



Midwifery Education in Practice

Constructing and applying an exercise counseling model for pregnant women: A preliminary study



Ching-Fang Lee^{a,*}, Yao-Chung Huang^b, Li-Kang Chi^c, Hsien-Ming Lin^d, Chen-Ju Lin^e, Sheng-Mou Hsiao^{d,f}

^a Department of Nursing, Mackay Medical College, New Taipei, Taiwan

^b Physical Education Office, National Taipei University of Technology, Taipei, Taiwan

^c Department of Physical Education, National Taiwan Normal University, Taipei, Taiwan

^d Department of Obstetrics and Gynecology, Far Eastern Memorial Hospital, New Taipei, Taiwan

^e Department of Obstetrics and Gynecology, Mackay Memorial Hospital, New Taipei, Taiwan

^f Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Taoyuan, Taiwan

1. Introduction

Exercising throughout pregnancy does not only help to prevent maternal-fetal diseases like gestational diabetes (GDM) and pre-eclampsia (Weissgerber et al., 2006), but also to decrease the risks of premature birth, inadequate birth weight, neural tube malformations in the fetus, and other threats to the newborn's health (Schlüssel et al., 2008). Of course, a proper amount of regular exercise also promotes the physical fitness and overall health of pregnant women (American College of Obstetrics and Gynecology, ACOG, 2015; Barakat et al., 2014). It is very important for these women to adopt a healthy lifestyle, even if that means modifying their pre-pregnancy lifestyles (ACOG, 2015).

Unfortunately, studies have found that many women exercise less or stop exercising after becoming pregnant (Nascimento et al., 2015; Lee et al., 2016; Tung et al., 2014), and that fewer than 30% of all pregnant women are adequately active (Gaston and Cramp, 2011). The new 2015 ACOG guidelines for exercising during pregnancy recommend that pregnant women without medical or obstetric complications should begin or continue exercising, preferably engaging in moderate-intensity exercise for at least 20–30 min per day on most or all days of the week, because this will have significant health benefits for them. However, studies have found that many women significantly lower the frequency, intensity, and duration after they become pregnant, and that few pregnant women meet the ACOG guidelines (Lee et al., 2016; Hayman et al., 2015). That is, most pregnant women's exercise levels are now significantly below the current recommendations.

The fact that many women are not engaging in exercise at all or are not getting enough daily physical activity may lead to excessive gestational weight gain (GWG) or maternal obesity (Weissgerber et al., 2006). The Institute of Medicine (IOM) specifies four Body Mass Index (BMI) categories: underweight (BMI < 18.5), normal weight

(BMI = 18.5–24.9), overweight (BMI = 25–29.9), and obese (BMI ≥ 30) (Institute of Medicine, 2009). The IOM also suggests a pre-pregnancy BMI-specific weekly GWG rate for the 2nd and 3rd trimesters and total GWG (Institute of Medicine, 2009). Therefore, it has become very important to encourage pregnant women to exercise for the safe of their health. Of course, no pregnant woman for whom it is found that exercising will be dangerous should be allowed to take part in an exercise program (ACOG, 2015). Obstetric health providers should therefore carefully evaluate pregnant women, checking for any absolute or relative contraindications to exercise—where the risk to woman's health outweighs the potential future health benefits of regular exercise (Mottola, 2016).

A popular theoretical model from belief-based social psychology, the Theory of Planned Behavior (TPB) (Ajzen, 1988, 1991), provides a framework for investigating the relationship between beliefs, intentions, and actual exercise behavior (Downs and Hausenblas, 2003; Hausenblas et al., 2008; Hamilton et al., 2012; Lee et al., 2016). The key factors are beliefs regarding the perceived advantages of exercise—improving mood, energy and fitness—and beliefs regarding the perceived impediments to exercise—women's physical limitations, tiredness, and lack of time (Downs and Hausenblas, 2004). According to this theory, belief is a very important factor when it comes to predicting exercise behavior (Ajzen, 2001). Therefore, the assessment of a woman's belief, of the strength of her belief, is very important in the counseling process.

The ACOG (2015) recommends using the Five A's (Ask, Advise, Assess, Assist and Arrange) when counseling pregnant women about exercise. However, the Five A's were originally developed to help people to quit smoking rather than as an approach to counseling pregnant women about the benefits of exercise. Laitakari and Asikainen (1998) developed a counseling model to promote health-related

* Corresponding author. No.46, Sec. 3, Zhongzheng Rd., Sanzhi Dist., New Taipei City 252, Taiwan.

E-mail addresses: chingfang@mmc.edu.tw (C.-F. Lee), biddle@ntut.edu.tw (Y.-C. Huang), lchi@ntnu.edu.tw (L.-K. Chi), hsien@ms2.hinet.net (H.-M. Lin), alfielin@yahoo.com.tw (C.-J. Lin), smhsiao2@gmail.com (S.-M. Hsiao).

<https://doi.org/10.1016/j.nepr.2018.09.003>

Received 19 December 2017; Received in revised form 24 June 2018; Accepted 11 September 2018

1471-5953/© 2018 Published by Elsevier Ltd.

physical activity, and their exercise counseling strategy includes several stages: assessment, defining the goal, planning, implementation and monitoring, evaluation, and reformulation. However, this counseling model is for general use, not specifically for counseling pregnant women. Therefore, there is a need for an exercise counseling model and for more research aimed at promoting exercise during pregnancy.

In this paper we demonstrate the usefulness of an individualized exercise counseling model, its ability to encourage pregnant women to exercise. For this purpose we make use of two studies in particular. Study 1 utilizes the Delphi method to construct an exercise counseling model that could be used for counseling healthy pregnant women; this study was approved by the institutional review boards of Taipei's Far Eastern Hospital (no. 102157-F). Then a preliminary study will apply this model, encouraging pregnant women to begin exercising or to continue exercising.

