

## ORIGINAL RESEARCH

# Women's decision-making regarding medication use in pregnancy for anxiety and/or depression

Kathleen M. Stepanuk, Kathleen M. Fisher, Ruth Wittmann-Price, Bobbie Posmontier & Anand Bhattacharya

Accepted for publication 2 February 2013

Correspondence to K.M. Stepanuk:  
e-mail: kms375@drexel.edu

Kathleen M. Stepanuk DrNP RN  
Adjunct Clinical Professor  
College of Nursing and Health Professions,  
Drexel University, Philadelphia,  
Pennsylvania, USA

Kathleen M. Fisher PhD CRNP RN  
Associate Professor  
Division of Graduate Nursing, Drexel  
University CNHP, Philadelphia,  
Pennsylvania, USA

Ruth Wittmann-Price PhD RN CNS  
Professor and Chairperson  
Department of Nursing, Francis Marion  
University, Florence, South Carolina, USA

Bobbie Posmontier PhD CNM PMHNP-BC  
Assistant Professor  
Division of Graduate Nursing, Drexel  
University CNHP, Philadelphia,  
Pennsylvania, USA

Anand Bhattacharya MHS  
Research Methodologist and Consultant,  
Philadelphia, Pennsylvania, USA

STEPANUK K.M., FISHER K.M., WITTMANN-PRICE R., POSMONTIER B. & BHATTACHARYA A. (2013) Women's decision-making regarding medication use in pregnancy for anxiety and/or depression. *Journal of Advanced Nursing* 69(11), 2470–2480. doi: 10.1111/jan.12122

## Abstract

**Aim.** To increase understanding of women's decision-making process concerning the medication use for anxiety and/or depression while pregnant.

**Background.** Anxiety and depression affects many pregnant women, yet the decision to take psychotropic medication is complex and possibly subject to social oppression.

**Design.** Cross-sectional descriptive survey design.

**Methods.** A web-based survey was used to collect data from a convenience sample of 143 pregnant women over 3 months beginning in early 2011. An independent *t*-test was conducted to determine differences in satisfaction between women with high and low levels of emancipated decision-making (EDM). A multiple regression analysis was conducted to determine which subscales of the emancipation scale best predict level of satisfaction with the decision.

**Findings.** The majority of respondents were White, between 25–34 years of age. The group with lower levels of emancipation reported lower mean satisfaction scores compared with those with higher levels of emancipation. Regression analysis showed that the three subscale emancipation model was a statistically significant predictor of satisfaction with the decision and accounted for 54% of the variance in satisfaction. The subconcept of personal knowledge was most predictive of satisfaction with decision.

**Conclusions.** Women may be able to overcome oppressive forces by using an EDM process. EDM allows them to make a decision that feels right for them and to feel satisfied with the decision.

**Keywords:** emancipated decision-making, satisfaction, medication use, anxiety, depression, pregnancy, nurses

## Introduction

Pregnancy is supposed to be a joyful and exciting time in a woman's life. However, many women are faced with mental health issues, particularly anxiety and depression, before, during and after pregnancy. Although the Thalidomide disaster of the 1960s has made healthcare providers and consumers more cautious about medication prescription in general during pregnancy, psychotropic medications are often prescribed to pregnant women to treat anxiety and depression (Jasper *et al.* 2001, Sanz *et al.* 2001, Baggeley *et al.* 2004). A woman's decision to take or not take medication for anxiety and/or depression is influenced by many factors and some may oppress her free choice. Only one study to date has explored pregnant women's decisions regarding psychotropic medication use for depression (Bonari *et al.* 2005) and only one recent study has explored the process of decision-making in this population (Patel & Wisner 2011). In addition, neither used a theoretical framework for decision-making to guide their studies. The lack of research into this process represents an important problem because healthcare providers need to understand the decision-making process to facilitate shared decision-making and foster patient autonomy for pregnant women. Therefore, the purpose of the current study was to use a known theoretical framework, the Wittmann-Price Theory of Emancipated Decision-making (EDM), to further explore the process of decision-making among pregnant women with regard to psychotropic medication use during pregnancy. We hypothesized that women who used an EDM process would have higher levels of satisfaction with their decision (SWD).

## Background

It is estimated that 500,000 pregnancies will be affected by mental illness in the USA each year (Armstrong 2008). The prevalence of anxiety and depression in pregnant women globally is estimated to be as high as 54% (Andersson *et al.* 2006, Faisal-Cury & Rossi Menezes 2007, Lee *et al.* 2007). A systematic review estimated that the prevalence rate of depression to be 7.4% in the first trimester, 12.8% in the second trimester and 12.0% in the third trimester (Bennett *et al.* 2004). In fact, Bennett *et al.*, report that many women first experience mood disorders during pregnancy or in the months following.

Treatment for anxiety and depression often includes the use of psychotropic medications. Allison (2004) estimates that half of the women who suffer from mental illness take medications and Mitchell *et al.* (2011) estimate that 7.5%

