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Intention of midwives to use basic ANC practice guidelines in the Palembang District of Indonesia

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ABSTRACT

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A cross-sectional study was conducted to identify the intention of midwives to use basic ANC practice guidelines in the Palembang district of Indonesia and to examine factors related to the intention. Using stratified sampling, 144 midwives were sampled from randomly selected community health centers and two public hospitals. Data were collected by a self-administered questionnaire during January and February, 2011. Chi-square tests and multiple logistic regression (MLR) were used to identify factors related to the intention of midwives.

Fifty-two percent of the midwives were between 40 and 59 years old and 70% had worked in maternity divisions for less than 17 years. As for in-service training experience, 58% had not had any antenatal care training. Most of the midwives (58.3%) had high intentions to use the basic ANC practice guidelines. By MLR, years of work and attitudes towards the use of the basic ANC practice guidelines each had a statistically significant association with the midwives' intention regarding use of the basic ANC practice guidelines. Midwives having positive attitudes were three times more likely to have high intentions than those having negative attitudes (Adj OR= 2.88, 95% CI=1.09 – 7.65) when adjusting for other factors in the model.

New staff members should be frequently trained to promote positive attitudes towards the use of the basic ANC practice guidelines which enable midwives to detect early complications in pregnancy.

Keywords Intention Midwives ANC practice guidelines Attitude

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ความตั้งใจของพยาบาลผดุงครรภ์ที่จะใช้คู่มือการปฏิบัติงานเบื้องต้นในการให้บริการฝากครรภ์ในตำบลปาเล็มบัง ประเทศอินโดนีเซีย

บทคัดย่อ

วีร่าวะตรี เออนิ จิราพร ชมพิกุล บุญยง เกี่ยวการค้า. ความตั้งใจของพยาบาลผดุงครรภ์ที่จะใช้คู่มือการปฏิบัติงานเบื้องต้นในการให้บริการฝากครรภ์ในตำบลปาเล็มบัง ประเทศอินโดนีเซีย. ว.สาธารณสุขและการพัฒนา, 2554; 9(3): 243-56.

การศึกษาแบบตัดขวางนี้ทำเพื่อศึกษาความตั้งใจของพยาบาลผดุงครรภ์ที่จะใช้คู่มือการปฏิบัติงานเบื้องต้นในการให้บริการฝากครรภ์ ในตำบลปาเล็มบัง ประเทศอินโดนีเซีย และค้นหาปัจจัยที่มีความสัมพันธ์กับความตั้งใจ โดยใช้การสุ่มตัวอย่างแบบชั้นภูมิจากสถานีอนามัยชุมชนและโรงพยาบาลของรัฐ 2 แห่ง ได้ตัวอย่างเป็นพยาบาลผดุงครรภ์ จำนวน 144 คน เก็บรวบรวมข้อมูลโดยใช้แบบสอบถามในช่วงเดือนมกราคมและกุมภาพันธ์ 2554 วิเคราะห์ข้อมูลโดยใช้ไคส์กำลังสองและการถดถอยลอจิสติกพหุคูณ

ผลการศึกษาพบว่า 52% ของพยาบาลผดุงครรภ์อายุระหว่าง 40-59 ปี 70% ได้ทำงานในหน่วยบริการงานอนามัยแม่และเด็กน้อยกว่า 17 ปี 58% ไม่เคยได้รับการฝึกอบรมเกี่ยวกับการให้บริการฝากครรภ์ พยาบาลผดุงครรภ์ส่วนใหญ่ (58.3%) มีความตั้งใจที่จะใช้คู่มือการปฏิบัติงานเบื้องต้นในการให้บริการฝากครรภ์ ผลจากการวิเคราะห์ถดถอยลอจิสติก แสดงว่าจำนวนปีที่ทำงาน และทัศนคติต่อการใช้คู่มือการปฏิบัติงานเบื้องต้นในการให้บริการฝากครรภ์มีความสัมพันธ์อย่างมีนัยสำคัญกับความตั้งใจที่จะใช้คู่มือฯ พยาบาลผดุงครรภ์ที่มีทัศนคติเชิงบวกต่อการใช้คู่มือฯมีแนวโน้มเป็น 3 เท่าที่มีความตั้งใจอย่างสูงที่จะใช้คู่มือนี้เมื่อเปรียบเทียบกับผู้มีทัศนคติเชิงลบ โดยได้ปรับด้วยตัวแปรอื่น ๆ ในแบบจำลองแล้ว (Adj OR = 2.88, 95% CI = 1.09 – 7.65)

