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Patient Experience with Provider-Patient Communication in CenteringPregnancy® Compared to Traditional Prenatal Care: A Program Evaluation

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Abstract

Background: CenteringPregnancy group prenatal care has been demonstrated to improve patient satisfaction and patient experience. (Ickovics, 2019). Patient experience is one aspect of patient satisfaction; it relates to patient perceptions of respect and involvement in decision-making that bestows a sense of agency and autonomy upon the individual.

Objective: To evaluate a newly implemented CenteringPregnancy program and compare outcomes with traditional prenatal care in the same institution, in terms of patient experience of respect, agency and autonomy.

Design: Evidence-based program evaluation, descriptive study with analysis.

Setting: Patients who had received group prenatal care or traditional prenatal care at an urban academic hospital between May 2019 and May 2020.

Patients: All patients registered in CenteringPregnancy group prenatal care were recruited. Patients who were registered for traditional prenatal care and were of similar risk status and gestation, were recruited from the same clinic during the same period.

Measurements: The author developed a survey that collected demographic data, and responses to closed-ended items from two reliable and validated surveys, the Mothers Autonomy in Decision Making (MADM) scale (Vedam, Stoll, Martin, et al., 2017a) and the Mothers on Respect (MOR) index (Vedam, Stoll, Rubaskin, et al., 2017b). Demographic data was reported by group. Surveys used Likert scales and results were scored, totaled and analyzed for each survey and each group.

Results: One hundred and six CenteringPregnancy patients were recruited and a similar number from traditional prenatal care. Sixty-nine respondents with completed survey responses were included in the program evaluation. The CenteringPregnancy group had 38 respondents and the traditional prenatal care group had 31. Pearson Chi Square tests were performed, and groups were similar in all categories: ethnicity (p = 0.834), age (p = 0.735), race (p = 0.613), parity (p = 0.076). There were no significant differences between groups for the MADM scale, (p = 0.244) or the MOR index, (p = 0.156).

Limitations: This was a program evaluation and the sample size was limited by the number of patients registered in the newly implemented program. The sample may not have represented all patients and all patient experiences being measured. Subjects were self-selected resulting in potential selection bias. Self-reporting allowed for errors in assignment to groups. The facilitators of group prenatal care may have lacked sufficient experience to conduct prenatal sessions with fidelity to the model of CenteringPregnancy care.

Conclusions: This program evaluation demonstrated that CenteringPregnancy patients experienced high levels of autonomy and respect in patient experience, similar to the traditional prenatal care group. There were no significant differences in outcomes for the MADM and MOR surveys.

Keywords

CenteringPregnancy, group prenatal care, patient satisfaction, patient experience, provider-patient satisfaction

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Patient Experience with Provider-Patient Communication in CenteringPregnancy Compared to Traditional Prenatal Care: A Program Evaluation

Respect and autonomy in decision-making are important characteristics of the patient experience that contribute to a patient's sense of agency and satisfaction. The findings of a 2019 systematic review of qualitative evidence suggest that initial or continued use of prenatal care services depends, in part, upon a positive experience in which women are treated respectfully (Downe et al., 2019). In the landmark series Listening to Mothers III Survey, almost half of women reported communication problems in prenatal care (Attanasio and Kozhimannil, 2015). Provider-patient communication is a metric of patient experience that correlates strongly with patient satisfaction (Berkowitz, 2016). According to Iannuzzi (2015) in a study that looked at drivers of patient satisfaction, specifically provider-patient interactions, they reported that *what* happens is less important than *how* it happens.

This paper reports an evaluation of a newly implemented group prenatal care program called CenteringPregnancy. The delivery of prenatal care in a group offers a different experience than traditional, individual focused prenatal care. In CenteringPregnancy each patient has the indicated physical assessment performed and then enters into a patient-driven group discussion that includes facilitator chosen exercises which solicit patient input, interaction, learning and peer support (Novick et al., 2013).