of pregnant women have taken antidepressants. Women who are taking medications for anxiety or depression need to consider the possible effects of the medications on the foetus. Medications used to treat anxiety and/or depression are among the most researched (Lorenzo *et al.* 2011). However, as with all medications, researching the effects of psychotropic medication use in pregnancy is complicated by ethical considerations due to the inappropriateness of testing drug effects during pregnancy. Therefore, women and their healthcare providers are still making decisions based on data that are currently insufficient and often conflicting or misinterpreted (Chambers *et al.* 2008, Bilszta *et al.* 2011). The reported potential risks of psychotropic medication use have not been benign, however, including spontaneous abortions, preterm delivery, congenital anomalies, neonatal withdrawal symptoms and long-term neonatal neurological effects (Chambers *et al.* 1996, Alwan *et al.* 2007, Kallen & Otterblad Olausson 2007, Louik *et al.* 2007, Yonkers *et al.* 2009). It is, therefore, understandable that women and their providers are concerned about psychotropic medication use in pregnancy. In contrast, however, untreated anxiety and depression in pregnancy has also been associated with adverse outcomes, including maternal and neonatal effects such as depression relapse, preterm labour and birth, foetal hypoxia, neonatal distress syndrome and long-term cognitive and behavioural problems in children (Sjostrom *et al.* 1997, Chung *et al.* 2001, Heron *et al.* 2004, Einarson 2005, Cohen *et al.* 2006, Orr *et al.* 2007). Gentile (2005) suggests that major depression, especially when accompanied by a delusional component, may even lead to suicide or infanticide.

## Theoretical framework: emancipated decision-making

Shared decision-making between the healthcare provider and the patient is a goal of healthcare to enhance patient autonomy and patient-provider relationships (O'Connor *et al.* 1999). Although it is acknowledged that the choice to take or not to take a psychotropic medication while pregnant for anxiety or depression is complex, we know little about the decision-making process. Wittmann-Price (2004) developed the Theory of EDM in Women's Healthcare based on Critical Social, Feminist and Freire's Emancipatory Educational theories. According to Wittmann-Price, these theories substantiate the premise that social norms and attitudes and the constant phenomenon of oppression may influence decision-making in women's healthcare. The Theory of EDM in Women's Health Care encompasses three sub-concepts: 'personal knowledge', 'awareness of social norms' and a 'flexible environment.'

Personal knowledge is defined as a woman having thought about her choice in relation to what is best for her. Awareness of social norms is described as a woman's awareness that society places more value on one option over another. A flexible environment is one that affords a woman the opportunity to enact on her choice without opposition (Wittmann-Price 2004, Wittmann-Price *et al.* 2011). Wittmann-Price and colleagues have correlated EDM with SWD in three studies, respectively, evaluating decision-making among healthy postpartum women on choice of infant feeding, pain management during labour and mode of delivery (Wittmann-Price 2006, Wittmann-Price & Bhattacharya 2008, Wittmann-Price *et al.* 2011). Satisfaction with a decision has an impact on healthcare behaviours (Holmes-Rovner *et al.* 1996, Wills & Holmes-Rovner 2006) and may lead to better adherence to prescribed therapies, less reliance on unhealthy alternative mood altering behaviours, such as alcohol and illicit drug use and enhanced relationships with family and healthcare providers. The central hypothesis of this study was that pregnant women who use an EDM process in their choice whether or not to take psychotropic medication for anxiety or depression during pregnancy will be more satisfied with their decision-making process.

#### Personal knowledge and perception of risk

One of the biggest decision-making dilemmas in pregnancy is whether or not to take a medication. For many women, the perception of risk is a primary factor influencing this decision (van Trigt *et al.* 1994). Bonari *et al.* (2005) found that a high initial perception of risk was associated with a lower likelihood of continuing a medication. The study compared women who were taking an antidepressant ( $n = 100$ ), a gastric medication ( $n = 100$ ) and an antibiotic ( $n = 100$ ). Despite reassuring counselling, 15% of antidepressant users chose to discontinue their medication compared with 4% of gastric medication users and 1% of those women taking an antibiotic. Women taking antidepressants were significantly more likely to agree that all medications are harmful during pregnancy and that the potential consequences of taking medications in pregnancy were too risky. The study also demonstrated that women who were prescribed an antidepressant waited a substantial amount of time to take medications compared with women who were prescribed antibiotics or gastric medication. The authors suggest that this delay may be attributed to the stigma surrounding maternal mental illness and psychotropic medication use in pregnancy.

#### Social norms and stigma in mental health

In the context of EDM, 'awareness of social norms is defined as how society places more value on one or more of the alternatives being considered' (Wittmann-Price 2004, p. 442). Mental illness is still perceived as an indulgence, a sign of weakness and, as such, carries a stigma (Kelly & Jorm 2007). Stigma is highly correlated with the amount of control a person is perceived to have over the condition or illness (Sandelowski *et al.* 2004). Historically, women with mental illness have been discouraged from pursuing motherhood and in some cases people with mental illness were sterilized to prevent procreation (Krumm & Becker 2006). Krumm and Becker state 'subjective perceptions of the stigma attached to motherhood and mental illness point to existence of societal representations which conceptualize motherhood and mental disorders as mutually exclusive' (p. 453). In one study, 22 mothers with severe mental illness expressed concerns that their children would be negatively affected by their illness; that the responsibilities of parenting impeded their engagement with mental health services; and the fear of losing custody of their children often prevented them from disclosing difficulties they were experiencing (Diaz-Caneja & Johnson 2004). The authors also found the benefits of parenting were acutely felt by many of these women as they reported that motherhood gave them a purpose in life and rich emotional rewards and fulfilled their roles as women.

#### Flexible environment and support for decisions

Like the woman who is making healthcare decisions, family, friends and healthcare providers are influenced by their own perceptions of risk and these perceptions may impact their acceptance or support of a woman's decision. Exposures in pregnancy, particularly psychotropic medication use, are prone to erroneous risk perceptions, even on the part of healthcare providers (Pole *et al.* 2000). One recent study explored the knowledge, attitudes and practices of primary care physicians ( $N = 111$ ) about the decision to continue or discontinue a woman's antidepressant medication during pregnancy (Bilszta *et al.* 2011). Several issues were raised by the physicians that influenced their treatment decisions including the perceived levels of misinformation about the safety of these medications in pregnancy for both the mother and the foetus, the belief that pregnant depressed women should be treated differently than non-pregnant women and the potential for legal liability. Although many healthcare providers will give counselling of risks of medication use in pregnancy, many fail to

include the risks of non-treatment (Miller 2009). In addition, some women are influenced by the attitudes of family and friends in their decision-making (Bonari *et al.* 2005). Bonari *et al.* also found that women's preconceptions about medication use in pregnancy were difficult to change once they had made up their minds.