พยาบาลผดุงครรภ์ที่เพิ่งเข้าปฏิบัติงานควรจะได้รับการฝึกอบรมเป็นประจำเกี่ยวกับการใช้คู่มือการปฏิบัติงานเบื้องต้นในการให้บริการการฝากครรภ์ เพื่อให้เกิดทัศนคติเชิงบวกต่อการใช้คู่มือฯและเพื่อช่วยให้พยาบาลผดุงครรภ์สามารถตรวจพบภาวะแทรกซ้อนของการตั้งครรภ์ได้ในระยะเริ่มต้น

คำสำคัญ ความตั้งใจ พยาบาลผดุงครรภ์ คู่มือการปฏิบัติงานในการให้บริการฝากครรภ์ ทัศนคติ

INTRODUCTION

Every minute, a mother dies because of complications during pregnancy and childbirth. In other words, 1,400 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. Indonesia, therefore, has 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 (MPS) program,[3] and the 10-step basic standards of Antenatal Care (ANC) as ANC practice guidelines 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.

In a study of maternal risk factors for hypertension syndromes in Brazil, the quality of ANC showed to be 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 exhibited complications resulting from blood pressure elevation.[5] By practicing and applying the basic ANC standards, midwives can detect problems in pregnant women as early as possible and can then give appropriate advice and offer appropriate interventions for them. Using basic standards can avoid severe problems and decrease the risk of maternal deaths and morbidity. As early as 1930, many people knew from a clinical guide to best obstetric practice that dangers to pregnant women were considered preventable. 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 immunizations; giving 90 ferum (Fe) tablets; giving laboratory tests for sexually transmitted diseases; dealing with all problems in pregnant women by giving appropriate advice or counseling and treatment in each case, and encouraging women to control their pregnancies routinely. In 2009, the government added three more steps to the basic ANC practice guidelines. These include 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, for example Hb, blood group, and protein and sugar urine.[4] Each of the 10-steps should be properly completed to detect early pregnancy complications. This 10-step basic ANC program is relatively new, having just started in 2009. It is, therefore, appropriate to gauge midwives' reactions and their intentions regarding these new standard practice guidelines.

Indonesian midwives, as the first line of service in ANC, have huge responsibilities in taking care of pregnant women. For this reason, the Indonesian

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government has improved the ANC practice guidelines by raising the number of steps from seven to 10 in order to increase the quality of ANC service. Actually, in the beginning, the additional steps seem likely to be obstetricians' responsibilities, so midwives' and obstetricians' roles have overlapped since the 2009 changes. First of all, in order to apply the ANC practice guidelines, midwives should have the 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 being able to detect early pregnancy complications and reduce maternal mortality risks, they will perform the ANC practice guidelines properly.[7]

Palembang is the capital city of South Sumatra, Indonesia. In 2005, the maternal mortality ratio for Palembang was 317 per 100,000 live births.[8] 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 MPS program.[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 implemented or used adequately by the providers. The most important consideration is whether midwives want to follow the ANC practice guidelines, or not; it takes a strong intention from them about how important it is to use those guidelines and the usefulness of practicing the guidelines 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 of the midwives (59.5%) did not follow the ANC basic practice guidelines.[9] For this reason, it is important to investigate the factors related to the intention of midwives to use the basic ANC practice guidelines in Palembang district.

