






## ORIGINAL RESEARCH OPEN ACCESS

# Effects of Family-Centered Empowerment Model vs. Traditional Model on Adherence and Perceived Social Support in Bariatric Surgery Patients: A Randomized Clinical Controlled Trial

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## ABSTRACT

**Background and Aims:** Bariatric surgery is presently considered the optimal treatment option for reducing mortality and morbidity among individuals with obesity and educating and empowering patients and their families leads to better patient outcomes and increased participation in healthcare programs. Thus, aim of this study was to evaluate the effects of two educational methods on adherence and perceived social support in bariatric surgery patients: the family-centered empowerment model versus the traditional model.

**Methods:** This randomized controlled trial study was conducted on 30 bariatric surgery patients referred to one of the hospitals of Shiraz University of Medical Sciences, and were randomly divided into two groups. A family-centered intervention was performed for the intervention group ( $n = 15$ ), and traditional model was provided to the control group ( $n = 15$ ). A demographic questionnaire, the Bariatric Surgery Self-Management Behaviors Questionnaire (BSSQ), the General Adherence Scale (GAS), and the Specific Adherence Scale (SAS), as well as the Multidimensional Scale of Perceived Social Support Questionnaire (MSPSS), were used to collect the data. Data were analyzed using SPSS software, version 21, with a significance level of 0.05.

**Results:** The results of our study showed that there was no statistically significant difference in Self-management behavior ( $p = 0.255$ ), and General Adherence ( $p = 0.170$ ), between the two groups after the intervention, but there was a significant

**Abbreviations:** BSSQ, bariatric surgery self-management behaviors questionnaire; CFI, confirmatory fit index; CHOL, total cholesterol; DSM, dumping syndrome management; EB, eating behaviors; FBS, fasting blood sugar; FCEM, family centered empowerment model; FI, fluid intake; FVW, fruit, vegetable, and whole grain intake; GAS, General Adherence Scale; HC, hip circumference; HDL, high-density lipoprotein; LDL, low-density lipoprotein; LDQ, lifestyle distress questionnaire; MSPSS, multidimensional scale of perceived social support; PA, physical activity; PBQ, perceived benefits questionnaire; PI, protein intake; RMSEA, root mean square error of approximation; SAS, Specific Adherence Scale; SD, standard deviation; SI, supplement intake; TLI, Tucker-Lewis Index; WC, waist circumference; WL, weight loss; WRS, weight-related symptom measure.

<https://fa.irc.tj.ir/IRCT20180523039802N3>.

The research project was conducted under the supervision of Dr. Zinat Mohebbi, Associate Professor, Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran. Email: [mohebbi04@yahoo.com](mailto:mohebbi04@yahoo.com).

"I am declaring that we as a member of the Faculty Nursing, Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran, I am not involved with and/or employed by any Iranian government organizations/institutions which are under the sanctions of the US government, nor do we represent those institutions. In this article, we the authors are only as researchers/university instructors."

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Furthermore, they can also help individuals develop a positive attitude towards their body image, which can further contribute to reducing their body mass index [41].

Our study found that total perceived social support and two subscales; family and friends' support in the intervention group was higher than the control group, but the mean of perceived social support in significant ones' support was not statistically significant between the two study groups. The literature does not contain any studies that look at how well FCEM works with perceived social support. As so, this study will be recognized as a pioneering study in the literature. The results of this investigation can help guide future research.

Additionally, weight loss between the two groups showed a significant difference pre- and post- intervention. A different study conducted by Norwegian researchers reported opposite findings [36]. According to the present study, the differences may be due to psychological interventions made in the previous study. After bariatric surgery, psychological factors play a crucial role in maintaining weight and health. Psychological interventions can help patients to develop healthy eating habits and build self-efficacy, which are essential for long-term success. Therefore, it is important to provide psychological support after bariatric surgery.

This study had some limitations. First, this is the first study to evaluate the effect of FCEM on perceived social support and adherence in patients undergoing bariatric surgery, resulting in limited comparisons. Studies should be conducted on different statistical communities and in groups with larger sample sizes to evaluate the effectiveness of this model on bariatric surgery patients. Comparing this model with psychological models is also suggested. Second, the duration of follow-up of patients was low due to time constraints; longer patient follow-ups may result in different outcomes. Patients were followed up for a short period. Future studies should, therefore, follow up the patients at longer intervals. Results may differ if a patient is followed up for a longer duration. Finally, this study did not consider psychological factors. Future studies are suggested to investigate the effects of this model on various psychological factors.

## 5 | Conclusion

Family-centered models provide an opportunity to empower family members to become active participants in the patient's health and perceived social support. The model could provide an opportunity for the patients to develop health their habits, such as physical activity, which would help to maintain their weight loss. However, it has not been proven that the family-centered model is effective in improving self-management behavior and general adherence.

### Author Contributions

**Mahboobeh Hosseinimoghadam** and **Zinat Mohebibi**: conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, software, supervision, validation, visualization, writing, review and editing. **Sina Ghanbarzadeh** and

**Zahra Sobhani**: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, writing original draft, writing, review and editing. **Masood Amini** and **Amirali Alizadeh**: data curation, investigation, supervision, writing, review and editing. All authors contributed to the critical revision of the manuscript. All authors approved the final submission of the manuscript.

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### Ethics Statement

Ethical matters, e.g., plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc., have been totally observed by the authors. Also, ethics committee of Shiraz University of Medical Sciences of Medical Science has approved the research with ethical No.: IR.SUMS.REC.1398.515.

### Consent

All the participants received verbal explanation about the study objectives and procedures and then signed written informed consents for taking part in the study. The participants were also reassured about the anonymity and confidentiality of their information.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The datasets supporting the conclusion of this study are available upon reasonable request from the corresponding author.

### Transparency Statement

The lead author, Zinat Mohebibi, affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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