Factors Predicting Self-Care Behaviors among Pregnant Women In Garut District, West Java Province, Indonesia

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Abstract— Pregnant women’ health during pregnancy can be maintained by self-care practices. Some factors are indicated as predictors of self-care behaviors during pregnancy. Identifying the predictors of self-care with a theoretical framework is needed to understand and to improve self-care behaviors during pregnancy. This study aimed to identify predictors of pregnant women’ self-care behaviors in Garut district. Pender’s Health Promotion Model was used as the guideline. A cross-sectional survey design was used in this study with multistage sampling technique. The data were collected using self-administered questionnaire from 263 pregnant women during October 2014. The results showed that 76.4% pregnant women had a fair level of self-care behaviors (Mean 64.14; SD= 5.952). Factors associated with self-care behaviors were knowledge of self-care, perceived benefits of self-care, perceived self-efficacy in self-care, and social support satisfaction (r = .130, r =.27, r = .438, r = .312, respectively). Regression analysis revealed perceived self-efficacy in self-care, social support satisfaction, and knowledge of self-care were accounted for 25% of the variance in the self-care behaviors of pregnant women in Garut District. The finding suggested promoting self-care behaviors among this group by improving their self-efficacy in self-care, social support satisfaction, and knowledge of self-care.

Keywords— Self-care; Behaviors; Pregnant women

I. INTRODUCTION

More than half a million women’s deaths are caused by factors related to pregnancy and childbirth each year [1]. Out of 60,799 maternal deaths between 2003 and 2009 were due to indirect causes 27% and direct obstetric causes 73% [2]. In Indonesia, the maternal mortality rate increased from 228 cases to 359 per 100,000 live births between 2007 and 2012 [3]. In Garut District, during 2012, out of 53,000 pregnant women were suffered from anemia (45%), chronic malnutrition (13%) and moderates goiters (9%) [4].

Maternal health problems are influenced by maternal behaviors either before or during pregnancy [5, 6, 7]. World Health Organization [WHO] stated that health problems during pregnancy and childbirth can be prevented by healthy self-care behaviors [8]. Orem explained several human need self-care requisites are necessary during a person’s lifetime. It includes the adequacy of air, water and food; elimination processes and excrements; activity and rest; solitude and social interaction; hazards prevention; promotion of human function and development within society; conformity to human growth and development processes; and control of injury, defect, disability or medical treatment [9].

This study used The HPM (Health Promotion Model) was used to explain factors related to Self-care during pregnancy as independentsuch as demographic characteristic, knowledge, perceived benefits, perceived barriers, social support and self-efficacy. This might contribute to identify predictive factors of self-care behaviors during pregnancy in the Garut District. Further, it can be used as baseline data to prevent maternal morbidity caused by these factors during pregnancy.

II. MATERIAL AND METHODS

Design

This study was used a cross-sectional survey design.

Sample

Daniel formula was determined the sample size [10]. The design effect (deff=1.5) [11] and additional 20% was added to the sample size [12]. The total number was therefore 313 pregnant women included in this study. A multi stage sampling technique was carried out to select the sample from 5 public health centers (PHCs) in Garut, Indonesia. All participants were able to write and read in Indonesian language (Bahasa), willing to participate and recorded in the public health centre. Pregnant women who were being hospitalized were excluded.

Research Instruments

A self-administered questionnaire was used to collect the data. This instrument consisted of 6 parts.
1) Demographic form: it was used to assess personal data includes age, income, educational level, parity, gestational age, and number visiting of ANC.
2) Knowledge: it was developed by researcher which is consisted of 17 items that positive or negative question. Each item had true, false, and do not know choices. Positive questions scored 1 for true options and 0 for false and do not
An approval to conduct the study was granted by Ethical Review Board (ERB) Committee of Boromarajonani College of Nursing Nopparat Vajira (BCNNV)-Bangkok number 48/2014.

Data Analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) Version 16.0 for Windows. Descriptive statistics were used to characterize the sample and to examine the distribution properties of the variables. The knowledge of self-care, perceived benefits of self-care, perceived barriers to self-care, perceived self-efficacy in self-care, social support satisfaction, and self-care behaviors variables were categorized into three levels using cut-off values of 60% and 80% of the total score according Blooming classification [16]. The correlation between independent and dependent variable were analyzed using point biserial correlation coefficient Pearson’s Product–moment-correlation-coefficient, and Spearman rank correlation. The predictive factors were examined using stepwise multiple linear regressions.

