behavior control regarding use of basic ANC practice guidelines.

Although many factors may influence midwives' intentions, this study focused on the following selected factors:

1. Intention of midwives regarding use of basic ANC practice guidelines
2. Socio-demographic factors
3. Attitudes
4. Subjective norms
5. Perceived behavior control

5.1 Intentions of midwives regarding use of basic ANC practice guidelines

In this study, it was found that 58.3% of the respondents had high intentions and 41.7% had low intentions regarding use of basic ANC practice guidelines.

This can be compared with Kortteisto's study (41) which found that the intention to use clinical practice guidelines in decision making for patient care was more often positive than negative intention. Kortteisto's study showed 18% of the respondents indicated absolutely positive and 30% positive intention, while only 1% indicated absolutely negative and 4% negative views, and the rest were in probably positive or negative and neither negative nor positive groups. Moreover, Tedja's study (10) in Palembang found that 57.1% of the respondents did not agree with those guidelines and only 42.9% agreed. That research also found that only 40.5% of the respondents followed the ANC basic practice guidelines and 59.5% did not. The increased percentage of midwives with high intention regarding use of basic ANC practice guidelines in the present study showed an improvement in midwives' intentions or perceptions regarding to use of basic ANC practice guidelines in Palembang.

5.2 Socio-demographic characteristics

The present study also demonstrated that the age of the respondents and their years of working in maternity division were positively associated with their intentions regarding use of basic ANC practice guidelines.

Other socio-demographic factors such as academic education level, working hours/week, in-service training experience, marital status, and having children did not exhibit any association with the midwives' intentions regarding use of basic ANC practice guidelines. The findings in Palembang were similar to Kathleen Reeve's study (32) in Texas concerning factors influencing the intention of NPs to follow the practice guidelines. It is also part of the Theory of Planned Behavior (TPB) that personality traits, intelligence, socio-demographic variables, values, and other variables of this kind are considered "background factors" in the TPB. They are not neglected but assumed to influence intentions and behavior indirectly by affecting behavioral, normative, and/or control beliefs (31).

5.2.1 Age groups of midwives

Chi-square tests showed that older midwives (i.e. those 40-56 years old) had high intentions regarding use of basic ANC practice guidelines than younger midwives. In Sarwono's study in Yogyakarta (36), older persons liked making friends and were friendlier to everyone. Hartono's study (37) also found that older and maturer midwives had stronger intentions regarding their work.

The results of the present study were different from Kathleen Reeve's study (32). In her study, Chi-square tests were used to examine the relationships between intention and NPs' gender, ages, types of certification, degrees, practice locales, and number of years in practice. No significant relationships were found between intention and NP gender, age, practice locale, or years in practice. Moreover, Tedja's previous study in Palembang also found no significant relationship between age and the adherence to, and perception of, midwives basic ANC practices guidelines (10).

In this study, using correlation analysis there was no statistically significant association between age and intention of midwives but it did show that age was positively associated with intention scores. Older midwives generally had higher intention scores. On the other hand, there were significant correlations between age and perception in Al-Ateeq's study in Virginia, U.S.A (38). Most of the nurses were female (93.2%). Their ages ranged from the 20's to the 60's, and the most common age range was 45 to 54 years (29.7%) and 25 to 34 (27%). Only 6.8% were aged 25 years or less and 14.2% were 55 years old, or more. The correlation between age and perception of the eight attributes of work environment was positively and significantly associated with five attributes, nurse/physician (RN/MD) relationships ($r = 0.302$, $p < 0.01$), support for education ($r = 0.244$, $p < 0.01$), autonomous nursing practice ($r = .222$, $p < .01$), nurse-manager support ($r = .233$, $p < 0.01$), and a culture that values concern for the patient ($r = 0.263$, $p < 0.01$). The results showed that support for education, autonomous nursing practice, nurse-manager support, and a culture that values concern for the patient was affected by age (38).

The age variable was not included in the multiple regression model of intention regarding use of basic ANC practice guidelines because it was correlated to the years of working in maternity divisions. If the age group of respondents was included in the multiple regression model, it would distort the result of other variables as shown in Table 1 of appendix.

5.2.2 Years of working or work duration in maternity division

Midwives' years of working in maternity divisions were also associated with their intentions regarding use of basic ANC practice guidelines. Midwives with longer years of working in maternity divisions had high intentions than those who had had fewer years experience in maternity divisions. Suganda's study in Jakarta (33) showed that long years of working increased the self esteem and skill of midwives. Hanifi's study in Bogor (34) found that there was a positive relationship between long years of working and their performance in their work. Anderson (35) also found that longer years of working can increase capabilities or skills and intention to do the work better than before.