Prior to the current study, the Wittmann-Price Theory of EDM had not previously been tested in pregnant women or women with mental health issues. We hypothesized, however, that all three sub-concepts of EDM would be an important aspect of decision-making in pregnant women and therefore would be predictive of EDM. In addition, because EDM may be influenced by age, parity, education, income and personal relationships, we hypothesized that differences would be found among various socio-demographic characteristics of our study population.

## The study

### Aim

To test a mid-range nursing theory developed specifically for women's healthcare choices: the Wittmann-Price Theory of EDM using decision-making about medication use in pregnancy for anxiety and/or depression as the clinical exemplar.

### Design

A minimal sample size of 128 was calculated based on a power analysis to achieve a power of 0.80 with medium effect (Cohen's  $d = 0.50$ ) based for two-tailed *t*-test with a significance level ( $\alpha$ ) of 0.05. To account for missing data in the survey responses, it was decided that the survey would over sample by an additional 40–50 subjects.

This study was a web-based cross-sectional descriptive survey design. An electronic survey was used to collect information on socio-demographic characteristics, level of Emancipated Decision Making (EDM) and SWD in women that chose to use medication in pregnancy for anxiety and/or depression.

### Sample/participants

The participants were a self-selected convenience sample of pregnant women who visited pregnancy-related websites, forums and social networking websites. An advertisement for the study was placed on pregnancy-related websites or forums and social networking websites chosen by searching 'pregnancy' in a search engine and scanning the results for

sites that had forums where an ad could be placed. Most sites were from English speaking countries; specifically the US and England. Women who were 18 years or older, able to read and understand English, pregnant and had made a decision in pregnancy regarding medication use for symptoms of anxiety and/or depression were asked to participate. Women who were interested in participating were directed via a link to a page providing the purpose, aims and procedures of the study. If they agreed to participate, they were informed that clicking on the link to the survey would indicate their consent to participate in the study. A total of 173 people attempted the online survey. Data were cleaned and coded and individual responses with more than 10% missing data were excluded from the study. A total of 30 respondents either did not give adequate information, or did not meet the inclusion criteria of the study and were excluded from the study. The remaining 143 responses were eligible for further analyses. Comparisons between included cases and those not included could not be made due to insufficient demographic data.

### Data collection

The data collection consisted of a survey comprised of three instruments including: a demographic questionnaire, the Wittmann-Price revised Emancipated Decision-Making Scale (EDM-r) and the SWD Scale. The EDM-r and the SWD were used with permission from the authors. Data were collected over 3 months starting in early 2011. An optional open-ended question was included to elicit additional data that will be reported elsewhere.

### Demographic data form

The demographic questionnaire was used to elicit information on age, race, income, education level, relationship with father of the baby (living arrangement), weeks gestation at time of survey completion, number of previous pregnancies, number of children, history of mental illness (or diagnosis), history of substance abuse, specialty of prescribing health-care provider, type of psychotropic medication prescribed and whether the decision was to take or not take psychotropic medication in pregnancy.

### Revised emancipated decision-making scale

The original EDM scale was revised (EDM-r) by Wittmann-Price and colleagues (Wittmann-Price *et al.* 2011) and consists of 20 items. A 5-point Likert scale was used to describe intensity from 1 being 'strongly disagree'–5 being 'strongly agree.' Results from the EDM-r are reported as a total summed score for all responses (range 20–100), and a

summed score for each of the three individual subscales (personal knowledge, awareness of social norms, flexible environment).

#### *Satisfaction with decision scale*

The 6-item SWD scale, developed by Holmes-Rovner *et al.* (1996), was used to test decisional satisfaction as an outcome variable. A 5-point Likert scale was used to describe intensity from 1 being 'strongly disagree'–5 being 'strongly agree.' The highest score possible is 30 and the lowest score is 6. Higher scores indicate greater satisfaction with the decision.

#### **Ethical consideration**

Institutional review board approval from the University was obtained prior to the start of the study.

#### **Data analysis**

Data were downloaded directly from the online survey company (SNAP Survey, Ltd., Portsmouth, NH, USA) to Statistical Package for the Social Sciences (SPSS), version 18.0 (Chicago, IL, USA) statistical analysis program. Descriptive statistics, including frequencies distributions, measures of central tendencies and variability, were calculated for all variables. An independent *t*-test was conducted to compare the level of satisfaction between women with high and low levels of emancipation with decision. The median value of the emancipation score was used as the cut off for assigning the women as high or low level of emancipation. The median score for the participants of this study was 76. A multiple regression analysis was also conducted to determine which subscales best predicted the level of satisfaction with the decision. Statistical significance was set at  $P < 0.05$ .

#### **Validity/reliability rigour**

The Cronbach's alpha of the total EDM scale was reported between 0.87 and 0.91 in three previous studies of postpartum women (Wittmann-Price *et al.* 2011, Wittmann-Price 2006, Wittmann-Price & Bhattacharya 2008). The Cronbach's alpha in the current study was 0.79.