METHODS

A cross-sectional study was conducted to identify factors related to the intention of midwives regarding the use of the basic ANC practice guidelines in community health centers and public hospitals in Palembang, Indonesia. Stratified sampling was used to randomly select midwives from a total of 39 health centers and two public hospitals in Palembang District. Using proportion to size, 10 high workload community health centers (in order to select 50 midwives) and 22 low workload community health centers (in order to select 68 midwives) were randomly selected to participate in this study; two public hospitals were included to select 26 midwives. Finally, a total of 144 midwives was selected to participate in this study.

Pre-testing of the structured questionnaire using 23 midwives at sub-community health centers, and data collection were undertaken after receiving permission from the Mahidol University Institutional Review Board (COA.NO.MU-SSIRB 2011/008.0401).

The questionnaire consisted of six parts, namely: socio-demographic factors, attitudes, subjective norms, perceived behavior control, intention, and advantages or disadvantages of using the basic ANC practice guidelines. Questions regarding attitudes, subjective norms, perceived behavior control, and intention regarding the use of the basic ANC practice guidelines

were constructed based on the manual for constructing questionnaires of the Theory of Planned Behavior (TPB).[10] Cronbach's alpha for attitudes, subjective norms, perceived behavior control, and the intention part were 0.63; 0.74; 0.59; and 0.75, respectively. Attitudes towards the use of the basic ANC practice guidelines was classified into two categories: positive (≥75th percentile of the total score) and negative (<75th percentile). Other parts (subjective norms, perceived behavior control and intention) were categorized into two groups: high (≥75th percentile of the total score) and low (<75th percentile).

In dividing age into two groups (i.e. 20-39 and 40-59), the median was used as the cut off point. With regard to the years of work variable, the researcher made the equal intervals by calculating the difference between maximum data and minimum data, then divided the group into two equal half. Working hours per week were classified based on the minimum working hours per week for midwives work in maternity divisions, which is 30 hours/week.

The scoring method was based on the manual for constructing questionnaires for that theory. Each variable consisted of two issues such as attitudes (belief about outcomes of applying ANC practice guidelines and evaluation of expected outcomes), subjective norms (normative belief and motivation to comply), and perceived behavior control (control belief and perceived power). Finally the two issues of each variable were crossed each other to get overall attitudes, subjective norms, and perceived behavior control of midwives. The section below gives an example of calculating attitudes scores and this method was also used in calculating the subjective norms and perceived behavior control scores.

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 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 will have 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**

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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 **bold and italic** 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 ranged from -84 to +84 and were classified into two groups: positive attitudes and negative attitudes, using a cut off point at the 75th percentile.

Data were collected from January to February 2011 through a self-administered questionnaire translated into the Indonesian language which took approximately 30 minutes to complete. The researcher explained the meaning of any questions not understood by any participants. If any participants felt uncomfortable answering a question they were told to leave it blank.

Descriptive statistics were used to calculate frequency, percentage, median, maximum, minimum, quartile deviation and standard deviation for the independent and dependent variables. Crude odds ratio was used to show the strength of association between each dependent variable and the intention of midwives with a 95% confidence interval. The associations between the various independent variables and the intention of midwives regarding the use of the basic ANC practice guidelines were determined by Chi-square tests and multiple logistic regression.

RESULTS

The socio-demographic characteristics of 144 midwives included their ages, academic education, years of working, work hours per week, training experience, marital status, and whether or not they had children. Fifty two per cent of the respondents were aged between 40 and 59 years old. 70% of them had worked in maternity divisions less than 17 years, and 60.6% of them worked more than 30 hours per week. The highest number of working hours was 60 hours/week. Sixty-five percent of them

had three years of midwifery academic training. As for in-service training experience, 58% had not had training about ANC. About 83% were married and 84% had children (Table 1).

Table 1 Percentage of respondents by socio-demographic characteristics.