When using multiple logistic regression analysis to test for statistically significant predictors of high intentions regarding use of basic ANC practice guidelines, it was found that midwives' years of working in maternity divisions had a significant association with intentions. The findings showed that midwives who had been working more than 17 years were 2.6 times more likely to have high intentions regarding use of basic ANC practice guidelines. This observation illustrates that a midwife's years of working in maternity divisions is a determinant factor and can strongly influence intention regarding use of basic ANC practice guidelines. This finding was contrary to that of Tedja in Palembang in 2001, which found no association between years of working in maternity divisions and adherence of midwives to basic ANC practice guidelines (10). Moreover, Kathleen Reeve's study found no significant relationship between intention and NPs' years in practice (32).

In the present study, when using correlation analysis, there was no statistically significant association between years of working in maternity divisions and intentions, but it was shown that years of working was positively associated with intention. Midwives who had longer years of working had higher intention scores. On the other hand, study in Virginia, showed a correlation between years of experience in a current position and the eight attributes of the work environment. Al-Ateeq's result suggested a negative correlation with four attributes: control of and over nursing practice ($r = -0.182$, $p < 0.05$), perceived adequacy of staffing ($r = -0.212$, $p < 0.05$), working with other nurses who are clinically competent ($r = -0.182$, $p < 0.05$), and nurse-manager support ($r = -0.177$, $p <0.05$) suggesting that the years of experience in current position was inversely related to the work environment (38).

5.2.3 Academic education level

The findings of this study showed that academic education level was positively associated with intention. Those midwives with more than 3 years midwifery academic tended to have 1.52 times high intentions than the those who had had only one year. However, there was no statistical significant association between education and intention regarding use of basic ANC practice guidelines.

This result was inconsistent with Al-Ateeq's study in Virginia (38) which found that level of education was negatively and significantly associated with six attributes, support for education ($r = -0.306$, $p < 0 .01$), autonomous nursing practice perceived ($r = -0.210$, $p < 0.05$), adequacy of staffing ($r = -0.256$, $p < 0.01$), working with other nurses who are clinically competent ($r = -0.274$, $p < 0.01$), nurse-manager support ($r = -0.343$, $p < 0.01$), and a culture that values concern for the patient ($r = -0.293$, $p < 0.01$). These results suggest that educational level was inversely related to nurse perceptions of work environment.

5.2.4 Working hours/week

Although there was no significant statistical association between working hours per week or workload and the midwives' intentions, there was nevertheless a strong association with intention. Those with fewer working hours per week or lighter workloads were 1.62 times more likely to have high intention than midwives with more working hours or greater workloads. This result is inconsistent with Tedja's study in Palembang in 2001. Tedja suggested that there was a significant association between workload and the adherence to ANC guidelines and perception of midwives (p-value = 0.032). Midwives who had lighter workloads were 2.64 times more likely to follow basic ANC practice guidelines (10).

5.2.5 In-service training experiences

In correlation analysis, this study found that in-service training experience was inversely associated with intention; midwives who had had less training had higher intention scores. Makowiecka's study in Indonesia (39), suggested the 1-year midwifery training program was of questionable quality, inadequate duration and, because of a combination of the high number of midwives being trained, low fertility and low use of facilities, many midwives received virtually no experience of managing a delivery during their training. Small scale evaluations suggest that midwives who qualified under this scheme did not have the skills or knowledge needed to perform their midwifery duties effectively.

In Makowiecka's study almost all (98%) village-based and (94%) health centre midwives had assisted women around the time of delivery over the preceding 3 months, while fewer than half of the nurses (46%) had done so. Of those who had attended women during labour, delivery or the immediate postpartum period, the total number attended was very low, with a median of 10 (IQR: 6–18) over 3 months. Nurses assisted fewest deliveries (median: 3, IQR: 2–7) and hospital midwives the most assisted deliveries (median: 20, IQR: 9–50) ($P<0.001$) (39). The low obstetric workload of midwives compromises their professional capacity through lack of skill maintenance.

The study above, perhaps, explains why the present study found that in-service training was not significantly associated with intention. Training quality of midwives in Indonesia is still questionable. Training objectives are often unclear and if training programs can be revised to focus on attitude improvements, midwives may be expected to develop stronger intentions to use the ANC practice guidelines. The present study also revealed that only the maternity division leaders tended to receive training opportunities. Training programs, therefore, should be expanded to include all midwives.