Holmes-Rovner *et al.*, reported a Cronbach's alpha of 0.86 for the SWD scale among postmenopausal women. Wittmann-Price reported reliabilities of 0.89, 0.92 and 0.91 in three studies correlating SWD with EDM among postpartum women regarding their choices of infant feeding method, pain management in labour and delivery method (Wittmann-Price 2006, Wittmann-Price & Bhattacharya

2008, Wittmann-Price *et al.* 2011). The Cronbach's alpha in the current study was 0.85. The SWD scale was originally validated in postmenopausal women (Holmes-Rovner *et al.* 1996). To our knowledge, this scale has not been tested in pregnant women. The validity of the instrument in this population was demonstrated in the content analysis of responses to an open-ended question to be published elsewhere.

## **Results**

### **Socio-demographic characteristics**

Socio-demographic characteristics of respondents are summarized in Table 1. The majority of respondents were White (non-White 5%), between 25–34 years of age with either a college degree or higher and lived in the US Fewer than half reported working full time while more than half the sample reported an annual household income of under \$75,000. The majority of respondents were living with the father of their baby at the time of participation. The most common insurance plan mentioned was a Preferred Provider Organization (PPO).

### **Health histories**

Pertinent health history of the participants is reported in Table 2. Respondents most frequently reported this as their first pregnancy (38%) with no children living at home (53%). The average gestational age of their unborn baby was 22 weeks at the time of their participation. The average gestation when the decision was made was 8 weeks. A small number of women reported a history of substance abuse. A large majority of the participants had a diagnosis of mental illness. All women reported psychotropic medication use for anxiety or depression during their pregnancies. While exactly half the respondents reported the choice to continue or start psychotropic medication as prescribed, almost a third reported the choice not to continue or start taking psychotropic medications for their anxiety or depression.

### **EDM-r score and SWD score among study participants**

The overall Emancipated Decision-making revised scale (EDM-r), each subscale and overall Satisfaction with Decision scale (SWD) mean score for the entire sample are summarized in Table 3. The overall mean EDM-r score was 76.15 (SD 8.74) out of a possible 100 and ranged between 52–94. The mean for the personal knowledge

**Table 1** Socio-demographic characteristic of the study participants.

Variable	Frequency (%) <i>n</i> = 143*
Age	
18–24 years	23 (16)
25–34 years	100 (70)
35–44 years	19 (13)
45 and above	1 (1)
Ethnicity	
Caucasian	136 (95)
Country of Residence	
United States	106 (74)
British Isles (England, Ireland)	25 (17)
Australia/New Zealand	5 (4)
Canada	6 (4)
Argentina	1 (1)
Education	
High school or less	16 (11)
Some college	32 (22)
College degree	45 (32)
Some graduate education	15 (11)
Graduate degree	34 (24)
Prefer not to answer	16 (11)
Employment Status	
Full time	63 (44)
Part time	24 (16)
Self-employed	8 (6)
Unemployed	48 (34)
Living Arrangement	
Live alone	2 (2)
Live with father of the baby	128 (89)
Live with same sex partner	2 (2)
Live with relatives/family	9 (6)
Live with friends	1 (1)
Type of Insurance	
No insurance	19 (13)
Health Maintenance Organization (HMO)	22 (15)
Preferred Provider Organization (PPO)	59 (41)
Commercial	8 (6)
Medicaid	15 (11)
Other	20 (14)

\*Data were reported for available sample.

subscale was 25.24 (SD 3.23) out of 30 indicating that the participants had a high level of personal knowledge about their decision. The mean scores and range for the flexible environment and awareness of social norms subscales were almost identical indicating that the sample had similar levels of flexible environment and awareness of social norms.

Comparison of levels of satisfaction between relatively high and relatively low levels of EDM revealed that satisfaction with the decision score was significantly lower in the group with lower levels of emancipation (Mean = 24,

**Table 2** Health histories of the study participants.

Variable	<i>n</i> = 143 Mean (SD)
Approx. weeks in current pregnancy	22 (10)
Weeks in pregnancy when decision was made	8 (7)
	Frequency (%)
Times pregnant	
Zero	4 (3)
One	53 (38)
Two	42 (29)
Three or more	44 (30)
Number of living children	
Zero	76 (53)
One	41 (29)
Two	17 (12)
Three or more	9 (6)
History of substance abuse – Yes	15 (11)
Diagnosed with mental health illness – Yes	121 (85)
Used medication for anxiety during pregnancy – Yes	143 (100)
Decision regarding the psychotropic medication use in pregnancy	
Chose not to continue, restart, or start taking medication	42 (29)
Chose to continue, restart, or start medication as prescribed	72 (50)
Chose to switch medication	12 (8)
Took less medication than prescribed	7 (5)
Used another mode of therapy	6 (4)
Took friend's medication	1 (1)
Other	3 (2)

\*Data were reported for available sample.

SD 2.9) compared with those with higher levels of emancipation (Mean = 27.6, SD 2.6,  $t = 8.0$ ,  $P < 0.001$ ).

Results from the regression analysis showed that the overall EDM model, with the three subscales, was a statistically significant predictor of satisfaction with the decision,  $F(3, 125) = 50.47$ ,  $P = 0.001$  and accounted for 54% of the variance in satisfaction scores. However, only the personal knowledge subscale provided a statistically significant contribution to the model. As seen in Table 4, the Standardized Beta coefficient for personal knowledge was 0.67 (95% CI = 0.53–0.83), indicating that, for every standard deviation increase in personal knowledge; the SWD would increase by 0.67 standard deviation units. The regression equation is given by:

$$\text{Satisfaction} = 5.42 + 0.67 * \text{Personal Knowledge}^a + 0.04 * \text{Flexible Environment}^b + 0.10 * \text{Social Norms}^b.$$

a, Statistically significant predictor; b, Non-significant predictors.