Variables	Number	Percent
Age groups		
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 academy	8	5.6
3 years midwifery academy	93	64.5
1 year midwifery academy	43	29.9
Years of work (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 experience		
No training	84	58.3
One training program	34	23.6
More than one training programs	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

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With regard to attitudes towards the use of the basic ANC practice guidelines, 71% of the respondents had negative attitudes, and 75% had low subjective norms regarding the use of the basic ANC practice guidelines. More than 70% were reported low perceived behavior control in the use of the basic ANC practice guidelines. However, 58% had high intentions regarding the use of the basic ANC practice guidelines (Table 2).

Table 2 Percentage of respondents by attitudes, subjective norms, perceived behavior control, and intention regarding the use of the basic ANC practice guidelines.

Variables	Number	Percent
Attitudes		
Negative attitudes (score ≤ P_{75})	102	70.8
Positive attitudes (score > P_{75})	42	29.2
Min.= -15 Max.= 84 Median = 43.5 QD = 14.4		
Subjective Norms		
Low subjective norms (score ≤ P_{75})	108	75.0
High subjective norms (score > P_{75})	36	25.0
Min.= 15 Max.= 84 Median = 68.5 QD = 12.9		
Perceived Behavior Control		
Low perceived behavior control (score ≤ P_{75})	107	74.3
High perceived behavior control (score > P_{75})	37	25.7
Min.= -18 Max.= 48 Median = 4.0 QD = 8.9		
Intention		
Low intention(score ≤ P_{75})	60	41.7
High intention (score > P_{75})	84	58.3
Min.= 12 Max.= 21 Median = 21.0 QD = 1.5		

In Chi-square tests, only age, years of work, attitudes, and subjective norms had a statistically significant association regarding the use of the basic ANC practice guidelines with midwives' intentions (Table 3).

Table 3 Association between socio-demographic characteristics, TPB variables and intentions of midwives regarding the use of the basic ANC practice guidelines.

Variables	n	Intention		Crude OR	95% CI	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 academy	101	38.6	61.4	1.52	0.74 – 3.12	0.256
1 year academy	43	48.8	51.2	1.00		
Years of work in maternity division		47.9	52.1	1.00	1.17 – 5.74	0.017*
≤ 17 years	98	26.2	73.8	2.60		
> 17 years	42					
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 experience						
No	84	41.7	58.3	1.00	0.51 – 1.96	1.000
Yes	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		
Attitudes				1.00		
Negative attitudes	102	50.0	50.0	3.67	1.59 – 8.43	0.002*
Positive attitudes	42	21.4	78.6			
Subjective norms						
Low Subjective Norms	108	48.2	51.8	1.00		
High Subjective Norms	36	22.2	77.8	3.25	1.36 – 7.77	0.006*
Perceived behavior control						
Low Perceived	37	42.9	57.1	1.00		
High Perceived	107	37.8	62.2	1.24	0.58 – 2.67	0.584

*Significant at $p < 0.05$

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In multiple logistic regression, only years of work in the maternity division and attitudes were significant predicting factors (Table 4). Midwives having positive attitudes were three times more likely to have high intentions than those having negative attitudes (Adj OR= 2.88, 95% CI=1.09 – 7.65) when adjusting for other factors.

Table 4 The multiple logistic regression model for intentions regarding use of the basic ANC practice guidelines.

Factors	High Intentions regarding the use of the basic ANC practice guidelines		
	Adj. odds ratios	95 % CI	p-value
Years of work in maternity division			
≤ 17 years	1.00		
> 17 years	2.40	1.02 – 5.66	0.045*
Working hours/week			
≤ 30 hours	1.10	0.48 – 2.50	0.823
> 30 hours	1.00		
Marital status			
Married/Divorce/ widow	1.19	0.36 – 3.91	0.776
Single	1.00		
Attitudes			
Negative attitudes	1.00	1.09 – 7.65	0.033*
Positive attitudes	2.88		
Subjective Norms			
Low subjective norms	1.00	0.89 – 6.11	0.087
High subjective norms	2.33		
Perceived Behavior Control			
Low perceived behavior control	1.00	0.38 – 2.13	0.807
High perceived behavior control	0.90		

*Significant at $p < 0.05$

DISCUSSION

The results revealed that the more than half of the respondents (58.3%) had high intentions and 41.7% had low intentions regarding the use of the basic ANC practice guidelines. This can be compared with Kortteisto's study,[11] 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 intentions, 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[9] in Palembang found that 57.1% of 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.