5.3 Attitudes to using of basic ANC practice guidelines.

The midwives who had positive attitudes to use basic ANC practice guidelines were more likely to have high intentions regarding use of basic ANC practice guidelines than those who had negative attitudes (p-value = 0.002). When testing this association using multiple logistic regression, it was found that positive attitudes were significantly associated with intention (p-value = 0.018) when adjusted for other factors in the model. The findings showed that midwives who had positive attitudes were 3 times more likely to have high intentions regarding their use. This suggests that attitudes directly influence intentions to use basic ANC practice guidelines.

Using correlation analysis, it was found that attitude scores were positively and significantly associated with intention scores (r = 0.237, p-value = 0.004). Those who had higher attitude scores also had higher intention scores.

This finding was the same as reported in Reeve's study in Texas (32). As previously stated, the recommendations of Ajzen and Fishbein guided the instrument developed for Reeve's study. Bivariate correlations were conducted to assess the associations between the independents variables and intention. Texas NPs who had positive attitudes, identified social support, and had the necessary internal and external resources expressed greater intentions of engaging in health promotion activities with their patients. Texas NPs had very positive attitudes about health promotion; however, their attitudes to health promotion appeared to be more positive than the reported

practices would suggest (32). Other research by Emeis about CNMs' intentions to counsel and prescribe emergency contraception to women in Colorado, U.S.A (40), showed that they had positive attitudes toward emergency contraception as a method of reducing unintended pregnancies. This is reflected in the frequency with which they counselled and prescribed emergency contraception.

5.4 Subjective norms regarding use of basic ANC practice guidelines.

The findings from the present study illustrated that subjective norms regarding use of basic ANC practice guidelines are significantly associated with intention regarding their use. Midwives who had high subjective norms tended to have high intention than those with low subjective norms (p-value = 0.006). Multiple logistic regression identified statistically significant predictors of high intention regarding use of basic ANC practice guidelines, but no statistically significant association was found between subjective norms and high intention (p-value = 0.055). Nevertheless, there was still a strong association between subjective norms and high intention. The present study demonstrated that midwives who high subjective norms were 2.5 times more likely to have high intention regarding use of basic ANC practice guidelines than those with low subjective norms.

Using correlation analysis, it was found that subjective norm scores were positively and significantly associated with intention scores (r = 0.456, p-value = <0.001). Those with higher subjective norm scores had higher intention scores. Emeis also showed that attitudes towards behavior, subjective norms, and perceived behavior control were found to significantly predict the intentions of CNMs (40). In table 9, it shows that the strongest correlation coefficient was subjective norms (β = 0.456, p-value = <0.001). Kortteisto's study about health professionals' intentions to use clinical guidelines, also found that the strongest factor for the physicians was the perceived behaviour control, while the key factor for the nurses and the other professionals was the subjective norms. This means that context- and guidelines-based factors either facilitate or hinder the intention to use clinical guidelines among

physicians and, correspondingly, normative beliefs related to social pressures do so for nurses and other healthcare professionals (41).

Subjective norms reflect the perception of a person of the social pressures from important others to perform or not to perform a particular behavior. It is a function of belief about the expectations of others (normative beliefs) and an individual's tendency to live up to these others' expectations (motivation to comply). Important others can be parents, teachers, peers, doctors, etc.(43). Moreover, in a national survey of NPs (32) in Texas, many NPs responded that it was useless to counsel patients about physical activity because they would not follow through with the recommendations. As found in other studies, a frequently cited barrier to health promotion by Texas NPs was a lack of patient desire to change. Unfortunately, reimbursement for health promotion is generally low, which can negatively influence the provision of preventive care. Reimbursement for the recommended clinical preventive services frequently ranged from 30% to 58%. Texas NPs agreed that the lack of reimbursement for health promotion did influence their practice. In fact, several NPs felt so strongly about this issue that they telephoned the investigator to encourage dissemination of the statistics gathered in this survey to policy makers in a position to effect change in the reimbursement system.

5.5 Perceived behavior control regarding use of basic ANC practice guidelines

The present study illustrates that perceived behavior control is strongly associated with intention, although there is no statistically significant. Midwives with high perceived behavior control were 1.24 times more likely to have high intentions than those with low perceived behavior control. Using correlation analysis, even though the perceived behavior control score was not statistically significant associated with intention scores, it was still positively associated. Midwives who had higher perceived behavior control scores also had higher intention scores.