**Table 3** Mean, standard deviation, minimum and maximum scores for the EDM-r scale, subscales and satisfaction scale for the entire study sample ( $N = 143$ ).

	Minimum	Maximum	SD	
			Mean	Deviation
Overall EDM-r	52	94	76.15	8.74
Personal Knowledge	13	30	25.24	3.23
Flexible Environment	16	35	25.69	3.76
Social Norms	15	35	25.77	3.73
Satisfaction with Decision (SWD)	17	30	25.76	3.28

**Table 4** Contribution of the predictors in the regression equation to predict satisfaction with decision ( $N = 143$ ).

Predictor variables	Standardized $\beta$	$P$ value	95% confidence interval for $\beta$	
			Lower bound	Upper bound
Constant	5.42	0.003	1.89	9.03
Personal knowledge	0.67	<0.001	0.53	0.83
Flexible Environment	0.04	0.6	-0.09	0.16
Social norms	0.10	0.2	-0.04	0.21

**EDM-r score and medication decision**

Results from the analyses showed no significant relationship of any of the socio-demographic characteristics or health histories with EDM-r score in this study sample, except for the choice on use of psychotropic medication. Mean scores of EDM-r and its subscales for those who chose not to take or continue their medication for anxiety during pregnancy and those that did are presented in Table 5.

Total EDM-r scores were significantly lower ( $P < 0.05$ ) in the group that chose not to start or discontinue medication compared with those that chose to continue. Significant differences were also noted for the flexible environment ( $P < 0.05$ ) and awareness of social norms ( $P < 0.05$ ) subscales, but not for the personal knowledge subscale ( $P = 0.10$ ). There was also no significant difference in SWD among women who did or did not choose to continue psychotropic medication ( $P = 0.21$ ). A hand count of the results revealed the most commonly mentioned psychotropic medications used were Sertraline (Zoloft), Citalopram (Celexa) and Fluoxetine (Prozac), followed by Bupropion (Wellbutrin) and Escitalopram (Lexapro) respectively. Paroxetine (Paxil) was only mentioned twice and both women chose to discontinue it.

**Table 5** Mean (SD) of EMD-r and subscale scores for participants that chose not to start or continue medication compared with those who chose to ( $n = 114$ ).

Variable	Chose not to start or continue medication $n = 42$	Chose to start or continue medication $n = 72$	$t$ value	$P$ value
Total EDM-r score	74.1 (9.6)	77.9 (7.7)	-2.19	*0.03
Personal knowledge	24.8 (3.6)	25.8 (2.7)	-1.63	0.10
Flexible environment	24.7 (4.4)	26.4 (3.1)	-2.06	*0.04
Social norms	25 (4)	26.6 (3.7)	-2.07	*0.04
Satisfaction with decision	25.6 (3.4)	26.4 (3.4)	-1.26	0.21

\* $P < 0.05$ .

**Discussion**

**Emancipated decision-making and satisfaction with the decision**

Our results suggest overall that women who scored high on the EDM-r were significantly more satisfied with their decision and that personal knowledge was the most significant predictor for SWD. Therefore, as in previous studies, EDM was predictive for SWD (Wittmann-Price 2006, Wittmann-Price & Bhattacharya 2008, Wittmann-Price *et al.* 2011). Our study sample score mean of 76.15 (SD 8.74) out of a possible 100 indicates relatively high scores on the EDM-r, suggesting that overall, the women in this study were using an EDM process. It is possible that women who chose to participate in this online study felt a greater awareness of the issues surrounding this decision and the responsibility inherent in making it. Having made their decision and feeling satisfied with the decision empowered them to want to share their experiences and contribute to the research. Another possibility is that the homogeneity of group, which was primarily White, well-educated and of moderate to higher income level, may have felt more emancipated and satisfied because they had better access to information and care. The majority of the women (89%) were also living with the father of the baby, which may have provided a sense of support and stability in their lives that strengthened their sense of emancipation and satisfaction.

The results of this study suggest that personal knowledge was the only subscale that predicted SWD. The decision to take a medication or not in pregnancy may be more complicated than many other healthcare choices women must

make, yet personal knowledge was the best predictor of satisfaction in all previous studies testing EDM including: testing infant feeding, pain management in labour and choice of delivery (Wittmann-Price 2006, Wittmann-Price & Bhat-tacharya 2008, Wittmann-Price *et al.* 2011). This indicates that personal knowledge is a variable that needs exploration for expression and specific nursing consideration in women's decision-making process about healthcare issues. Although awareness of social norms and a flexible environment that supported their decision was important, they did not factor as importantly in making a decision that they felt was best for them, they were satisfied with and ultimately the one they could live with.

### Emancipated decision-making and the choice of medication use

There were no significant demographic differences between women who did and did not use EDM except for the decision to continue or not continue psychotropic medication. When we compared women who chose to continue or start a medication (50%) with women who chose to discontinue or not start a medication (29%) we found that women who chose to continue or start a medication had significantly higher scores in EDM-r than those who chose to stop or not begin to take a medication.