III. RESULT

The total of 263 participants was included in the analysis. Most of the participants (72.3%) were aged from 20 to 34 years. The average age of the participants was 27.7 years with a standard deviation of 6.37 years. The minimum age was 16 years and maximum age was 47 years. Most of the participants (65.4%) have income less than IDR 1.5 million/month. The average income per month of this group is IDR 1,185,897 with SD IDR 857,529. The minimum income was 0 and maximum income was IDR 6,000,000. All participants were educated by formal education: elementary school, junior high school, senior high school, vocational, diploma and university. The majority of the participants are junior and senior high school graduates, 32.7% and 31.9%, respectively. Only a quarter had a higher educational level than senior high school.

### Ethical Review

Descriptive statistics were used to characterize the sample and for the Social Sciences (SPSS) Version 16.0 for Windows. Data were analyzed using Pearson Product–moment correlation coefficient, Spearman rank correlation. The predictive factors were examined using stepwise multiple linear regressions.

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>-</td>
<td>200**</td>
<td>648**</td>
<td>110</td>
<td>058</td>
<td>163**</td>
<td>024</td>
<td>0.06</td>
<td>0.088</td>
<td>0.067</td>
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</tr>
<tr>
<td>Income</td>
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<td>112*</td>
<td>0.15</td>
<td>0.318**</td>
<td>0.171**</td>
<td>0.014*</td>
<td>0.067</td>
<td>0.049</td>
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<tr>
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<td>109</td>
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<td>0.051</td>
<td>0.012</td>
<td>0.110*</td>
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<td>0.048</td>
<td>0.000</td>
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<tr>
<td>Gestational age</td>
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<td>0.110</td>
<td>0.009</td>
<td>0.127</td>
<td>0.119**</td>
<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
<td>0.096</td>
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<tr>
<td>ANC numbers</td>
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<td>0.061</td>
<td>0.056</td>
<td>0.404</td>
<td>0.181**</td>
<td>0.003</td>
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<tr>
<td>Educational level</td>
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<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
<td>0.096</td>
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<tr>
<td>KSC*</td>
<td>-</td>
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<td>0.129**</td>
<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
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<tr>
<td>PBSC*</td>
<td>-</td>
<td>0.027</td>
<td>0.129**</td>
<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
<td>0.096</td>
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<tr>
<td>PBRSC*</td>
<td>-</td>
<td>0.027</td>
<td>0.129**</td>
<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
<td>0.096</td>
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<tr>
<td>SS Satisfaction</td>
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<td>0.027</td>
<td>0.129**</td>
<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
<td>0.096</td>
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<td>0.027</td>
<td>0.129**</td>
<td>0.181**</td>
<td>0.229**</td>
<td>0.051</td>
<td>0.126</td>
<td>0.096</td>
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Note: (a) = Pearson Product–Moment correlation coefficient; (b) = Spearman rank correlation; (c) Point Biserial correlation coefficient; **: Correlation is significant at the .01 level (2-tailed); *: Correlation is significant at the .05 level (2-tailed); 1= age; 2=income; 3=parity; 4=gestational age; 5=ANC number; 6=educational level; 7= KSC (knowledge of maternal self-care); 8=PBSC (perceived benefits of maternal self-care); 9= PBRSC (perceived barrier to maternal Self-care); 10= PSESC (perceived self-efficacy in maternal self-care); 11= SS (social support) satisfaction; 12= Maternal SC (self-care).
Regard to current pregnancy, 9.5% participants were primigravida. The minimum parity was 0 and maximum was 9. Approximately 44% participants were in 2nd trimester, 36.1% were in 3rd trimester, and 19.4% were in 1st trimester. All participants have visit ANC service and more than a half of participants had visit ANC service more than 3 times. Out of 263 participants, 6.1% have a good level of knowledge, more than 75% of participants have good and moderate levels of perceived benefits of self-care, approximately 99% participants had no perceived barriers of self-care behaviors, more than 17% participant had moderately and highly confident of self-efficacy in self-care, 62% satisfy of social support received, and approximately 96% participant have fair and high level of self-care behaviors during pregnancy (data not shown).