In Walsh's study (46) stated that generally, attitudes or perceived behaviour control (PBC) are not the strongest predictors on the intention (47). In his study, attitudes and subjective norms were the strongest predictors. The strong normative influence found in the Walsh's study was important, particularly when other health professional recommendations and use of medication for disease management were considered. Therefore the strength of normative influences on intention could explain the lack of influence from PBC decision making (46). In this present study, it also shows that the subjective norms or normative belief and attitudes are the strongest predictors on midwives' intention regarding use of basic ANC practice guidelines. The reason for this could be that a majority of midwives in Indonesia depend on a physician's recommendation and the use of medication for disease management, especially for pregnant mothers who are having complications. It was also supported by the lack of trainings about ANC given to midwives who want to improve their skills and confidences. By increasing the quality and number of trainings, it may enhance midwives' perceived behaviour control but this needs to be accompanied by organizational changes, such as widening the range of equipment and facilities available (48).

This study result was inconsistent with some previous studies. Erneis's study about CNMs' intentions to counsel and prescribe emergency contraception to women in Colorado also showed that perceived behavior control was found to be a significant predictor of intention (40). This same result was also found in Reeve's study in Texas (32).

5.6 Methodological concerns

The present study was conducted using midwives who worked in community health centers and public hospitals in Palembang District, Indonesia. A self administered-structured questionnaire was designed to collect the data from those midwives agreeing to participate in the study. The researcher visited the community health centers and public hospitals to explain to them how to answer the questionnaires and the purpose of the study. This methodology also aimed to reduce

the likelihood of collecting incomplete data from the participants. The study only covered government sector personnel in community health centers and public hospitals. Accordingly, its results cannot be generalized to the private sector.

The structured questionnaire was constructed based on the TPB, a manual for health service researchers (45). However the perceived behavior control part got only 0.59 in the reliability test, perhaps due to some errors in translation from English to Indonesian, it might be suggested that the perceived behavior control part was not reliable enough to measure the actual perceived behavior control of the respondents in this study.

In this research used the multiple logistic regression because it is more flexible then other techniques. Unlike multiple regression analysis which should has distributional requirements for predictors, logistic regression cannot produce negative predicted probabilities. Moreover, it has no assumptions about the distributions of the predictor variables because they do not have to be normally distributed, linearly related, or of equal variance within each group (49).

Data were only gathered by self-administered questionnaire and lack of time and other resources prevented observation of actual practice. This study also only focused on socio-demographic factors, attitudes, subjective norms, and perceived control behavior. Other factors that influence the midwives' intentions regarding use of the basic ANC practice guidelines such as personality traits and intelligence would have needed more time and financial resources to investigate. This study could only consider midwives' intentions to use the ANC practice guidelines in community health centers and public hospitals in Palembang. Nor could it include the private sector because private sector personnel operate in a very different work environment and under different regulations. Finally, there is relatively little published research in this area making it difficult to compare these findings with those of other comparable studies.

CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This cross sectional study was conducted at community health centers and public hospitals in Palembang in 2011. The aim of this study was to determine the intention of midwives regarding use of basic ANC practice guidelines and identify the factors related to midwives' intentions such as socio- demographic factors, attitudes, subjective norms, and perceived behavior control.

Fifty two per cent of the respondents were between 40 and 59 years old. The median age was 40 years, the minimum age was 21 years, and the maximum age was 56 years.

With regard to work duration or years of working, 70% of the respondents had worked in maternity divisions for less than 17 years. The longest working hours were 60 hours/week, and 60.6% of the respondents worked more than 30 hours/week. With regard to academic education levels, 65% of the respondents had had 3 years of midwifery academic. For in-service training experience, 58% had not had training about ANC. About 83% of the respondents were married and 84% had children.

With regard to attitudes, 71% of the respondents had negative attitudes with regard to using basic ANC practice guidelines, and 75% had low subjective norms regarding use of basic ANC practice guidelines. More than 70% of the respondents were in the low perceived behavior control group regarding use of basic ANC practice guidelines. However, 58% had high intentions regarding use of basic ANC practice guidelines.

Based on correlation analysis, attitudes and subjective norms were significantly associated with intentions of the midwives (P-value = 0.004 and <0.001).

Midwives who had higher attitudes and subjective norms scores had higher intention scores regarding use of basic ANC practice guidelines.