Women who chose to continue or start a psychotropic medication scored higher on both the awareness of social norms and flexible environment subscales of the EDM-r. Since EDM was also significantly different between groups, awareness of social norms and a flexible environment may have been factors that predicted an EDM. In contrast, there were no differences in SWD or personal knowledge between the two groups but those women who scored higher on personal knowledge regardless of their choice also were more satisfied with the decision. This finding has great implications for nursing interventions made solely on evidence without the consideration of personal knowledge. There are possibly many reasons why personal knowledge was not significant for EDM between those who did and did not choose to start or continue psychotropic medication. Perhaps women may be sensing what is best for them regardless of what they are hearing from their healthcare providers, friends and the media. Women who chose to discontinue or not start a medication may feel that any risk is not worth taking, while women who chose to continue or start a medication may recognize, that for them, the risks associated with psychotropic medication use in pregnancy is overshadowed by the risks incurred when their mental health is compromised. Having made a personal decision that they felt was best for their situation, the women

in both groups were satisfied with the decision-making process used to achieve that decision. Women who discontinued psychotropic medications scored significantly lower on awareness of social norms subscale which suggests that they were more susceptible to attitudes and beliefs of those around them. Flexible environment, or support for the decision a woman has made, was significantly higher in women who chose to continue or start a medication. This may reflect a woman's need to get information and support from her healthcare providers and to be a part of the decision-making process for her to feel in control of the decision.

### Study limitations

Generalizability of this study is limited due to recruitment strategies, lack of diversity, the exclusion of women who terminated their pregnancies and the lack of data on those women who viewed the survey but chose not to participate. Because this study included an anonymous web-based survey method, it was not possible to assess the total response rate and therefore quantify the likely bias. This research methodology was chosen for several reasons; the authors lacked access to a sufficient number of pregnant women with mental health issues who may be making this decision, limited financial resources, the desire to explore this issue beyond one practice or locality and an interest in testing the efficacy of web-based research. We also recognize recruitment strategies may have restricted women who did not have computer access from responding to the survey. Despite turning to the World Wide Web in an effort to recruit a diversified study population, the majority of our study population described themselves as White. Although, the reason for this phenomenon is unknown in our study, there are few studies that have examined Internet use by minority or underserved populations. Two studies suggest that internet-based research would be a valuable tool for use in African American populations (Russell *et al.* 2010, Scott-Johnson *et al.* 2010). In addition, the lack of response from minority women may have been related to personal cultural beliefs and practices. One study looking at the relationship of stigma of depression and race that recruited a total of 532 women (47% were of Black or African American descent and 42% were White) found that women of Black or African American descent associate more stigma to depression than White women, regardless of their own depression status and were more likely to endorse that depression should be kept a secret (O'Mahen *et al.* 2011). Therefore, cultural perceptions of mental illness may have also been a limiting factor. Future studies to further examine this phenomenon in web-based surveys are warranted. Finally, our cross-sectional study design restricts the assump-

### What is already known about this topic?

- The risk of foetal exposure to medication use in pregnancy is often over-estimated by both women and healthcare providers.
- Social stigma plays a significant role in decisions related to maternal mental illness.
- Family and healthcare providers' beliefs and attitudes influence women's healthcare decisions in pregnancy.

### What this paper adds?

- Women's decision-making regarding psychotropic medication use for anxiety and/or depression in pregnancy is often influenced by oppressive social forces.
- Women who use an emancipated decision-making process in deciding to take or not take a medication for anxiety and/or depression are more satisfied with the decision-making process.
- The subconcept of personal knowledge is most predictive of satisfaction with the decision.

### Implications for practice and/or policy

- Healthcare providers need to be cognizant of their role in the oppressive milieu that often surrounds women's decision-making.
- Nurses can use their therapeutic communication skills to assess, educate and support pregnant women in their decision-making process.

tion that EDM precedes and causes Satisfaction with the Decision. However, despite our inability to extrapolate neither the levels of satisfaction/emancipation with decision-making nor the level of medication use to the general population of pregnant women with mental health issues, the relationship of scores from high to low satisfaction and emancipation was a valid one to explore.

### Conclusion

The findings of this study support the validity of a recently developed mid-range nursing theory, the Wittmann-Price EDM in Women's Healthcare, among women who are making a decision about whether or not to start or continue psychotropic medication during pregnancy. It is important to the nursing discipline and to women's health in general to increase awareness of the oppressive nature of the factors that influence women's decision-making in this population. Women who use an EDM process in deciding whether or not

to continue or start a medication in pregnancy for symptoms of anxiety and/or depression were significantly more satisfied with that decision in our study population. In our sample, women who chose to continue or start a medication were significantly more likely to have used an EDM process. This may indicate that women are able to overcome societal pressures of perceptions of risks of medication use in pregnancy and the stigma that surrounds mental health, particularly in motherhood through the development of personal knowledge, awareness of social norms and a flexible environment. The subconcept of personal knowledge plays a key role to satisfaction with the decision. Positive patient outcomes may be enhanced if communication with healthcare providers is open, encouraged and bidirectional, the decision made is supported and the women feel that it is the best decision they could make for themselves and their families.

Our study sample was generally homogeneous with the majority being White, highly educated, from a moderate to higher income level and living with the father of the baby. Therefore, future research should aim to include a more ethnically and economically diverse population, who may be more vulnerable to oppressive forces that surround this decision. It would also be helpful to learn more about and understand patterns of internet use by minority populations. The role of the subconcept of personal knowledge in EDM and SWD also warrants further investigation. In addition, research on how nurses might best support EDM, perhaps through the use of decisional aids or decisional counselling, are needed.

### Acknowledgements

We would like to express our appreciation to the women who participated in this study and to acknowledge all those women who struggle with this decision before, during, and after pregnancy.

### Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

### Conflict of interest

No conflict of interest has been declared by the authors.

