Doulas as Change Agents: Smoking Cessation Interventionists

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Abstract

Background: A new member of the obstetrical health care team, known as the doula, has emerged. A doula refers to a trained, experienced professional who provides continuous physical, emotional and informational support to a pregnant mother before, during, and after pregnancy. Doulas do not provide nursing or medical care, nor do they take the place of a woman's significant other or family members. Research shows that the continuity of care, provision of human presence, and social support that doulas provide is linked to varied beneficial effects. The advantages are seen in antepartal and labor events (e.g. decreased use of anesthesia/analgesia), through the delivery process (e.g. reduced Cesarean birth rate) and in long-term maternal outcomes (e.g. increase in exclusive breastfeeding). An area of research that could be further explored is looking at the use of doulas as smoking cessation interventionists. Overwhelming evidence exists showing that prenatal smoking has adverse effects on pregnant women and their unborn fetuses. This study is looking to specifically evaluate the ability to train doulas to serve as smoking cessation interventionists. Methods: Prospective study participants were recruited from a doula-based organization in the northeastern portion of the United States. In order to be eligible for participation, the doulas had to have been certified within the last three years, and had to have a minimum of four months of work experience. Five doulas participated in the pilot study. The doulas completed a 10-item pre-test prior to receiving any interventionist training. The subjects then underwent two 2-hour long training sessions. The sessions included a review of the Transtheoretical Model of Change and covered the smoking cessation interventionist protocol. Immediately following training, the subjects completed a second 10-item post-test. Results: The sample was predominantly white (80%) women (100%) who had been doulas for four or more months, and currently works as doulas (100%). The mean pre-test score was 7.6 ($\pm$ 1.52) and following training, the mean post-test score was 9.4 ($\pm$ 0.89). There was no obvious trend in questions missed on either the pre or post-tests. Conclusions: The findings showed that doulas did increase their knowledge from the time of the pre-test to the time of the post-test. The increase in test scores possibly indicates that it is feasible to train doulas on interventionist protocol and smoking cessation.

Keywords: Doula, Pregnancy, Smoking Cessation

1. Introduction

Currently 18 of every 100 adults (17.8%) aged 18 or older in the United States smoke cigarettes, resulting in an astounding 42.1 million U.S. adults who smoke. By gender, data shows that more than 20 of every 100 adult men (20.5%) and 15 of every 100 adult women (15.3%) currently smoke cigarettes. In the Northeast portion of the U.S., from which this study's participants were recruited, 17 of every 100 adults (16.9%) currently smoke cigarettes.[1] According to The Center for Disease Control's Pregnancy Risk Assessment Monitoring System (PRAMS), approximately 12.8% of women in the United States self-reported smoking during the last three months pregnancy[2],

and in Pittsburgh, Pennsylvania, the home of the study, the smoking rates during pregnancy are 25% above this national average.[3]

Cigarette smoking is the leading cause of preventable disease and death in the U.S., accounting for more than 480,000 deaths each year, which equates to every 1 in 5 deaths[1]. Smoking can be linked to damage in nearly every organ of the human body, and can lead to many major diseases like heart disease, stroke, and lung cancer. In the arena of obstetrics, cigarette smoking has unique adverse consequences. Not only does smoking harm women of childbearing age in the traditional ways (e.g. increased risk of heart disease, stoke, lung cancer), but it can also have major teratogenic effects to fetuses (e.g. preterm delivery, stillbirth, low birth weight), and negative outcomes for mothers during and after pregnancy (e.g. ectopic pregnancy, abruption placentae, reduced breastfeeding)[4]. Cigarette smoking is regarded as the first major environmental risk factor encountered by the unborn, and is also seen as the single most avoidable risk factor for fetuses[4].

Doulas are relatively new members of the obstetrical healthcare team who can provide continuous physical, emotional, and educational support to women before, during, and after pregnancy. Although doula care is a comparatively new practice in the U.S. and may not be widely practiced, it consistently yields favorable outcomes[5]. Data shows that expectant mothers matched with doulas had better birth outcomes (e.g. type of birth, incidence of low birth weight babies, incidence of complications for either the mother or the baby, incidence of breastfeeding initiation) than did mothers who gave birth without involvement of a doula[6]. Given that a large portion of a doula's role is to provide education to a pregnant mother, an area of research that could be further explored is the use of doulas as interventionists, specifically smoking cessation interventionists. The purpose of this small pilot study was to examine the feasibility of training doulas to serve as smoking cessation interventionists.

2. Methodology

2.1 Research design

The descriptive pilot study took place over one month. Data was collected from subjects at initiation of the study and at the completion of the study. Upon beginning the study, subjects completed a 10-item pre-test. Subjects then underwent two 2-hour training sessions. Data was collected a second time from subjects immediately following the completion of their training sessions, in the form of a 10-item post-test. The pre and post-tests asked subjects the same questions in order to evaluate any knowledge increase.

2.2 Sample population

The sample was comprised of five women recruited from a community based doula program in the northeastern portion of the United States. To be eligible the subjects must have been trained or certified as a doula within the last three years and have a minimum of four months of doula work experience. They must also be able to read and speak English.

2.3 Descriptive statistics

Descriptive statistics were used to evaluate the characteristics of the sample and to measure the average pre and post-test scores. SPSS Version 21 (Chicago, IL) was used for the statistical computation.

