PERCEPTION TOWARD CONDUCTING THE CENTERING PREGNANCY MODEL IN THE EGYPTIAN TEACHING HOSPITALS: A STEP TO IMPROVE THE QUALITY OF ANTENATAL CARE

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ABSTRACT: *This study looked at assessing the perception of the health care providers toward the centering pregnancy model. A descriptive, cross sectional analytical design was utilized. This study was conducted at Qasr al-Aini, Cairo University maternity hospitals. All resident doctors, registered nurses working in the maternity hospital were invited to participate in the study. Data were collected utilized a structured self-administered questionnaire. Most of sample perceived the centering pregnancy model of care as it is an important method of antenatal care helps in early detection of risks (91.6%), improves patient empowerment and learning (94.2%), and enhances mother's self-care (93.3%). The most important barriers to conduct the present model in the governmental setting were; lack of staff training programs (94.2%) and hospital's financial constraints (95.0%). On conclusion, the centering pregnancy model has many benefits for pregnant women. Few barriers in the governmental setting can be overcome by policy makers' decisions.*

KEYWORDS: Perception. Prenatal care, Centering pregnancy, Group care.

INTRODUCTION

The United Nation Millennium Development Goal (MDG) on maternal health aim is reducing the number of women deaths during pregnancy and childbirth by three quarters between 1990 and 2015 (WHO 2012). One of the strategies aimed at addressing maternal mortality in developing countries is the implementation of good antenatal care (WHO 2002). Antenatal care refers to the regular medical and nursing care recommended for women during pregnancy. Furthermore, it is a type of preventive care with the goal of providing regular check up that allows doctors or midwives to prevent, detect as well as treat the potential health problems (WHO 2005). In developed countries, 97% of the pregnant women make at least one antenatal visit and 99% of these pregnant women deliver with skilled birth attendants (Mrisho et al. 2009). Within the usual parameters of prenatal care, it is challenging to fully address the complex psychosocial needs of the mother and her family as well as concerns for safe physical outcomes for the mother and infant. Health care providers continue to search for ways to optimize the delivery of prenatal care to provide the best possible outcomes for mothers and babies (Ofovwe & Ofili, 2005). Most developed countries use traditional model of prenatal care which is based on larger number of visits, approximately 7-10 visits. They include starting monthly visits up to 28 weeks, followed by weekly up to 36 weeks until delivery (Say and Raine, 2007). Many women especially the first time mothers, attended antenatal classes which prepare them for labor and delivery, and usually include basic baby care skills. Although this knowledge and related skills are important for successful pregnancy and childbirth. Women need different knowledge and skills for successful parenthood. The WHO

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

developed ten principles reflecting effective prenatal care (Gharoro & Igbafe, 2000). The principles emphasize that care for normal pregnancy and birth should be comprehensive and simplified whenever possible. Multidisciplinary and holistic approaches should be incorporated in caring for pregnant women's biological, intellectual, emotional, social, and cultural needs. The WHO principles also considered the need to make care family centered, culturally appropriate and women empowerment. The final principle stipulates that care should be based on respect for privacy, dignity and confidentiality of pregnant women (Chalmers et al. 2001). Because multiple prenatal outcomes are largely dependent on modifiable maternal risk factors (e.g., weight or smoking) and because of worsening outcomes, newer models of prenatal care and education are emerging.

Centering pregnancy is a model for providing complete prenatal care to women within a group setting. Prenatal assessment, knowledge and skills development occur in an atmosphere that facilitates learning, encourages free exchange, and develops mutual support (JHPIEGO 2007). In the group center pregnancy model, there are 8-12 women in each centering group, and the same women are together for each session. Every one receives her prenatal care within the group; they listen to the baby's heart beat, take blood pressure, and more (Berwick, 2003). The group centering pregnancy model shown to improve both maternal and neonatal outcomes. Further, Grady & Bloom (2004) added, centering pregnancy model not only has a powerful effect on the women who participate but also provides benefits for the system. A scheduling pattern that provides for 8 to 12 women to receive their prenatal visits in a 2-hour time frame should be cost efficient. With a strong evidence base, the centering pregnancy could be used as a best practices model, which would require major changes in perception and practice of prenatal care.