The CenteringPregnancy program was implemented at this site with specific patient outcomes targeted for improvement including preterm birth, postpartum depression, breastfeeding, contraceptive uptake, missed appointments, and patient satisfaction (C. Salva, personal communication, October 11, 2019). This program evaluation solely assessed patient satisfaction, as represented by patient experiences of respect, agency and autonomy in decision-

making. Survey responses of patients in the CenteringPregnancy program were compared to responses of traditional prenatal care patients.

Methods

Study design

This evidence-based practice program evaluation is an observational, descriptive study with analysis. A questionnaire was developed that requested consent, demographic data, and responses to survey questions related to patient experience of care. Survey items from two reliable and validated instruments, the Mothers Autonomy in Decision-Making scale (MADM) and the Mothers on Respect Index (MOR), were combined sequentially to comprise the questionnaire (Vedam, Stoll, Martin, et al., 2017a; Vedam, Stoll, Rubaskin, et al., 2017b). A total of 26 questions were asked. Responses of patients involved in the newly implemented CenteringPregnancy prenatal care program were compared to the responses of those who attended traditional prenatal care, over the course of the same 12 months. The purpose of the evaluation was to determine whether the CenteringPregnancy program achieved the same, higher, or lower scores in patient satisfaction with respect to patient-provider communication, when compared to traditional care.

Data collection was entirely web-based. Recruitment and data collection began on March 9, 2020 and ended on May 4, 2020. The questionnaire was set up on the Qualtrics software platform (https://www.qualtrics.com) and distributed in person and by text message using either a qr code or URL. Participants were able to complete the questionnaire on a mobile device or personal computer. Data was transferred to Excel and analyzed in SPSS.

Setting

The prenatal clinic is part of an urban university health system in the mid-Atlantic United States. The clinic serves a population that is predominantly non-Hispanic Black and Medicaid insured. Approval was received in advance from the Institutional Review Board. Recruitment of patients initially occurred in-person at the clinic. Due to the COVID-19 pandemic, in-person recruitment was halted after 4 days, and text messaging commenced as the sole and final means to recruit respondents.

Participants

Participants were recruited to evaluate the program if they had completed at least two visits in CenteringPregnancy or at least two visits in traditional prenatal care, within the past year. Individuals may have been pregnant or in the postpartum period when they were recruited. Initially, CenteringPregnancy patients were recruited when they arrived for a mid to late pregnancy session, having been enrolled since early pregnancy. Individuals were recruited from traditional care if they were presenting for a return visit and had already completed at least two prior prenatal visits for this pregnancy at the clinic. When recruitment switched to text messaging, individuals were recruited from CenteringPregnancy group lists and the clinic schedule, using the same criteria. Attempts were made to collect responses from a similar number of patients in each group, with an approximate total of 226 recruits. Exact numbers of recruits and response rates were difficult to track since there was no way to determine if all text messages were received. Follow-up text messages were sent up to two times in an effort to recruit individuals. Subjects in this study were self-selected. Seventy-six subjects started the survey and 69 completed it; 38 patients were in CenteringPregnancy and 31 patients were in traditional prenatal care.

Variables

The MADM scale was used to rate "the level of agency and autonomy that a person experiences when participating in decision-making conversations with a maternity provider" (Vedam, 2017a, p. 2). The MOR index was used "to assess the nature of provider-patient relationships, and access to person-centered care" (Vedam, 2017b, p.2). Responses from the MADM and the MOR questions were scored, separately totaled, and treated as two dependent variables. Each group of patients, CenteringPregnancy and traditional care, was treated as independent variables.

Data sources/measurement

Demographic data was self-reported. Ethnicity, race, age, and parity for the current pregnancy, was requested. (Parity was defined with license as "What number baby is this for you?") Demographic data was coded and analyzed by group. Both the MADM scale and the MOR index used Likert scales to measure patient responses. Cumulative totals for all items in each survey were compared by group. Both tools included a series of checkboxes for the respondent to use to identify the type of prenatal care provider as doctor or midwife. The checkboxes for type of provider were not used for the purposes of this program evaluation, since the program, not the providers, was being evaluated. Instead, the term "prenatal care-giver" was used. Figure 4 and Figure 5 are the MADM and MOR surveys as adapted for use in this project.