2.4 Training protocol

Participants were required to attend two 2-hour training sessions. Session one focused on the Transtheoretical Model of Behavior Change[7]. The Transtheoretical Model (TTM) breaks down an individual's willingness to enact change into five stages— Pre-contemplation, Contemplation, Preparation, Action, and Maintenance. In pre-contemplation, a behavior change is not even an option for an individual. In fact, an individual in the pre-contemplation stage may not even be aware of the negative effects of their behavior. During contemplation an individual begins to consider the possibility of a behavior change. During preparation an individual gathers the necessary information and resources in order to execute a behavior change. Overtly active change occurs during the action phase, and the positive behavior change is sustained throughout the maintenance phase. The participants were taught this in order to be able to evaluate their client's willingness to change, and to be able to tailor their education to the specific stage of change that their

client is in. Session one also focused on the specific effects smoking during pregnancy and the postpartum period can have on a women, fetuses, and newborns.

> Robert smokes and thinks that information on lung cancer, etc. is overrated. His grandfather smoked all his life and lived to be 90. What stage of change is Robert exhibiting?
>
>   a. Pre-contemplation
>   b. Contemplation
>   c. Preparation
>   d. Action
>   e. Maintenance

Figure 1. Sample test item evaluating TTM knowledge

Session two focused on educating the participants about the aim of the study, as well as teaching them the Doula Promoting Smoking Cessation for Pregnant Women (DPSCPW) intervention protocol. The DPSCPW intervention protocol provides doulas with questions to ask their clients regarding their smoking habits (e.g. Have you smoked or taken a puff of a cigarette since the last time we met), as well as appropriate responses based on the client's answers.

Table 1. Sample DPSCPW intervention protocol

Query #1 Have you smoked or taken a puff of a cigarette since the last time we met?	If the response is "NO" • Praise woman for not smoking • Confirm health benefits to mom and baby for stopping smoking— mom has reduced risk for pregnancy complications, baby has reduced risk for prematurity and low birth weight
	If the response is "YES" • Move to Query #2
Query #2 How many times have you quit smoking since we left?	If the response is "0" • Discuss mom's reasons for quitting smoking • Review personal triggers, and respective strategy to deal with triggers • Review high risk situations, events, or individuals based on triggers
	If the response is "1 or more" • Move to Query #3
Query #3 At this time, are you seriously thinking about quitting?	If the response is "NO" • Support the mom at her current stage of her quitting efforts • Review the benefits to making a serious effort toward stopping smoking
	If the response is "YES" • Support the mom in her quitting efforts • Assess the duration of the quit efforts • Review personal triggers, and respective strategies to deal with triggers • Review high risk situations, events, or individuals based on triggers • Ask the mom to imagine being smoke free for the rest of her life

2.5 Measures

The investigator developed a pre and post-test to measure the subject's knowledge on smoking and intervention protocol before and after receiving training. The pre and post-tests were comprised of the same questions in order to accurately tell if the participant's knowledge base increased. The investigator did take into account the risk of test-retest familiarity with the pre and post tests, but the risk was determined to be minimum due to the fact that the pre and post test were completed one month apart from each other, and the 10 items on the pre and post-tests were scrambled in different orders.

3. Results

Table 2. Sample characteristics (n=5)

Characteristics	Statistic
Female, n (%)	5 (100)
Male, n (%)	0 (0)
Caucasian, n (%)	4 (80)
African American, n (%)	1 (20)

The sample was predominantly white (n=4, 80%) women (n=5, 100%), all with at least four months of doula work experience.

Table 3. Test scores

Test	Minimum Score (out of 10)	Maximum Score (out of 10)	Mean Score (out of 10)	Std. Deviation
Pre-test	6.00	9.00	7.6000	1.51658
Post-test	8.00	10.00	9.4000	0.89443

The sample scored an average of 7.6 (SD=1.52) out of 10 on the pre-test and an average of 9.4 (SD=0.89) out of 10 on the post-test.

The average score on the post-test was higher than the average score on the pre-test. On the initial pre-test, none of the participants scored a 10 out of 10 (100%). While the researchers considered scoring an 8 out of 10 (80%) to be sufficient knowledge of the material, the lack of 100% scores indicated that no one participant knew every piece of the training material. On the post-test, 3 out of 5 participants (60%) scored a 10 out of 10 (100%), indicating that the training provided them with complete mastery of the material. The post-test scores were more consistently higher, as shown by the smaller standard deviation.

4. Discussion

The purpose of this study was to examine the feasibility of training existing doulas to serve as smoking cessation interventionists. The training did increase doula knowledge about smoking cessation and interventionist protocol, meaning that it is feasible to train a doula to serve as a smoking cessation interventionist. The small pilot study is one of the few addressing training doulas to work as smoking cessation interventionists with pregnant women. This research is important because cigarette smoking is a massive global health issue that has explicit negative effects on childbearing women and their babies. Traditional members of an obstetrical healthcare team (e.g. doctors, midwives,

nurses) can work to enact a lifestyle change in pregnant women who smoke, but they may have limited contact with the client. Conversely, a doula that works with a client throughout her antepartal period has the opportunity to see her much more frequently, fostering a relationship that could better facilitate a lifestyle change.

Knowing that it is possible to train doulas to serve as smoking cessation interventionists leads to the discussion of how and when they should be trained. Further research is needed to determine the best time and method for providing doulas with instruction. For existing doulas, the teaching may occur through a continuing education class or credit. For new doulas, research can be done to see if the training is more beneficial as part of their initial certification, or if it should be offered as a supplemental continuing education training for those doulas who are specifically interested in serving as smoking cessation interventionists.

Limitations of this study are the small, predominantly white sample population, which was totally female, as well as the limited geographical area from which the sample was pulled. In repeat studies, the author would like to use a larger, more diverse sample. A possible future study might look at the success rates of these doulas as interventionists. Training the doulas to work as interventionists is possible, but more work can be done to evaluate the efficacy of the trained doulas working with clients on smoking cessation.

5. Acknowledgements

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