Material and methods

Aim

This study looked at assessing the perception of the health care providers toward the centering pregnancy model.

Study design

Descriptive, cross sectional analytical design.

Research questions

1-What are the benefits of the centering pregnancy model?
2-What are the barriers to conduct the centering pregnancy model in the teaching hospitals?
3-What are the possible ways to conduct the centering pregnancy model in the teaching hospitals?

Setting

This study was conducted at Qasr al-Aini, Cairo University maternity hospitals, at the antenatal clinics and the all internal hospital's units.

Sample

All resident doctors, registered nurses working in the university maternity hospital were invited to participate in the present study. In addition to all interns (i.e. medical & nursing) on rotation to obstetrics and gynecology units during the study's period were eligible to participate in the present study.

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

Protection of human rights

An official permission was obtained from the administrative authorities of Qasr al-Aini maternity hospital of Cairo University for conducting this study. In addition, permission was obtained to conduct the study in the selected departments. Cover letters were designed and attached to each questionnaire and addressed the purpose of the study. Informed consent was attached and guaranteed confidentiality, ensuring that participation was voluntary.

Tools and measurements

Data were collected utilized a structured self-administered questionnaire. This tool designed based on pilot sample of 30 medical and nursing intern students. They were asked if they were familiar with centering pregnancy model for antenatal care, if they adhered to this model in their training/or study (or why not), their own views on the quality of the present model, and the health care providers attitudes towards modifying their practices. They were also asked about the barriers in the governmental setting and their views to overcome these barriers. All their answers analyzed, summarized, and organized into three main categories; benefits, barriers and ways of solving. The first part questionnaire includes sample's socio-demographic data. The second part designed to examine the health care providers' perception toward the benefits of the centering pregnancy model of seven items. While the third part includes barriers to conduct the centering pregnancy model of sixteen items. Both parts (the second and third) utilized a four-point likert scale (1 =agree, 2=strongly agree, 3= disagree, and 4= strongly disagree). While the fourth part includes different ways to overcome the barriers. Questionnaire reliabilities of the second, third and fourth parts were assessed using Cronbach's alpha. For each subscale, the reliability was (0.80) for benefits, (0.85) for barriers and (0.76) for ways to overcome barriers. While content validity was revised by professors of nursing administration (n=3), faculty of nursing- Cairo University.

Data collection procedure

The present study was grounded by the goal attainment theory which developed by Imogene King in the early 1960s. The theory explains different factors which may affect the goals attainment. King (1981) viewed perception as the most important variable because perception influences behavior. King model has three interacting systems; personal, interpersonal and social (King, 1971). The present study supposed that, organization policy, medical authority and decision makers, all in term of social system may affect the type and quality of care provided by medical and nursing staff. In addition, goal attainment for improvement the quality of the antenatal care with centering pregnancy model may mainly depends on the interpersonal systems. The interpersonal system supposed that, two people, who are usually strangers, come together in a health care organization to help and to be helped to maintain a state of health that permits functioning in roles. Finally, all affected by personal system in term of perception. All the health care providers were invited to share their experiences in a one to one interview format and interviewed once. The interview process commenced with discussion of the study purpose. To ensure better participation, communication with nursing staff and interns was among the head nurse of each unit as well as the team leaders of the intern students' groups. All invited to share through written and oral announcements.

Statistical analysis

Statistical package for the social science (SPSS) was used for statistical analysis of data. Regarding descriptive statistics, data was summarized using; 1) the arithmetic mean as an average, describing

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

the central tendency of observations for each variable studied; 2) The standard deviation as a measure of dispersion of results around the mean; 3) the frequency and percentage.