The result shows that knowledge of self-care, perceived benefits of self-care, perceived self-efficacy in self-care and social support satisfaction were related to pregnant women’ self-care behaviors during pregnancy (r = .130, p < .05; r = .271, p< .01, r = .438, p < .01; r = .312, p < .001, respectively) (see table II).

### TABLE 2. STEPWISE MULTIPLE REGRESSION BETWEEN THE PREDICTIVE FACTORS AND MATERNAL SELF-CARE BEHAVIORS DURING PREGNANCY

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived self-efficacy in</td>
<td>170</td>
<td>024</td>
<td>391</td>
<td>7.022</td>
<td>000</td>
</tr>
<tr>
<td>maternal self-care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support satisfaction</td>
<td>285</td>
<td>079</td>
<td>202</td>
<td>3.608</td>
<td>000</td>
</tr>
<tr>
<td>Knowledge of maternal self-care</td>
<td>277</td>
<td>137</td>
<td>110</td>
<td>2.029</td>
<td>044</td>
</tr>
<tr>
<td>Constant (a)</td>
<td>42.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table II, the variables, which could predict the pregnant women’ self-care behaviors were perceived self-efficacy in self-care, social support satisfaction and knowledge of self-care. The self-care behaviors in this group accounted for 25% of the variation ($R^2 = .249$) by three variables. Pregnant women’ self-efficacy was the strongest predictor of self-care behaviors, followed by social support satisfaction and knowledge of self-care (B=.391, p<.01; B=.202, p<.01; B=.110, p<.05, respectively) (see table II).

IV. DISCUSSION

This study found that pregnant women who had higher knowledge of maternal self-care or who had higher perceived benefits of self-care or who had higher perceived self-efficacy in self-care or who had higher social support satisfaction would have better self-care behaviors during pregnancy. The combination of knowledge of self-care, social support satisfaction and, self-efficacy in self-care were predict self-care behaviors of pregnant women in Garut district. These factors explained 24.9% of variance in self-care behaviors in this group.

This study revealed that parity and gestational age had no significant correlations with maternal self-care behavior (p>0.05). It was in line with Yu-Huang et al. [17] who found that the gestational age and parity of 172 pregnant women aged at least 18 had no significant association with the lifestyle of pregnant women (p>0.05) in Taiwan. It was also supported by Larrañaga et al. [18], who similarly stated no correlation between these factors and the self-care behavior (p>0.05) of pregnant women in Spain. However, Pender et al. (2011) explained that individual characteristics influence behaviors [19].

The finding of this study indicate that the number of ANC visits was not significantly related to self-care behavior generally, it was contradicts a study by Sen et al. (2012), who found the frequency of ANC visits was related to health practices of pregnant women in Turkey (p<0.01). It might be due to the fact that all pregnant women attended ANC clinic and received the same health information disregarding the frequency of their visit. Sen et al. (2012) stated that adequate ANC can increase the awareness of pregnant women about their health practices [20] Therefore, many participants in this study might have had an increased awareness about self-care behaviors due various ANC numbers during previous pregnancies.

The results revealed that income was not significantly associated with self-care behaviors. This was in line with Thaewpa et al. (2012), who found that income had no relationship with health promoting behavior (self-actualization, health responsibility, exercise, nutrition, interpersonal support and stress management) of pregnant women aged more than 34 in Thailand (p>0.05) [21]. On the contrary, Kavlak et al. (2012) found that in Turkey the monthly income was related to pregnant women’s lifestyle (self-actualization, health responsibility, exercise, nutrition, interpersonal support and stress management) (p<001) [22]. One possible explanation for the lack of influence of income on the self-care behavior could be most participant found had less and zero income. They might rely their daily living needs to other family members, thus make they can take decision to their self-care behaviors.