Bias

Some respondents from the CenteringPregnancy group may have participated in traditional prenatal care in a prior pregnancy. In such cases, respondents' prior experiences might have influenced their responses. Respondents in both groups may have been exposed to multiple health care providers or the same provider repeatedly. Their responses may have been influenced by the provider type, style, or personality.

Study size

This program evaluation was limited by the number of patients who had received care in the CenteringPregnancy program, and sample size analysis was not performed. Respondents to the questionnaire were between the ages of 15 and 45 who were registered patients for prenatal care at the clinic. From the onset of the program through January 2020, 106 patients had been or were currently enrolled in the CenteringPregnancy program. Most had cell phones and were contacted, though the exact number was not tracked. Traditional prenatal care patients were recruited until the numbers in each group were approximately equal.

Quantitative variables

All variables reported on were categorical. Demographic variables were reported as nominal variables. Responses to the MADM scale and MOR index were recorded on Likert scales and as such, were ordinal variables. Respondents' scores were totaled and interpreted using the MADM and MOR keys, which used quartiles for interpreting responses. Keys are shown in Table 1 for the MADM scale and Table 2 for the MOR index (Vedam, et al., 2017a, Vedam, et al., 2017b).

Statistical methods

Values are expressed as medians with a 5%/95% CI since analysis using SPSS showed group values for MADM and MOR were not normally distributed. Pearson Chi Square tests were performed to determine if there was a significant difference between groups for demographic variables. Groups were compared using Mann Whitney U tests. Significance was set at $p < 0.05$. Post hoc subgroup and sensitivity analyses were not performed.

Results

Participants

Over 200 patients were recruited to evaluate the program; 76 responded to the questionnaire. Seven respondents were eliminated because of missing data. Two of the 7 were undeclared by group.

For the CenteringPregnancy group, 106 patients were recruited and 41 patients responded to the questionnaire. Of the respondents, 29 were recruited in-person, before the limitations of in-person patient recruitment imposed by the COVID 19 pandemic. Twelve more were recruited by text messaging. Three respondents did not complete the questions and their data was eliminated from the analysis, yielding a total of 38.

A near equivalent number of traditional care patients were recruited and 33 patients responded to the questionnaire. Eight respondents were recruited in-person, pre-pandemic. Twenty-five respondents were recruited by text messaging. Two respondents from the traditional care group did not complete the questions, yielding a total of 31.

Descriptive data

Characteristics of respondents were reported by group and included: ethnicity, race, age and parity. Groups were not significantly different based on ethnicity, race, and age. Table 3 displays all demographic data.

Outcome data

Main results

The MADM scale for the CenteringPregnancy group did not meet assumptions of normality (*Mdn* = 36.5, 95% CI [32.5, 37.8], *SEM* = 1.3, skewness -1.78, kurtosis 3.36). The distribution of data in the traditional prenatal care group did meet assumptions of normality (*Mdn* = 35.0, 95% CI [31.4, 36.5], *SEM* = 1.3, skewness -0.60, kurtosis -0.56). The CenteringPregnancy group was more non-normal than the traditional care group. A respondent in

the CenteringPregnancy group was an outlier (total MADM score = 7, very low autonomy; MOR score = 77, very high respect). Group scores for the MADM scale were not significantly different between CenteringPregnancy and traditional prenatal care ($p = 0.244$) based on a Mann Whitney U test.

The MOR index score for the CenteringPregnancy group did not meet assumptions of normality (*Mdn* = 76.0, 95% CI [70.0, 76.9], *SEM* = 2.0, skewness -1.94, kurtosis 4.64). The distribution of data in the traditional prenatal care group did meet assumptions of normality (*Mdn* = 71.0, 95% CI [67.5, 74.3], *SEM* = 1.67, skewness -0.74, kurtosis 0.43). The CenteringPregnancy group was more non-normal than the traditional care group. A different respondent in the CenteringPregnancy group was an outlier (total MOR score = 29, very low autonomy; MADM score = 18, very low respect). Group scores for the MOR index were not statistically significant between CenteringPregnancy and traditional prenatal care ($p = 0.156$) based on a Mann Whitney U test.

