



Effect of interactive text message follow up program on stoma adjustment patients after discharged from surgery ward of hospitals affiliated with isfahan university of medical sciences

Yaser Hamidi ¹, Mahin Moeini^{2*} Hojatollah Yousefi³

1. MSc Student of Medical – Surgical Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

2. Assistant professor Ulcer repair Research Center, Faculty of Nursing and Midwifery Isfahan University of Medical Sciences, Isfahan, Iran

3. Associate Professor, Ulcer repair Research Center, Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

***Corresponding Author: Mahin Moeini**, Assistant professor Ulcer repair Research Center, Faculty of Nursing and Midwifery Isfahan University of Medical Sciences, Isfahan, Iran

Abstract:

Background: ostomy patients suffer from many problems which can be solved to a large extent with the help of follow-up programs. These follow-ups can be done by sending a text message. this study has aimed to examine the effect of an interactive follow-up program on the adjustment of Ostomy inpatients after they are discharged.

methods: this study is a clinical trial which has been done on 64 ostomy patients were recruited and randomly assigned to the study or control group, who were discharged from the the hospitals. Members of the experimental group participated in a six-week follow-up program via text message. The information were collected before, immediately after and one month after the interventions by using Olbrisch Ostomy Adjustment Scale.

Results: Results of this study indicated that mean score of ostomy adjustments and its dimensions was higher in the experimental group than in the control group. ($P < 0.05$).

Conclusion: the findings of this study have suggested that using SMS can be considered as a proper method for following up on ostomy patients.

Key words: follow up, adjustment, ostoma, discharge.



Introduction

Stoma surgery is among the common treatments for patients suffering intestinal diseases. There are various factors that lead to stoma in individuals and cancer is one of the leading causes. There are a number of other reasons including chronic intestinal diseases such as diverticulitis, colorectal cancers, inflammatory bowel diseases, megacolon, neurological diseases and trauma because of which patients should have stoma surgery which usually improves the condition of the patients and symptoms of the disease or slow down or prevent the advancement of such diseases (1-3). According to the statistics of Unite Ostomy Associations of America, the estimated number of ostomy patients in the USA is 770000 and the estimated prevalence of it is 100000 patients per year. In the UK, there are about 100000 patients who live with stoma, 13000 of whom go through stoma surgery (2-4). In Iran, an accurate number of ostomy patients has not been reported yet but Iran Ostomy Association has estimated that there are about 30000 ostomy patients in Iran (5). Some of the side effects of this disease patients are faced with after being discharged from the hospital such as fear of fecal incontinence, unpleasant smell, participation in sports activities, changes in sleeping habits and the need for frequent follow-ups (6). In fact, increasing the patient's ability to adapt to their condition after the ostomy surgery is the main focus of care after they are released from the hospital (7). Specialized and systematic nursing interventions can have positive effects on patients adjustment with ostomy. Nurses can play important roles in reducing the concerns of these patients at critical times by providing them with necessary information, consultations, care and support (8). In the healthcare system, the follow-up on patients is done in different ways. Traditional methods for following up on care can be quite problematic; for example, they are time-consuming, expensive and require specialized manpower (9). Remote nursing is one of the modern follow-up methods which can provide care services, fulfill the health-related needs of patients, do the necessary coordination and management despite the time, cultural, social and geographical barriers (10-11).

There are numerous studies which have reviewed the effect of using text messages and cell phone on controlling and monitoring ostomy patients and other diseases including the study of Zhang et al. (2013) who have concluded that the application of cellphones improves the efficacy and satisfaction of patients with colostomy (12). In the study of Zhang et al. (2012), colostomy patients who used the telephone were more satisfied than other patients who had visited the clinic (4). In the research conducted by Wung et al. (2013), it was concluded that follow-up via telephone makes it easier for colostomy patients to adapt with their condition and its side effects (8).

In Iran, no research has been conducted on the effect of distance education in ostomy patients yet and given the daily increasing number of patients suffering from diseases such as colorectal cancers which force the patients to temporarily or permanently use ostomy, it is essential to do a research in this field. Following up on these patients after their release from the hospital through usual methods is usually quite difficult and expensive given the mental and physical conditions of the patient. Therefore, it is essential to seek new methods for following up on them that would provide them with the sufficient and suitable information, intervene in their everyday lives as little as possible and be cost-effective at the same time. Hence, the present study aimed to examine the effect of an interactive follow-up program via text message on the ostomy adjustment of inpatients after their discharge from the surgical units affiliated with Isfahan University of Medical Sciences.

Materials and methods

The present study is a clinical trial with two groups (experimental group and control group) and three stages: before, after and one month after the intervention. The convenience sampling method has been used for selecting qualified patients in the surgical units of the hospitals affiliated with Isfahan University of Medical Sciences who had ostomy surgeries and had been released from the hospital. Some of the most important criteria for the patients to enter the study were a history of ileostomy or colostomy surgery, having temporary or permanent ostomy after their surgery, an average age of 18 to 80 years, no record of alcohol or drug addiction or diagnosis with advanced diseases of vital organs and mental disorders. The criteria for exiting the study were being clinically diagnosed with mental diseases recorded in their medical file, dying during the course of the study, not being interested in participating in any stage of the study, not answering phone calls and replying text messages throughout the study.