### Author contributions

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE: ICHJE:[http://www.icmje.org/ethical\\_1author.html](http://www.icmje.org/ethical_1author.html))

- substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

## References

- Allison S.K. (2004) Psychotropic medication in pregnancy: ethical aspects and clinical management. *Journal of Perinatal and Neonatal Nursing* 18(3), 194–205.
- Alwan S., Reefhuis J., Rasmussen S.A., Olney R.S. & Friedman J.M. (2007) Use of selective serotonin-reuptake inhibitors in pregnancy and the risk of birth defects. *New England Journal of Medicine* 356(26), 2684–2692.
- Andersson L., Sundstrom-Poromaa I., Wulff M., Astrom M. & Bixo M. (2006) Depression and anxiety during pregnancy and six months postpartum: a follow-up study. *Acta Obstetrics and Gynecology Scandinavia* 85(8), 937–944.
- Armstrong C. (2008) ACOG Guidelines on psychiatric medication use during pregnancy and lactation. *American Family Physician* 78(6), 772.
- Baggley A., Navioz Y., Maltepe C., Koren G. & Einarson A. (2004) Determinants of women's decision making on whether to treat nausea and vomiting of pregnancy pharmacologically. *Journal of Midwifery and Womens Health* 49(4), 350–354.
- Bennett H.A., Einarson A., Taddio A., Koren G. & Einarson T.R. (2004) Prevalence of depression during pregnancy: systematic review. *Obstetrics and Gynecology* 103(4), 698–709.
- Bilszta J.L., Tsuchiya S., Han K., Buist A.E. & Einarson A. (2011) Primary care physician's attitudes and practices regarding antidepressant use during pregnancy: a survey of two countries. *Archives of Women's Mental Health* 14(1), 71–75.
- Bonari L., Koren G., Einarson T.R., Jasper J.D., Taddio A. & Einarson A. (2005) Use of antidepressants by pregnant women: evaluation of perception of risk, efficacy of evidence based counseling and determinants of decision making. *Archives of Womens Mental Health* 8(4), 214–220.
- Chambers C.D., Johnson K.A., Dick L.M., Felix R.J. & Jones K.L. (1996) Birth outcomes in pregnant women taking fluoxetine. *New England Journal of Medicine* 335(14), 1010–1015.
- Chambers C.D., Polifka J.E. & Friedman J.M. (2008) Drug safety in pregnant women and their babies: ignorance not bliss. *Clinical Pharmacology and Therapeutics* 83(1), 181–183.
- Chung T.K., Lau T.K., Yip A.S., Chiu H.F. & Lee D.T. (2001) Antepartum depressive symptomatology is associated with adverse obstetric and neonatal outcomes. *Psychosomatic Medicine* 63(5), 830–834.
- Cohen L.S., Altshuler L.L., Harlow B.L., Nonacs R., Newport D.J., Viguera A.C., Suri R., Burt V.K., Hendrick V., Reminick A.M., Loughhead A., Vitonis A.F. & Stowe Z.N. (2006) Relapse of major depression during pregnancy in women who maintain or discontinue antidepressant treatment. *The Journal of the American Medical Association* 295(5), 499–507.
- Diaz-Caneja A. & Johnson S. (2004) The views and experiences of severely mentally ill mothers—a qualitative study. *Social Psychiatry and Psychiatric Epidemiology* 39(6), 472–482.
- Einarson A. (2005) Abrupt discontinuation of psychotropic drugs following confirmation of pregnancy: a risky practice. *Journal of Obstetrics and Gynaecology Canada* 27(11), 1019–1022.
- Faisal-Cury A. & Rossi Menezes P. (2007) Prevalence of anxiety and depression during pregnancy in a private setting sample. *Archives of Women's Mental Health* 10(1), 25–32.
- Gentile S. (2005) The safety of newer antidepressants in pregnancy and breastfeeding. *Drug Safety* 28(2), 137–152.
- Heron J., O'Connor T.G., Evans J., Golding J. & Glover V. (2004) The course of anxiety and depression through pregnancy and the postpartum in a community sample. *Journal of Affective Disorders* 80(1), 65–73.
- Holmes-Rovner M., Kroll J., Schmitt N., Rovner D.R., Breer M.L., Rothert M.L., Padonu G. & Talarczyk G. (1996) Patient satisfaction with health care decisions: the satisfaction with decision scale. *Medical Decision Making* 16(1), 58–64.
- Jasper J.D., Goel R., Einarson A., Gallo M. & Koren G. (2001) Effects of framing on teratogenic risk perception in pregnant women. *Lancet* 358(9289), 1237–1238.
- Kallen B.A. & Otterblad Olausson P. (2007) Maternal use of selective serotonin reuptake inhibitors in early pregnancy and infant congenital malformations. *Birth Defects Research. Part A Clinical and Molecular Teratology* 79(4), 301–308.
- Kelly C.M. & Jorm A.F. (2007) Stigma and mood disorders. *Current Opinions in Psychiatry* 20, 13–16.
- Krumm S. & Becker T. (2006) Subjective views of motherhood in women with mental illness – a sociological perspective. *Journal of Mental Health* 15(4), 449–460.
- Lee A.M., Lam S.K., Sze Mun Lau S.M., Chong C.S., Chui H.W. & Fong D.Y. (2007) Prevalence, course and risk factors for antenatal anxiety and depression. *Obstetrics and Gynecology* 110(5), 1102–1112.
- Lorenzo L., Byers B. & Einarson A. (2011) Antidepressant use in pregnancy. *Expert Opinion Drug Safety* 10(6), 883–889. Downloaded from informahealth.com.
- Louik C., Lin A.E., Werler M.M., Hernandez-Diaz S. & Mitchell A.A. (2007) First-trimester use of selective serotonin-reuptake inhibitors and the risk of birth defects. *New England Journal of Medicine* 356(26), 2675–2683.
- Miller L.J. (2009) Ethical issues in perinatal mental health. *Psychiatric Clinics of North America* 32(2), 259–270.
- Mitchell A.A., Gilboa S.M., Werler M.M., Kelley K.E., Louik C. & Hernandez-Diaz S. (2011) Medication use during pregnancy, with particular focus on prescription drugs: 1976–2008. *American Journal of Obstetrics and Gynecology* 205(1), 51 e1–51 e8.
- O'Connor A.M., Drake E.R., Fiset V., Graham I.D., Laupacis A. & Tugwell P. (1999) The Ottawa patient decision aids. *Effective Clinical Practice* 2(4), 163–170.
- O'Mahen H.A., Henshaw E., Jones J.M. & Flynn H.A. (2011) Stigma and depression during pregnancy: does race matter? *The Journal of Nerve and Mental Disease* 199(4), 257–262.
- Orr S.T., Blazer D.G., James S.A. & Reiter J.P. (2007) Depressive symptoms and indicators of maternal health status during pregnancy. *Journal of Women's Health (Larchmt)* 16(4), 535–542.
- Patel S.R. & Wisner K.L. (2011) Decision making for depression treatment during pregnancy and the postpartum period. *Depress Anxiety* 28(7), 589–595.