Based on Chi-square tests, age and years of working had a statistically significant association with midwives' intentions regarding use of basic ANC practice guidelines. Older midwives (i.e. aged 40-59 years) were two times more likely to have high intentions compared to those who were younger. With regard to work duration in maternity divisions, midwives who had worked for more than 17 years were three times more likely to have high intentions compared to those who worked less than 17 years.

With regard to attitudes of midwives, using Chi-square tests, there was a statistical significant association between attitudes and midwives' intentions (P-value was 0.002). Midwives having positive attitudes were 3.7 times more likely to have high intentions compared to those with negative attitudes. Also, subjective norms regarding use of basic ANC practice guidelines was significantly associated with midwives' intentions (P-value was 0.006), and the midwives who had high subjective norms were three times more likely to have high intentions compared to those with low subjective norms.

In multiple logistic regressions, attitudes had a statistical significant association with midwives' intentions (P-value was 0.018). The midwives having positive attitudes were about three times more likely to have high intentions compared to those with negative attitudes, when adjusted with other factors such as years of working and subjective norms.

6.2 Recommendations for midwives, community health centers and public hospitals

It was found that more than half midwives had not had any training about ANC practice guidelines. Two-third of midwives had years of working less than 17 years and almost half midwives been in young age. Majority of midwives asked to the government to complete equipment and laboratory facilities for practicing basic ANC

practice guidelines and to give a supervision and appraisal program for midwives who performance proper basic ANC practice guidelines.

Based on the findings of this study recommendations are suggested as follow:

1. Policy makers (i.e. the chiefs of district health office and district hospitals) should increase the frequency and quality of training about ANC for midwives, especially for new and young staff. This will also promote positive attitudes towards the use of basic ANC practice guidelines which enable midwives to detect early complication in pregnancy.

2. Government should provide complete equipment and laboratory facilities for practicing basic ANC practice guidelines, and these should be provided in every community health center and public hospital.

3. The chiefs of district health office and district hospitals should support supervision and appraisal programs for midwives who implement ANC practice guidelines.

Recommendations for the head of community health centers

1. Provide more training about ANC for midwives, especially for new and young staff.

2. Maintain equipment and facilities which support ANC services routinely.

3. Provide supervision and appraisal programs for midwives who implement ANC practice guidelines.

Recommendations for further research

1. This study was conducted in one district in Indonesia. Future research to evaluate what affects the intentions of midwives regarding use of basic ANC practice guidelines should be undertaken in other districts and other provinces in Indonesia.

2. A follow-up and an observation study should be conducted to identify the actual practice of midwives in using basic ANC practice guidelines.

3. Qualitative research using in depth-interviews should be utilized to acquire a more complete understanding of the factors related to the intentions of midwives regarding use of basic ANC practice guidelines.

4. This study was conducted only in government facilities. Future research to evaluate what affects the intentions of midwives regarding use of basic ANC practice guidelines should be undertaken in private facilities so the results can be generalized to all sectors.

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APPENDICES

APPENDIX A
QUESTIONNAIRES

Intention of Midwives Regarding Use of Basic ANC Practice Guidelines in Palembang, Indonesia

We are conducting a study of midwives in community health centers of Palembang Districts. The purpose of this study is to increase the intention of midwives in using the basic ANC practice guidelines to enable early detection of pregnancy complications and decrease maternal mortality and morbidity rates. We are also interested in the reasons why midwives do or do not use the 10 step basic ANC practice guidelines to pregnant women. We would appreciate your responses to the questions about this. There are no right or wrong answers. Please tell us what you really think. All your information will be kept confidential and use for this research only. The reports will **not** be written as an individual report for each respondent but it will be reported as the overall results from all respondents.

PART 1 (SOCIO-DEMOGRAPHIC FACTORS)

Please fill in the blank

About your BACKGROUND

1. How long have you been working in the maternal division? ……..**Years**

   How many hours do you work in the maternal division per week?.....**Hours/week**

2. How old are you? …….**Years**

3. What is your educational background?.....

4. How many times per year you get training regarding ANC basic practice guidelines during the past 2 years? .....**Times/year**

5. Are you married? ☐ **Single** ☐ **Married** ☐ **Widow/Divorce/Separate***

6. Did you have own biological children? ☐ **Yes** ☐ **No**

* please choose only one answer and the others is crossed

Each question in these parts refers to using the 10 step basic ANC practice guidelines during a prenatal care.