Of the seven socio-demographic variables, the present study demonstrated that only age and years of working in maternity divisions were positively associated with their intentions regarding the use of the basic ANC practice guidelines. Other socio-demographic factors did not have a statistically significant association with midwives' intentions. The findings in Palembang were similar to Reeve's study[12] in Texas concerning factors influencing the intention of nurse practitioners to follow 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 control beliefs.[13] This study showed that older midwives (i.e. those 40-56 years old) had high intentions regarding the use of the basic ANC practice guidelines than younger midwives. In Sarwono's study in Yogyakarta,[14] older persons liked making friends and were friendlier to everyone. Moreover Hartono's study[15] also found that older and maturer midwives had stronger intentions regarding their work. However the age variable was not included in the multiple logistic regression analysis. Years of work in maternity division was used as it was more highly significant than age.

Midwives' years of work in maternity divisions were also associated with their intentions. Midwives with more years of work in maternity divisions had high intentions than those who had fewer years of experience in maternity divisions. Suganda's study in Jakarta[16] showed that long years of work would increase the self esteem and skill of midwives. Hanifi's study in Bogor[17] found that there was a positive relationship between many years of work and their performance in their work. Anderson[18] also found that longer years of working can increase capabilities or skills and intentions to perform the work better than before. This factor is directly associated with intention since it was still significantly associated after multiple logistic regression analysis.

With regard to attitudes, the midwives who had positive attitudes to using the basic ANC practice guidelines were more likely to have high intentions regarding their use than those who had negative attitudes in both analyses. This suggests that attitude directly influences intention to use the basic ANC practice guidelines. However there was no possibility to make comparisons because all of the previous

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studies used correlation analysis. In this present study, two important assumptions of correlation and multiple regression analysis, normality and homoscedasticity (equal variance), were violated. This happened due to the number of the variables scores which were calculated using rating scales. Therefore, this study used multiple logistic regression because it does not require normality and homoscedasticity assumptions.[19]

When using multiple logistic regression analysis, there were no significant associations between subjective norms, perceived behavior control and midwives' intentions. Subjective norms reflect the perception of a person about 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.[10] This present study showed that the subjective norms and perceived behavior control had minimal influence on the intentions of midwives regarding the use of the basic ANC practice guidelines. This may due to the fact that the majority of midwives in Indonesia always depend on physicians' recommendations and the use of medication for disease management, especially for pregnant mothers with complications. It might also be a result of the lack of training about ANC given to midwives who want to improve their skills and confidence Increasing the quality and amount of training may improve midwives' perceived behavior control, but this needs to be accompanied by organizational changes, such as widening the range of equipment and facilities available.

The present study had some limitations. The structured questionnaire was constructed based on the TPB, a manual for health service researchers.[20] However, because the perceived behavior control part received only 0.59 on 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. Data were only gathered by self-administered questionnaire. Having lack of time and other resources prevented observation of actual practice of midwives. This study also only focused on socio-demographic factors, attitudes, subjective norms, and perceived control behavior. Other factors that influence midwives' intentions regarding the 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. It did not include the private sector because private sectors 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 comparable studies.

