



Evaluation of the Food For Fertility Program

Carrie C. Dennett, Nutritional Sciences Program and Graduate Coordinated Program in Dietetics

Background

Female infertility and its associated health conditions carry significant social and economic burdens, making it an important public health issue.

- Polycystic ovarian syndrome (PCOS) affects about 5 million women of reproductive age in the U.S.
- PCOS is a major cause of female infertility.
- Women with PCOS are at greatly elevated risk of developing type 2 diabetes and cardiovascular disease.
- Obesity and unhealthy lifestyles are also linked to these chronic diseases.
- The National Institutes of Health (NIH) estimates that the cost of identifying and managing PCOS are approximately \$4 billion annually.
- This does not include the treatment of serious health conditions associated with PCOS.
- Overall, the cost of treating infertility and co-existing and downstream diseases can be expensive for individuals, employers and government.

Compared with women with a normal body mass index (BMI) (18.5-24.9 kg/m²), women with a raised BMI have a threefold greater risk of infertility.

Data collected from the Nurses' Health Study II prospective cohort suggest:

- Most cases of infertility due to ovulation disorders are preventable through diet and lifestyle modification.
- A six-fold difference in ovulatory infertility risk between women following five or more low-risk dietary and lifestyle habits and those following none.

A balanced, healthful diet is also associated with successful pregnancy in women undergoing assisted reproductive technology (ART).

Women facing or actively participating in ART may be motivated to achieve lifestyle change:

- To increase the odds that ART will be successful
- To avoid ART altogether

Adoption of healthy lifestyle practices may be more successful at a preconception stage because of:

- Increased motivation
- Increased receptivity

This is an important life stage in which to focus on public health messages highlighting the fact that routine preconception lifestyle counseling is crucial for all ART-related pregnancies.

Project Aims

The results of well-conducted human research studies suggest that diet and lifestyle should be part of an infertility treatment plan, particularly for infertility due to ovulatory disorders.

The Food for Fertility program, designed and conducted by Judy Simon, MS, RD, CD, CHES incorporates nutrition education, physical activity and mindful eating in a peer support setting.

The program uses a non-diet approach, using intuitive eating instead of calorie restriction. The program goal is to motivate women to make healthy lifestyle changes, regardless of weight change, and give them the tools and information to do so.

To assure that the class curriculum and structure results in the desired outcome of lifestyle changes that support optimum fertility, a means of evaluating these changes was needed.

- A pre-evaluation tool would allow for baseline assessment of where Food for Fertility clients are in terms of their knowledge, habits and readiness to change before starting the course series.
- A post-evaluation tool would allow for measurement of any changes in these areas.



Participants

The pre- and post-evaluation questionnaires were administered to nine women enrolled in the Food For Fertility class between February 9 and March 23, 2013, held at Seattle Reproductive Medicine.

- Age range was 28-42 years; average age was 33.8 years
- BMI range was 29.3-48.1 kg/m²; average BMI was 37.1 kg/m²

Prior to the class start, participants underwent an individual intake and assessment with Judy Simon, which included health history and relevant lab values.

Methodology

Literature Review

- A review of peer-reviewed literature from the past 10 years was conducted via PubMed to determine diet and lifestyle factors relevant to anovulatory infertility and ART success.
- Resulting articles were included in the literature review provided that they used human subjects and were case studies.
- Other evidence-based written material was used as background.
- Together, this literature was used to determine diet and lifestyle factors relevant to fertility and thus to develop questions for the evaluation tool.

Development

- The pre-course questionnaire included 37 questions designed to assess each participant's current health behaviors, beliefs, motivation and readiness to change in key areas (diet, activity, stress & sleep, social support).
- The post-course questionnaire had a corollary structure, allowing for comparison of results and measurement of improvement in these lifestyle areas.
- 10 questions on each questionnaire were for informational purposes and not used to measure improvement.

Administration

- Participants completed the pre-course questionnaire before attending their first class in the series.
- The post-course questionnaire was completed before the seventh and final class in the series.

Evaluation

- 37 questions were used to calculate an aggregate score on a scale of 1 to 5, with 5 being optimal.
- Aggregate scores were calculated for each question and for each completed questionnaire. This allowed for improvement in lifestyle habits to be measured by question or lifestyle area, as well as for all lifestyle areas collectively.
- These evaluation tools will be used for program assessment and improvement only.

Key Findings & Discussion

On the pre-evaluation questionnaire, the average class score by section (on a 1-5 scale, 5 being optimal) was:

- Nutrition & Diet—3.44
- Exercise & Physical Activity—3.53
- Stress, Sleep & Support—3.22

On the post-evaluation questionnaire, the average class score by section was:

- Nutrition & Diet—3.67
- Exercise & Physical Activity—3.78
- Stress, Sleep & Support—3.33

Because Food For Fertility uses a non-diet approach, weight loss was not a primary goal, although weights were taken each week. Collectively, the class of nine women saw a reduction in BMI from 37.1 to 35.7 kg/m².

Participants reported:

- Increased knowledge about how nutrition and lifestyle affect fertility and pregnancy
- Improvement in current eating habits
- Increased confidence that they can eat a healthy diet
- Increased ability to make healthy food choices when shopping
- Increased confidence in their ability to prepare a healthy meal

Participants also reported that they were less likely to wait until they were extremely hungry to eat, or to eat until they were uncomfortably full.

References

- Chavarro JE, Rich-Edwards JW, Rosner BA, et al. Diet and lifestyle in the prevention of ovulatory disorder fertility. *Obstet & Gynecol* 2007;110(5):1050-8.
- Moran L, Tsagareli V, Norman R, et al. Diet and IVF pilot study: Short-term weight loss improves pregnancy rates in overweight/obese women undertaking IVF. *Aust N Z J Obstet Gynaecol* 2011;51(5):455-9.
- Twigg JM, Bolhuis MEC, Steegers EAP, et al. The preconception diet is associated with the chance of ongoing pregnancy in women undergoing IVF/ICSI treatment. *Human Reproduction* 2012;27(8):2526-31.
- Pasquali R, Patton L, Gambineri A. Obesity and infertility. *Endocrinology, Diabetes and Obesity* 2007;14(6):482-7.
- Moragani VA, Jones S-ML, Ryley DA. The effect of body mass index on the outcomes of first assisted reproductive technology cycles. *Fertility and Sterility* 2012;98(1):102-8.

Thank you to my preceptor
and mentor, Judy Simon