2. Study 1: model development

2.1. Purpose

The purpose of Study 1 was to use the Delphi method to develop an exercise counseling model for pregnant women.

2.2. Methods

First, we conducted a review of the literature to clarify the individualized exercise counseling process and the content of counseling sessions, in order to encourage pregnant women to begin to exercise or to continue exercising (Laitakari and Asikainen, 1998; Aittasalo et al., 2008, 2012). We used the Delphi technique to collect the questionnaires submitted in the discussion and communication, and consensus of the expert panel was achieved after three rounds.

2.3. Participants

No agreement exists on the required panel size for Delphi studies, nor are there unequivocal definitions of small and large samples (Williams and Webb, 1994). There is also a lack of agreement regarding the ideal sample size and no criteria for judging a given sample size. A three-round Delphi study with 10 multi-disciplinary healthcare experts (2 obstetricians, 2 midwife nurses, 1 sports psychologist, 1 sports physiologist, 2 health promoters and health educators, and 2 nursing professors) was undertaken. The response rate (n = 10) across the three rounds was 100%.

Table 1

Study 1: Summary of responses for the consensus.

| | Agreement ^a | | Stability | | | | Convergence | | | |
|---|------------------------|---------|------------|---------------|----------------|------------|-------------|--------------|--------------|-------------|
| | Round 2 | Round 3 | Acceptance | Mean (range) | | Mo (range) | | SD (range) | | IQR (range) |
| | n | n | % | Round 2 | Round 3 | Round 2 | Round 3 | Round 2 | Round 3 | Round 3 |
| Counseling process | 5 | 5 | 100% | 4.7–4.8 | 5.0 | 5.0 | 5.0 | 0.42–1.48 | 0–0.32 | 0 |
| Assessment | 33 | 29 | 87.88 | 3.8–5.0 | 4.6–5.0 | 5.0 | 5.0 | 0–1.48 | 0–0.84 | 0–0.5 |
| Define barriers to achieving the target | 5 | 2 | 50 | 4.3–4.9 | 4.9–5.0 | 5.0 | 5.0 | 0.32–0.70 | 0–0.32 | 0 |
| Planning | 12 | 11 | 91.67 | 4.3–5.0 | 4.7–5.0 | 5.0 | 5.0 | 0–1.06 | 0–0.68 | 0–0.125 |
| Implementation and monitoring | 12 | 11 | 91.67 | 4.5–5.0 | 4.8–5.0 | 5.0 | 5.0 | 0–0.85 | 0–0.68 | 0 |
| Evaluation | 6 | 6 | 100 | 4.5–5.0 | 5.0 | 5.0 | 5.0 | 0.32–0.92 | 0 | 0 |
| Total | 73 | 64 | 87.67 | 4.7(3.80–5.0) | 4.93(4.60–5.0) | 5.0 | 5.0 | 0.56(0–1.48) | 0.17(0–0.84) | 0.24(0–0.5) |

Note.

²Consensus was considered to have occurred when the SD value was lower than the SD value from the previous round and the IQR was less than or equal to 0.5.

^a Agreement was considered to have occurred when there more than 50% acceptance on each item; the “n” for agreement is the number of the score for each round.

2.4. Procedure

Three rounds of review and discussion by the experts were conducted, during which the expert panel had to reach a consensus at the end of each round. In round 1, we developed open-ended questions influenced by an exercise counseling model for pregnant women based on literature review. The classical Delphi technique starts with an open-ended set of questions; these are used to generate ideas to which the experts can freely respond. Then the results of round 1 were analyzed and categorized using content analysis. Based on expert opinion and consensus, the wording of the panel's goals and the guidelines for the generation and removal of goals were amended. Then, suggestions were added into the questionnaire that would be used in the next round.

For the 2nd and 3rd rounds, a structured questionnaire was developed based on the results of previous rounds. The expert panel was provided with feedback on each questionnaire item from the previous round, presented in the form of individual and group mean ratings. This process allowed the expert panel members to determine how well their responses to each item fit with the overall group ratings. Expert panel members used a 5-point Likert scale of agreement and free text responses. Likert scale scores ranged from 5 (completely agree) to 1 (completely disagree) for each category. The qualitative data from the expert panel's questionnaire results were analyzed and categorized using content analysis. Expert panel members were given two weeks to complete each round, and reminder e-mails were sent at one-week and two-week intervals after this deadline.

2.5. Consensus

In accordance with the Delphi method, the criteria used to determine when consensus had been reached were stability and convergence (Vazquez-Ramos et al., 2007). With the Delphi method, stability depends on the degree of similarity of the panel members' responses to each question across the rounds, and is measured in *mean* (M) and *majority* (Mo) (Vazquez-Ramos et al., 2007). Convergence is based on the degree of agreement or consensus achieved by the panel members in response to a particular question, and is measured in inter-quartile range (IQR) and standard deviation (SD) (Vazquez-Ramos et al., 2007; Clibbens et al., 2012).

In order to reach consensus, the SD value must be less than it was in the previous round and the IQR must be less than or equal to 0.5 (Clibbens et al., 2012). Moreover, consensus on research priorities requires more than 50% agreement on each item (Kelly, 2013). Round 3 of the Delphi method had 87.67% agreement; all of the IQR values were less than or equal to 0.5, and the SD value was lower than it had been in the previous round. The data for the three rounds are presented in Table 1. Consensus was reached by round 3 and no further rounds had

Download English Version:

<https://daneshyari.com/en/article/11028144>

Download Persian Version:

<https://daneshyari.com/article/11028144>

[Daneshyari.com](https://daneshyari.com)