PART 2 Attitudes of midwives towards using basic ANC practice guidelines

Please circle the number that reflects your answers.

1 If I use the 10 step basic ANC practice guidelines, I will feel that I am doing something positive for the patient — **Unlikely 1 2 3 4 5 6 7 Likely**

2 It causes a lot of worry and concern for a pregnant women if they are found to have high risks or complications in pregnancy — **Unlikely 1 2 3 4 5 6 7 Likely**

3 If I use the 10 step basic ANC practice guidelines; I will detect any problems at an early stage. — **Unlikely 1 2 3 4 5 6 7 Likely**

4 If I use the 10 step basic ANC practice guidelines, I've got to see patients more often — **Unlikely 1 2 3 4 5 6 7 Likely**

5 Doing something positive for the patient is — **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

6 Worry and concern experienced by patients if they are found to have high risks or complications in pregnancy is — **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

7 For these patients, detecting problems at an early stage is — **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

8 Seeing patients more often is **Extremely undesirable -3 -2 -1 0 +1 +2 +3 Extremely desirable**

9 Overall I think that using the 10 step basic ANC practice guidelines is **Useless 1 2 3 4 5 6 7 Useful**

10 Overall I think that using the 10 step basic ANC practice guidelines is **Pleasant 1 2 3 4 5 6 7 Unpleasant**

11 Overall I think that using the 10 step basic ANC practice guidelines is **The wrong thing to do 1 2 3 4 5 6 7 The right thing to do**

12 Overall I think that using the 10 step basic ANC practice guidelines is **Good practice 1 2 3 4 5 6 7 Bad practice**

Part 3 Subjective Norms of midwives to use basic ANC practice guidelines

Please circle the number that reflects your answers.

1 The head of community health centers or obstetricians think I **should not -3 -2 -1 0 +1 +2 +3 should use the practice guidelines 10 step basic ANC**

2 Patients would **disapprove -3 -2 -1 0 +1 +2 +3 approve of my using the 10 step basic ANC practice guidelines to their pregnancy.**

3 Other midwives **do not -3 -2 -1 0 +1 +2 +3 do use the 10 step basic ANC practice guidelines.**

4 The government **would disapprove -3 -2 -1 0 +1 +2 +3 approve of my using the 10 step basic ANC practice guidelines.**

5 Doing what GPs or obstetricians think I should do is important to me **Not at all 1 2 3 4 5 6 7 Extremely**

6 The approval of my patients is important to me **Not at all 1 2 3 4 5 6 7 Extremely**

7	Doing what other midwives do is important to me	**Not at all 1 2 3 4 5 6 7 Extremely**
8	The government's approval of my clinical practice is important to me	**Not at all 1 2 3 4 5 6 7 Extremely**
9	People who are important to me think that I should NOT use the 10 step basic ANC practice guidelines to pregnant women.	**Strongly 1 2 3 4 5 6 7 Strongly disagree agree**
10	I feel under social pressure to use the 10 step basic ANC practice guidelines of these patients	**Strongly 1 2 3 4 5 6 7 Strongly disagree agree**
11	It is expected of me that I use the 10 step basic ANC practice guidelines of these patients	**Strongly 1 2 3 4 5 6 7 Strongly disagree agree**

Part 4 Perceived behavior control of midwives to use basic ANC practice guidelines

Please circle the number that reflects your answers.

1	The equipment* which support for prenatal care I use is not very accurate	**Unlikely 1 2 3 4 5 6 7 Likely**
2	When I am using the 10 step basic ANC practice guidelines in the prenatal care I feel rushed	**Unlikely 1 2 3 4 5 6 7 Likely**
3	The equipment of prenatal care is uncomfortable for patients	**Unlikely 1 2 3 4 5 6 7 Likely**
4	Patients come to the prenatal care Inappropriately dressed to have their pregnancy checked using the 10 step basic ANC practice guidelines	**Unlikely 1 2 3 4 5 6 7 Likely**

5	I am	**Less likely -3 -2 -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if the equipment that I use is accurate**
6	I am	**Less likely -3 -2 -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if I feel rushed in the consultation.**
7	I am	**Less likely -3 -2 -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if the equipment are uncomfortable.**
8	I am	**Less likely -3 -2 -1 0 +1 +2 +3 More likely to use the 10 step basic ANC practice guidelines if they come to the consultation inappropriately dressed to have their pregnancy checked**.

* equipment refers to stethoscope, tensimeter, weight and height measurement, fetoscope or USG, measurement of diameter of upper arm and fundus uteri, speculum, obgyn bed.