- Pole M., Einarson A., Pairedeau N., Einarson T. & Koren G. (2000) Drug labeling and risk perceptions of teratogenicity: a survey of pregnant Canadian women and their health professionals. *Journal of Clinical Pharmacology* 40(6), 573–577.
- Russell C.W., Boggs D.A., Palmer J.R. & Rosenberg L. (2010) Use of a web-based questionnaire in the Black Women's Health Study. *American Journal of Epidemiology* 172(11), 1286–1291.
- Sandelowski M., Lambe C. & Barroso J. (2004) Stigma in HIV-positive women. *Journal of Nursing Scholarship* 36(2), 122–128.
- Sanz E., Gomez-Lopez T. & Martinez-Quintas M.J. (2001) Perception of teratogenic risk of common medicines. *European Journal of Obstetrics, Gynecology and Reproductive Biology* 95(1), 127–131.
- Scott-Johnson P.E., Gross S.M. & Browne D.C. (2010) Web-based data collection: an effective strategy for increasing African Americans' participation in health-related research. *Ethnicity and Disease* 20(1 Suppl 1), S1-201–S1-206.
- Sjostrom K., Valentin L., Thelin T. & Marsal K. (1997) Maternal anxiety in late pregnancy and fetal hemodynamics. *European Journal of Obstetrics, Gynecology and Reproductive Biology* 74(2), 149–155.
- van Trig A.M., Waardenburg C.M., Haaijer-Ruskamp F.M. & de Jong-van den Berg L.T. (1994) Questions about drugs: how do pregnant women solve them? *Pharmacy World and Science* 16(6), 254–259.
- Wills C.E. & Holmes-Rovner M. (2006) Integrating decision making and mental health interventions research: research directions. *Clinical Psychology* 13(1), 9–25.
- Wittmann-Price R.A. (2004) Emancipation in decision-making in women's health care. *Journal of Advanced Nursing* 47(4), 437–445.
- Wittmann-Price R.A. (2006) Exploring the subconcepts of the Wittmann-Price theory of emancipated decision-making in women's health care. *Journal of Nursing Scholarship* 38(4), 377–382.
- Wittmann-Price R.A. & Bhattacharya A. (2008) Reexploring the subconcepts of the Wittmann-Price theory of emancipated decision making in women's healthcare. *ANS Advance Nursing Science* 31(3), 225–236.
- Wittmann-Price R.A., Fliszar R. & Bhattacharya A. (2011) Elective cesarean births: are women making an emancipated decision? *Applied Nursing Science* 24(3), 147–152.
- Yonkers K.A., Wisner K.L., Stewart D.E., Oberlander T.F., Dell D.L., Stotland N., Ramin S., Chaudron L. & Lockwood C. (2009) The management of depression during pregnancy: a report from the American Psychiatric Association and the American College of Obstetricians and Gynecologists. *Obstetrics and Gynecology* 114(3), 703–713.

The *Journal of Advanced Nursing (JAN)* is an international, peer-reviewed, scientific journal. *JAN* contributes to the advancement of evidence-based nursing, midwifery and health care by disseminating high quality research and scholarship of contemporary relevance and with potential to advance knowledge for practice, education, management or policy. *JAN* publishes research reviews, original research reports and methodological and theoretical papers.

For further information, please visit *JAN* on the Wiley Online Library website: [www.wileyonlinelibrary.com/journal/jan](http://www.wileyonlinelibrary.com/journal/jan)

**Reasons to publish your work in *JAN*:**

- **High-impact forum:** the world's most cited nursing journal, with an Impact Factor of 1.527 – ranked 14/101 in the 2012 ISI Journal Citation Reports © (Nursing (Social Science)).
- **Most read nursing journal in the world:** over 3 million articles downloaded online per year and accessible in over 10,000 libraries worldwide (including over 3,500 in developing countries with free or low cost access).
- **Fast and easy online submission:** online submission at <http://mc.manuscriptcentral.com/jan>.
- **Positive publishing experience:** rapid double-blind peer review with constructive feedback.
- **Rapid online publication in five weeks:** average time from final manuscript arriving in production to online publication.
- **Online Open:** the option to pay to make your article freely and openly accessible to non-subscribers upon publication on Wiley Online Library, as well as the option to deposit the article in your own or your funding agency's preferred archive (e.g. PubMed).