Likewise, the results of the Garut study do not back up a significant relation between maternal age and self-care behavior of the participants (p>0.05). This finding corresponds to the study by Yu-Hua et al. [17], who found that in Taiwan the age of pregnant women aged between 13 to 21 years was not associated with their behavior during pregnancy (p>0.05). This can be explained that the majority of participants were young adulthood, which is in the transition period to adulthood. Pender et al. (2011) explained that it is a transition period which is need supports from others to maintain their health status[19]. This study did not find a significant correlation between the educational level of pregnant women in Garut and their self-care behavior during pregnancy. This result is in contradiction to various recent studies such as Yu-Hua et al. [17, 18, 23]. In the sample group from Garut, however, the knowledge of self-care was mostly (48.7%) on a moderate level, independent of their differing educational background, which could account for the missing influence of the educational background on the self-care.
behavior. In addition, knowledge of self-care was weakly associated with self-care behaviors during pregnancy in this study. As found in this study, although approximately 6% of the participants’ knowledge were on good level, more than 19% of them had good of self-care behaviors level.

The finding was in line with Panthumas et al. (2012), who found that knowledge of self-care of Thai teenager had only weak positive correlations with self-care behavior during pregnancy (r=0.28; p<0.001). It can be explained that knowledge is needed by pregnant women to perform self-care behaviors correctly [24].

The findings indicate that perceived benefits of maternal self-care have a significant relationship with self-care behavior during pregnancy. This result is supported by Panyapisit (2002) who found that perceived benefits of health promoting behaviors of mother who experiencing preterm delivery related to health promoting behaviors (health responsibility, physical activity, nutrition, interpersonal relation, spiritual growth, stress management) during pregnancy (r=.619, p<0.001) [13]. As explained by Pender et al. (2011), perceived benefits directly or indirectly can enhance the commitment to engage behaviors [19].

The finding in this study indicates that the perceived barrier to self-care did not significantly correlate with self-care behavior during pregnancy. It was in line with Thaewpiya et al. (2012) who found that perceived barriers to health promoting behaviors (HPB: health responsibility, physical activity, nutrition, psychological wellness, interpersonal relationship, stress management) was not significantly related to HPB of pregnant women aged more than 34 in Thailand (r=0.161; p>0.05) [21]. A possible reason for the deviating results in Garut could be that most participants (98.9%) in this group perceived no barriers to maternal SCB during pregnancy. Besides that, participants’ perceived self-efficacy in self-care behaviors was the strongest predictors in this study. As explained by Pender et al. (2011), perceived self-efficacy indirectly effect perceived barrier in health-promoting behaviors, higher of perceived self-efficacy influence lowering of perceived barriers [19].

This study shows that perceived self-efficacy in self-care was associated with self-care behavior during pregnancy in this study (r=0.438; p<0.01). This was supported by Panthumas et al. (2012) who found that perceived self-efficacy in self-care among pregnant teenagers was moderately associated with self-care behaviors during pregnancy (r=0.47; p<0.001) [24]. Thaewpiya et al. (2012) also found a moderate correlation between self-efficacy and health promoting behaviors (HPB) in pregnant women aged 35 and more (r=. 613; p<0.01) [25]. As stated by Pender et al. (2011), personal expectation and commitment to influence the action is enhanced by perceived self-efficacy [19].

The finding indicated that social support satisfaction was related to self-care behavior during pregnancy (r=0.312; p<0.01). This is in line with Panthumas et al. (2012), who found a significant and moderate correlation between the perceived social support from family and self-care during pregnancy among Thai primigravida teenagers (r=0.34; p<0.001) [24]. Also Thaewpiya et al. (2012) found a significant relationship between social support and health promoting behavior among pregnant women aged more than 34 years (r=0.534; p<0.01) [25]. These studies assumed that pregnant women perceived and receive sufficient social support enhance their health habits and behavior [17]. As stated by Neamsakul (2008), different support resources during pregnancy convince pregnant women to accept their motherhood [26].

V. CONCLUSION

Perceived self-efficacy in maternal self-care, social support satisfaction, and knowledge of maternal self-care were predict to the overall maternal self-care during pregnancy in this group. The perceived benefits of maternal self-care were associated with but did not predict maternal self-care. However, the finding suggested that community health-care provider promote self-care behaviors among this group by improving their self-efficacy in self-care, social support satisfaction, and knowledge of self-care.

ACKNOWLEDGMENT

The researchers would like to thank the pregnant women for their participation in this study.

REFERENCES