RECOMMENDATIONS

It was found that more than half of the midwives had not have training about ANC practice guidelines. Two-thirds of midwives had less than 17 years of work experience and almost half of the midwives

were young. Based on these findings, Policy makers should increase the frequency and quality of training about ANC for midwives, especially new and young staff members. This will also promote positive attitudes towards the use of the basic ANC practice guidelines which will enable midwives to detect early complication in pregnancy. Future research, such as qualitative studies using in-depth interviews to evaluate what affects the intentions of midwives regarding the use of the basic ANC practice guidelines should be undertaken in the private sector and in other districts and other provinces of Indonesia so that the results can be more widely generalized.

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REFERENCES

1. Nikiema L, Kameli Y, Capon G, Sondo B, Martin-Prevel Y. Quality of antenatal care and obstetrical coverage in rural Burkina Faso. J Health Popul Nutr. 2010 Feb;28(1):67-75.
2. Indonesia Goverment. 29/Binkesmas/DJ/III/89. In: Health Document, editor. Jakarta: Ministry of Health; 1989.
3. Hermiyanti S. The challenges of making safe motherhood a reality community midwives in indonesia. 2008. [Online] Available from: http://www.searo.who.int. [Accessed 2010 August 28]
4. Indonesia Government. Indonesia local monitoring mother and child health care guideline. 2009.
5. Assis TR, Viana FP, Rassi S. Study on the major maternal risk factors in hypertensive syndromes. Arq Bras Cardiol. 2008 Jul;91(1):11-7.
6. Devenish C. Standards of antenatal care. OGG magazine. 2009 Sum; 11(4): 22-3 [Online] Available from: http://www.rangcog.edu.au/og/standards- antenatal care.pdf. [Accessed 2010 October 21]
7. Koelen M A, van den Ban A W. Theory of planned behaviour. In: Health Education and Health Promotion. Netherlands: Wageningen Academic Publishers; 2004. p.55-9.
8. Government SR. Palembang health profile. Palembang: Ministry of Health Republic of Indonesia; 2008.
9. Tedja L. The factors influencing the adherence of midwives to use basic anc practice guidelines at Palembang district, South Sumatra. [Msc.Thesis]. Indonesia; 2001.
10. Glanz K, Rimer BK, K Viswanath, editors. Health behavior and health education. theory, research and practice. 4th ed. San Fransisco, CA: Jossey-Bass; 2008.
11. Krotteisto T, et al. Healthcare professionals' intentions to use clinical guidelines: a survey using the theory of planned behaviour. Finland: University of Tampere; 2010 from: http://www.proquest.com/; Document ID: 1932881111 [Accessed 2011 March 2]

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12. Reeve K, Byrd T, Quill BE. Health promotion attitudes and practices of Texas nurse practitioners. J Am Acad Nurse Pract. 2004;16(3):125-33.
13. Ajzen I. Theory of planned behavior diagram. [Online] Available from: http://www.people.umass.edu/aizen/tpb.diag.html#null-link. [Accessed 2010 Nov 5]
14. Sarwono S. Health sociology, related concept and application. Yogyakarta. Gajah Mada University Press; 1993.
15. Hartono H. Human resources and management. 2nd ed. Yogyakarta: BPFE; 1996.
16. Suganda S. Factors related to community based midwives' work perfomance in Tasikmalaya. Public Health Faculty. Jakarta: Indonesia University; 1997.
17. Hanafi K. Factors related to the work performance in Bogor. [Msc Thesis]. Indonesia; 1996.
18. Anderson R. Equity in health services; emperical analysis in social policy. Cambridge, Mass: Baliinger Publishing Company; 1975.
19. Tabachnick B. Using multivariate statistics. 4th ed. International student edition. A Pearson Education Company. 2001.
20. Foy R. Theory-based identification of barriers to quality improvement: induced abortion care. International journal for Quality in Health Care; 2005: 17(2)21. Francis J, et al. Constructing Questionnaires based on The Theory of Planned Behaviour. 2004.[Online]Availablefrom:people.umass.edu/aizen/pdf/Francis%20etal.TPB%20research%20manual.pdf. [Accessed 2010 Oct 20]