9	I am confident that I can I use the 10 step basic ANC practice guidelines in the prenatal care if I want to.	**Strongly 1 2 3 4 5 6 7 Strongly disagree agree**
10	Whether I use the 10 step basic ANC practice guidelines of these patients in the prenatal care is entirely up to me	**Strongly 1 2 3 4 5 6 7 Strongly disagree agree**
11	For me to use the 10 step basic ANC practice guidelines of these patients in the prenatal care is	**easy 1 2 3 4 5 6 7 difficult**
12	When I am using the 3 additional steps (the 8 to 10 step)* of basic ANC practice guidelines in the prenatal care I feel difficult	**Strongly 1 2 3 4 5 6 7 Strongly disagree Agree**

*The 8 to 10 step including measuring upper arm diameter (nutrition status), knowing the lower uterine fetal presentation, and counting the fetal heart rate.

Part 5 Intention of midwives regarding using basic ANC practice guidelines

1	I expect to use the 10 step basic ANC practice guidelines of my patients in each prenatal care	**Strongly disagree** 1 2 3 4 5 6 7 **Strongly agree**
2	I want to use the 10 step basic ANC practice guidelines of my patients in each prenatal care	**Strongly disagree** 1 2 3 4 5 6 7 **Strongly agree**
3	I intend to use the 10 step basic ANC practice guidelines of my patients in each prenatal care.	**Strongly disagree** 1 2 3 4 5 6 7 **Strongly agree**

Part 6 Perceived of advantages and disadvantages of using the 10 step basic ANC practice guidelines.

Please take a few minutes to express your thoughts or opinions about the following questions.

Please fill in the provided space.

When pregnant women consult their midwives,

- What do you believe are the ***advantages*** of using the 10 step basic ANC practice guidelines during a prenatal care?
- What do you believe are the ***disadvantages*** of using the 10 step basic ANC practice guidelines during a prenatal care?
- What supports would you like to get from the government to help you to perform the basic ANC?

APPENDIX B

Table 1 The Multiple Logistic Regression model of intention regarding use of basic ANC practice guidelines

Factors	**High Intention regarding use of basic ANC practice guidelines**		
	Adj. odds ratios	**95 % CI**	**P-value**
Age groups			
21-39 years	**1.00**		
40-56 years	**1.02**	**0.42 – 2.46**	**0.967**
Years of working in maternity division			
≤ 17 years	**1.00**	**0.92 – 6.74**	**0.072**
> 17 years	**2.49**		
Attitudes			
Negative attitudes	**1.00**		
Positive attitudes	**3.01**	**1.20 – 7.53**	**0.019***
Subjective Norms			
Negative subjective norms	**1.00**		
Positive subjective norms	**2.49**	**0.96 – 6.46**	**0.062**