Discussion

Key results

The purpose of this program evaluation was to report on outcomes related to patient experiences and interactions with providers in regard to feelings of respect, agency and autonomy, in CenteringPregnancy versus traditional prenatal care. Overall ratings of respect, agency and autonomy were high while differences between groups were not significant in the MADM scale or the MOR index.

Limitations

The respondents were self-selected. It is not known why those who were recruited did not respond and if their responses would have altered outcomes. The sample may have not been

representative of the variety of patient-provider experiences available in traditional prenatal care at this institution. The groups were not methodically matched and demographic data varied, with more respondents in the traditional care group older and with higher parity; their need for information and decision-making may have been much less than a younger, first time mother, and therefore the scores of this group may have been higher. Ethnic and racial mirroring was not studied, and could have been a factor in patient experience for some respondents.

Patients had to "opt-in" to participate in CenteringPregnancy, and may have been equally satisfied with their experiences because their care delivery met their expectations and desires. Results may have been confounded if respondents assigned themselves to the wrong study group. This could have occurred due to literacy or confusion in responding to the YES or NO statement, "I received most of my prenatal care in a GROUP with other moms (CenteringPregnancy)." (There was noted confusion about this question by one patient during the in-person recruitment period, as she thought that "GROUP" referred to all of the women in the waiting room.) The health care providers who facilitated CenteringPregnancy sessions were newly trained, and their approach to conducting CenteringPregnancy sessions may have reflected a learning curve as they transitioned from a more authoritative approach to a facilitative approach.

Interpretation

The initial results of this program evaluation demonstrated that the newly implemented CenteringPregnancy program, when compared to traditional prenatal care, offered similar patient experience of autonomy and respect at this institution. Mean scores for both the MADM scale and MOR index for both groups were each in the highest quartile, reflecting patient perception of high levels of patient autonomy and respect.

This program evaluation was based upon research that demonstrated that CenteringPregnancy provides a different patient experience than traditional care (Ickovics et al., 2007; Ickovics et al., 2019; Cunningham et al., 2017). The results of this evaluation are not consistent with the evidence, however overall ratings of patient experience were high in both groups. Therefore, this program evaluation supports the implementation of a CenteringPregnancy program at this institution. A more comprehensive evaluation of the implementation of CenteringPregnancy at this institution will be available when this program evaluation is considered together with patient outcome data on preterm birth, postpartum depression, breastfeeding, contraceptive uptake, and missed appointments, along with the results of a study on provider experience.

Generalizability

This program evaluation by its very construct is not research. As such, it is not generalizable. Those considering the implementation of a CenteringPregnancy program may find these results interesting and possibly helpful in the construction of their own program evaluation and analysis. Future research could utilize a sample size analysis, treating this program evaluation as a pilot study.

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Table 1.

MADM KEY: Level of Autonomy (by Quartiles)

Total Score	*Indication of Respect*
7 - 15	Very Low Patient Autonomy
16 - 24	Low Patient Autonomy
25 - 33	Moderate Patient Autonomy
34 - 42	High Patient Autonomy

Note. Adapted from The Mother's Autonomy in Decision Making (MADM) scale: Patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care," by S. Vedam, K. Stoll, K. Martin, N. Rubashkin, S. Partridge, D. Thordason & G. Jolicoeur, (2017). *PloS One,12*(2). (https://dx.doi.org/10.1371/journal.pone.0171804).

Table 2.