Sample's demographic characteristics

Regarding the health care providers characteristics, sample's age ranged between 18-50 years old with mean of 29.7 ±7.7 SD. In addition, staff rank was from all different medical categories, most of sample was intern nurses. Further, years of experience reached up to fifteen years (table 1).

Table 1. Sample's demographic characteristics

Sample characteristics	n=120	
Age range	No	%
18-28	90	75.0
29-39	20	16.7
40-50	7	5.8
50+	3	2.5
Mean 29.7 SD ±7.7		
Staff categories		
Doctor	6	5.0
Staff nurse	20	16.7
Head nurse	4	3.3
Intern nurse	75	62.5
Intern doctor	15	12.5
Years of experience		
0-5 years	96	80.0
6-10 years	9	7.5
11-15 years	11	9.2
Above 15 years	4	3.3

Benefits of the centering pregnancy model.

Regarding the health care providers' perception of the centering pregnancy model's benefits, most of them perceived it as an important method of antenatal care helps in early detection of risks (91.6%), improves patient empowerment and learning (94.2%), and enhances mothers self-care (93.3%), (table 2).

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

Table 2. Benefits of the centering pregnancy model.

Benefits	n=120			
	Agree	Strongly agree	Disagree	Strongly disagree
	No (%)	No (%)	No (%)	No (%)
Early detection of risks.	40 (33.3)	70 (58.3)	10 (8.4)	0 (0.0)
Better maternal outcomes.	25 (20.8)	60 (50.0)	20 (16.7)	15 (12.5)
Better newborn outcomes.	10 (8.4)	50 (41.6)	45 (37.5)	15 (12.5)
Patient empowerment and learning.	16 (13.4)	97 (80.8)	7 (5.8)	0 (0.0)
Enhances self-care.	44 (36.7)	68 (56.6)	8 (6.7)	0 (0.0)
Provides support and friendship among group members.	20 (16.7)	46 (38.3)	17 (14.2)	37(30.8)
Cost-effective model of care.	39 (32.5)	66 (55.0)	15 (12.5)	0 (0.0)

Barriers for conducting the centering pregnancy model.

The most important barriers to conduct the centering pregnancy model in the governmental setting were; lack of staff training programs (94.2%), hospital's financial constrains (95.0%), the priority is for high risk pregnancy (85.0%), lack of mothers' confidentiality (100%) and lack of mother/ family awareness (91.6%), (table 3).

Table 3.Barriers for conducting the centering pregnancy model.

Type of Barriers	n=120			
	Agree	Strongly agree	Disagree	Strongly disagree
	No (%)	No (%)	No (%)	No (%)
Health care system related barriers				
Lack of time.	33 (27.5)	63 (52.5)	24 (20.0)	0 (0.0)
Regulatory issues (policies).	73 (60.8)	31 (25.8)	16 (13.4)	0 (0.0)
Inadequate staff numbers.	57 (47.5)	35 (29.2)	25 (20.8)	3 (2.5)
Lack of training programs.	3 (2.5)	110 (91.7)	7 (5.8)	0 (0.0)
Absence of suitable educational setting.	15 (12.5)	29 (24.2)	36 (30.0)	40 (33.3)
Financial constrains.	49 (40.8)	65 (54.2)	6 (5.0)	0 (0.0)
Health care provider related barriers				
Need supervision from medical staff.	15 (12.5)	30 (25.0)	39 (32.5)	36 (30.0)
Nursing staff qualifications.	52 (43.3)	0 (0.0)	11 (9.2)	57 (47.5)
Dr. /RN unwilling attitude.	38 (31.7)	37 (30.8)	21 (17.5)	24 (20.0)
The priority is for high risk pregnancy.	13 (10.8)	89 (74.2)	9 (7.5)	9 (7.5)
Ignorance to involve the pregnant women in decisions.	16 (13.4)	43 (35.8)	61 (50.8)	0 (0.0)