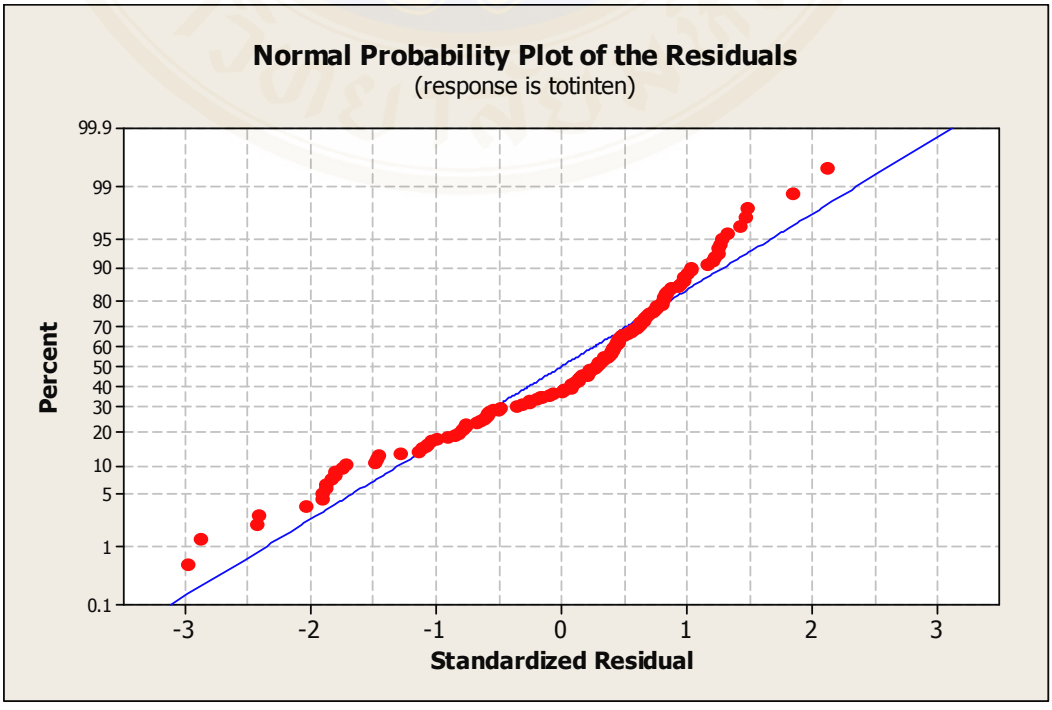
* Significant at $p < 0.05$

Table 2 Multiple Regression Analysis of intentions regarding use of basic ANC practice guidelines

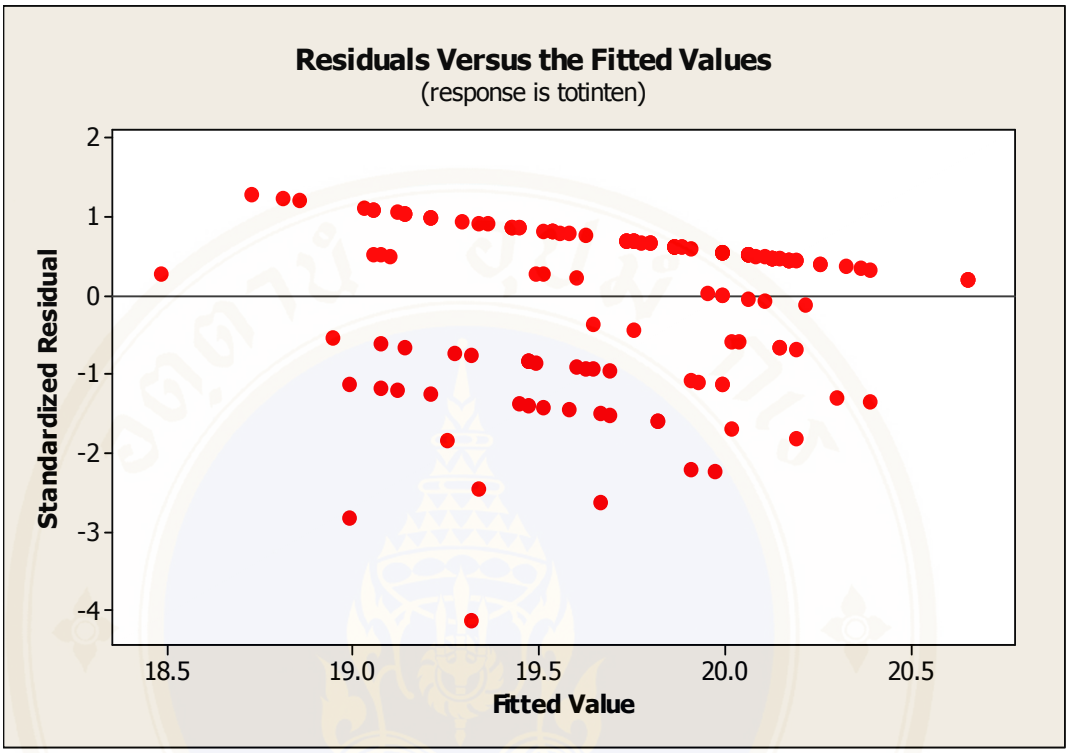
Factors	β	T	p-value
Socio demographic factors			
Age	-0.0058	-0.20	0.839
Academic education (1= ≥ 3 years academic)	-0.1161	-0.18	0.857
Years of working in maternity division	0.0202	0.67	0.501
Working hours per week	-0.0159	-0.71	0.476
In-service training experience	-0.3262	-2.11	**0.037***
Marital status (1= married/divorced/separated)	-0.2780	-0.38	0.705
Having children (1 = yes)	0.3086	0.45	0.656
Attitudes	0.0083	1.06	0.292
Subjective norms	0.0409	4.20	**<0.001***
Perceived behaviour control	-0.0013	-0.12	0.902

R2 adj = 12.3%

Normal probability plot of the residual (response is midwives' intentions)



Residual versus the fitted values (response is midwives' intentions)



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