MOR KEY: Level of Respect Experienced (by quartiles)

Total Score	*Indication of Respect*
14 - 31	Very Low Respect
32 - 49	Low Respect
50 – 66	Moderate Respect
67 - 84	High Respect

Note. Adapted from The Mother's Autonomy in Decision Making (MADM) scale: Patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care," by S. Vedam, K. Stoll, K. Martin, N. Rubashkin, S. Partridge, D. Thordason & G. Jolicoeur, (2017). *PloS One*,*12*(2). (https://dx.doi.org/10.1371/journal.pone.0171804).

Table 3.

Demographics and Comparison of Respondents by Group

Group	CenteringPregnancy		Traditional Care		
	n	*%*	*n*	*%*	X^2
Spanish/Hispanic/Latina	2	5.2	2	6.4	70.045
Race					4.423
Black	27	71.0	22	70.9	
Asian	7	18.4	2	6.6	
White	3	7.8	3	9.6	
Other	1	2.6	4	3.2	
Age					.331
15-25	12	31.5	8	25.8	
26-35	22	57.8	20	64.5	
36-45	4	10.5	3	9.6	
Parity					10.965
0	22	57.8	8	25.8	
1	7	18.4	13	41.9	
2	3	7.8	4	12.9	
3	5	13.1	2	6.4	
4 or more	1	2.6	4	12.9	

Figure 1.

Mothers Autonomy in Decision-Making Items and Scoring

Please describe your experiences with decision making during your pregnancy, labor and/or birth.						
	Completely Disagree	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree	Completely Agree
My health care provider asked me how involved in decision-making I wanted to be.	1	2	3	4	5	6
My health care provider told me that there are different options for my maternity care.	1	2	3	4	5	6
My health care provider explained the advantages/disadvantages of the maternity care options.	1	2	3	4	5	6
My health care provider helped me understand all the information.	1	2	3	4	5	6
I was given enough time to thoroughly consider the different care options.	1	2	3	4	5	6
I was able to choose what I considered to be the best care options.	1	2	3	4	5	6
My health care provider respected my choices.	1	2	3	4	5	6
Sum of all circled items equals total score.						

Note. Adapted from The Mother's Autonomy in Decision Making (MADM) scale: Patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care," by S. Vedam, K. Stoll, K. Martin, N. Rubashkin, S. Partridge, D. Thordason & G. Jolicoeur, (2017). *PloS One,12*(2). (https://dx.doi.org/10.1371/journal.pone.0171804).

Figure 2.

Mothers on Respect Index Items and Scoring

A. Overall while making decisions about my pregnancy or birth care:						
	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Disagree
I felt comfortable asking questions	1	2	3	4	5	6
I felt comfortable declining care that was offered.	1	2	3	4	5	6
I felt comfortable accepting the options for care that my health care provider recommended.	1	2	3	4	5	6
I felt pushed into accepting the options my health care provider suggested.	6	5	4	3	2	1
I chose the care options that I received.	1	2	3	4	5	6
My personal preferences were respected.	1	2	3	4	5	6
My cultural preferences were respected.	1	2	3	4	5	6
	SECTION A TOTAL SCORE:					
B. During my pregnancy I felt that I was treated poorly by my health care provider because of:						
My race, ethnicity, culture or background.	6	5	4	3	2	1
My sexual orientation and/or gender identity.	6	5	4	3	2	1
My type of health insurance or lack of insurance.	6	5	4	3	2	1
A difference of opinion with my care providers about the right care for myself or my baby.	6	5	4	3	2	1
	SECTION B TOTAL SCORE:					
C. During my pregnancy I held back from asking questions or discussing my concerns because:						
My health care provider seemed rushed.	6	5	4	3	2	1
I wanted maternity care that differed from what	6	5	4	3	2	1

my health care provider recommended.						
I thought my health care provider might think I was being difficult.	6	5	4	3	2	1
	SECTION C TOTAL SCORE:					

Note. Adapted from The Mother's Autonomy in Decision Making (MADM) scale: Patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care," by S. Vedam, K. Stoll, K. Martin, N. Rubashkin, S. Partridge, D. Thordason & G. Jolicoeur, (2017). *PloS One*,*12*(2). (https://dx.doi.org/10.1371/journal.pone.0171804).