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

European Journal of Biology and Medical Science Research
Vol.3, No.1, pp.9-18, March 2015
Published by European Centre for Research Training and Development UK (www.eajournals.org)

Patient related barriers				
Patient unwilling.	30 (25.0)	18 (15.0)	44 (36.7)	28 (23.3)
Different social aspects.	18 (15.0)	65 (54.2)	12 (10.0)	25 (20.8)
Culturally unfamiliar.	12 (10.0)	19 (15.8)	23 (19.2)	66 (55.0)
Lack of confidentiality.	31 (25.8)	89 (74.2)	0 (0.0)	0 (0.0)
Lack of mother/family awareness.	30 (25.0)	80 (66.6)	10 (8.4)	0 (0.0)

Ways to conduct the centering pregnancy model in the teaching hospitals.

Regarding the health care providers' suggestions to conduct the centering pregnancy model of antenatal care, increase women awareness related to the benefits of this type of service, provide the services by simple paid money for setting, consider the service as a part of hospital policy and provide staff rewards were the most important suggestions (table 4).

Table 4. Ways to conduct the centered pregnancy model in the teaching hospitals.

Ways to conduct the centering pregnancy model	n=120	
	No	%
Increase women awareness related to the aim and benefits of this type of service.	89	74.2
Train the medical and nursing students to conduct the sessions.	64	53.3
Conducting frequent training programs.	77	64.2
Specify experts from nursing staff by rotation.	73	60.8
Building chat groups on mobile or internet for better communication.	43	35.8
Provide the services by simple paid money for setting.	96	80.0
Consider the service as a part of hospital policy.	89	74.2
Conduct the classes after the routine outpatient scheduled time.	35	29.2
Provide staff rewards (money/certificates/day off/ position...ect.).	94	78.4

DISCUSSION

Centering pregnancy is an innovative model of group prenatal care. It is relationship centered among women, their families, and health care professionals (Massey, Rising and Ickovic, 2006). The present study revealed that, sample's age ranged between 18-50 years old with different medical categories. These variations in age and work categories reflect wide range of perceptions and solutions. Further, most of the sample was intern nurses, the perception of the nurses on merging the centering pregnancy model with the antenatal care services will help to identify whether there are any gaps in their knowledge and clinical training. Further, their perception may help to identify how to manage the available resources and facilities. When these gaps are identified, it will be possible for all the stakeholders to attend to them in order to strengthen and improve the quality of services.

Regarding the health care providers' perception of the centering pregnancy model's benefits, most of them perceived it as an important method of antenatal care that helps in early detection of risks, improves patient empowerment and learning, and enhances mother's self-care. These results can

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

be interpreted as; in the governmental setting the health care providers often rely on the mother's ability to be knowledgeable about pregnancy and parenting information. The centering pregnancy model may access the pregnant women to proper information on issues related to pregnancy and delivery and empowering them to make positive changes in their health-care behaviors. The present results go on the same line with Bailey, Crane & Nugent (2008) who asserted that, to meet the educational needs of pregnant women, an array of prenatal care delivery methods have evolved; however, the traditional educational approach has been system centered rather than patient centered. If pregnant women believed that self-care activities during pregnancy would be beneficial in reducing adverse outcomes of pregnancy and birth, they will likely to take action that they believed would reduce their risks (Anya, Hydara & Jaiteh, 2008).

Further, the present study revealed that, lack of staff training programs was one barrier to conduct the centering pregnancy model. This may be related to the hospital policy that doesn't permit free time for staff for self-development. Further, the financial situation inside the hospitals may be one factor that stands against conducting the free frequent educational programs. So, to incorporate the centering pregnancy model to the prenatal care and patient's education in a comprehensive format, the staff nurses should be trained on this type of care. Walker & Worrell (2008) reported that, traditionally, nurses have been at the heart of childbirth classes. While Ali etal. (2006) reported that, satisfied patients are likely to come back for the services and recommend services to others. It is important to upgrade existing facilities, and provide good quality antenatal care. It is well known that most deaths can be prevented if adequate and timely obstetric care is provided (Berwick, 2003). Nurses have an opportunity to be more involved in prenatal education using the centering pregnancy model. The present result is congruent with Rising et al. (2004) study who said that, it was clear that certain components were essential to the centering pregnancy model. All providers should train on these essential elements that contribute to success with this model and foster relationship-centered care. Moreover, the present study referred to the hospitals' financial constrain as a one barrier to conduct the centering pregnancy model. This result could be interpreted in terms of lack of financial resources for; upgrading the staff, facilitating training programs, providing special setting to conduct the classes, providing financial reward to initiate the staff and reducing the total follow up fee. There were few studies reflect the financial constrain in most developed countries in term of late initiation of antenatal care among teenage pregnancy, unemployment, single women and black women (Rowe, etal, 2008 and Kupek, etal 2002). While, Healthy People 2020 list two maternal, infant, and child health goals related to prenatal care. One goal is to increase the proportion of pregnant women who receive early and adequate free prenatal care, and the other goal is to increase the proportion of women who attend a series of free prepared childbirth classes (U.S. Department of Health and Human Services, 2009).

Moreover, the present study results denoted that, lack of mother's confidentiality and lack of mother/family awareness perceived by the health care providers as the two important barriers to conduct the centering pregnancy model. These results may be affected by the culture's nature, the type of women social categories, the type of knowledge received and perceived by the pregnant woman as well as the level of education for both the health care providers and the pregnant women. The present study result goes on the same line with Ndidi and Oseremen (2010) who reported in their study that, most women booked late because of a belief that there are no advantages in booking for antenatal care in the first three months of pregnancy. This seems to be because that

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

antenatal care is viewed primarily as curative rather than preventive in the study population. Ickovics etal. (2003) reported, all centering pregnancy care group sessions occur within the group setting except for the initial assessment and medical or psychosocial concerns involving the need for privacy. Women begin prenatal care in the usual manner with history and physical examination in the office/clinic space. Then, they are invited to join 8 to 12 other women of similar gestational age. Community based health education programs are needed to correct the misconceptions about antenatal care.

Regarding the health care providers' suggestions to conduct this model of antenatal care. The present result denoted that, it is important to increase women awareness related to the aim and benefits of the service. Actually, sometimes the reason to delay or ignore utilization of the service is misconception of the benefits, especially in rural areas, where the service is with limited quality. The present result is agreed with Gharoro and Igbafe (2000) who reported that ignorance was the underlying factor in late initiation of antenatal care in two-fifth of pregnant women. Commencement of centering pregnancy care group during the antenatal care before 14 weeks of gestation allows for early commencement of health education and counseling on expected physiological changes, the normal course and possible complications of pregnancy, labor and puerperium (WHO, 2002).

Further, the present study result reflects the necessity to provide the service by little money. This result may goes on the opposite line with the global trend today. In most of developing countries, there is indeed a growing global movement towards the abolition of user fees as a way to redress barriers and inequity of access to maternity care. Moreover, the present result of integration of the service as a part of hospital's policy is go on the same line with the WHO recommendations for improving the quality of the antenatal care. Alleviating financial barriers must become a priority for policy makers if their will is really to accelerate the reduction of maternal and prenatal mortality in the developing world. The argument in support of free maternity care is founded on equity grounds that the poor would not and have not been able to afford to pay for the use of necessary services (WHO, 2005).

Conclusion

The centering pregnancy model has many benefits for pregnant women. Few barriers in the governmental setting can be overcome by policy makers' decisions.

Recommendations

Larger prospective studies to identify the pregnant women's perception and satisfaction related to this type of antenatal service are needed. Further, measures should be taken to improve teaching hospital services and rewards the staff on the duty.

ISSN 2053-406X(Print), ISSN 2053-4078(Online)

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ISSN 2053-406X(Print), ISSN 2053-4078(Online)