The researcher selected patients who had a record of ostomy surgery and were qualified to enter the study. After obtaining their cautious written consent, the selected samples were randomly divided into two groups: a control group and an experimental group. Out of the 64 selected samples, 32 patients received a card with the number 1 written on them (control group) and the other 32 received a card with the number 2 written on them (experimental group). Members of the first group, i.e. the experimental group, took part in an interactive follow-up program via SMS focused on ostomy adjustment after their discharge from the hospitals and members of the second group, i.e. the control group, received health-related text messages after they were released.

The data collection tools used in this study were demographic characteristics and disease information questionnaire and Olbrisch Ostomy Adjustment Scale which had 34 questions. The Ostomy Adjustment Scale measures six subscales, i.e. self-concept, positive acceptance, social-religious support, sexual relations, self-care and negative acceptance, using a 6-option Likert scale from totally agree to totally disagree (13). Before patients' release from the hospital, the two questionnaires were filled out by the colleague of the researcher who was not informed of the research objectives by interviewing the participants. In the patients' next visit to the centers, the researcher got their phone numbers, cellphone numbers and their address were for further contact. It was also checked that the cellphones of patients had a persian menu and they were taught how to use SMS. Follow-up via SMS and phone calls continued for six weeks both for the members of the control group and the experimental group. Each week, six messages (except for the weekend) were sent between the hours 10 a.m. and 9 p.m. and over the course of six weeks, a total of 36 short messages were sent to the patients. Six weeks and one month after the end of the sessions, the ostomy adjustment scale was filled out by the respondents. A specific number was assigned for each message and the sent messages were marked. In cases when not more than two messages were sent, the researcher would call the home telephone number of that specific patient and ask the reason why. If necessary, the researcher got another cellphone number or the number of one of the patient's family members who lived with them and the text messages were sent to the new number. Patients interacted with the researcher via SMS about ostomy. In the third and fourth week, an educational session was hold wherein an ostomy specialist answered the specialized questions of the patients. Moreover, on the 3rd and 7th day, 23rd and 27th day, a follow-up procedure was done via telephone by the ostomy specialist so that the questions of the patients would be answered and to ensure that they have received the text messages (14).

The obtained data was analyzed using SPSS ver.24. demographic data and clinical information were expressed as mean (standard deviation) for the quantitative variables and as numbers (percent) for the qualitative variables. Group comparisons were done using the independent t-test for the quantitative variables and Mann-Whitney chi-square test for the qualitative variables. Additionally, the repeated measures analysis of variance was used for comparing three different times in the two groups and between the two groups. All of the tests are at a 95% significance level.

Results

In [Table 1], the results of comparing the demographic and clinical information about the members of the control group and the experimental group have been reported. There was no significant difference between the two groups in terms of the demographic and clinical variables ($P>0.05$).

[Table 2] shows the comparison made between total score of ostomy and its dimensions in the two groups before, immediately after and one month after using independent t-test at the significance level of 0.05. Given the reported values, before the intervention, comparing the two groups showed that there was a no significant difference between adjustment in any of the dimensions of ostomy ($P>0.05$). Immediately after the intervention, the mean scores of ostomy adjustment and its dimensions in the two groups were significantly different from one another ($P<0.05$). One month after the intervention, a significant difference was seen between the two groups while comparing ostomy adjustment and its dimensions, except for the negative acceptance dimension ($P<0.05$). total mean score of ostomy adjustment one month after the intervention had increased relative to the previous times.

[Table 3] displays the comparison made between total score of ostomy and its dimensions in the two groups before, immediately after and one month after using independent t-test at the significance level of 0.05. There was a significant difference between the two groups in terms of ostomy adjustment at the three specified times ($P<0.05$). Furthermore, comparing the ostomy adjustment of the members of the two groups at three different times showed a significant difference ($P<0.05$).



Discussion

The findings have suggested that there is no significant difference between the control and the experimental group regarding the demographic and clinical variables ($P>0.05$), which confirms the random division of the samples in the two groups using statistical tests. The results, in general, have indicated that a follow-up program via SMS can increase the mean score of ostomy adjustment and its dimensions in the control and experimental group, however this increase is more evident in the experimental group.

Before the intervention, the mean score of ostomy adjustment of the two groups were not significantly different; however, this differences were significant immediately after the intervention and one month after the intervention and the mean score had increased relative to before the intervention. In confirming the findings of the present study, in the study of Zhang et al. (2013) the ostomy adjustment, self-efficacy and satisfaction with care variables were similar in the two research groups before the intervention (12). In the study of McKenna et al. (2016), it was shown that individuals who had received pre ostomy surgery had a higher quality of life than individuals who had not. Also, the difference between the quality of life of these two groups after the intervention was not significant (15). In the study of Cheng Fu et al. (2012), patients who had participated in the program showed a significant improvement in their knowledge, self-efficacy, self-management and mental adjustment with colostomy. Knowledge about ostomy in the six dimensions and the score of care efficacy had significantly increased (16). Unlike the findings of the present study, Danielsen and Rosenberg (2014) obtained totally different results and did not observe a significant difference in the 3rd and 6th month while comparing the quality of life of the members of the two groups ($p=0.12$ and $p=0.63$, respectively) (17). This difference might be due to numerous reasons including the type of intervention, assessed response, duration of follow-up, criteria for entering and exiting the study and using information collection tools.

Moreover, the results of the study showed that by comparing the mean scores of adjustment before, immediately after and one month after the intervention, a significant difference was seen between the control and the experimental group. In addition, there was a significant difference between the two groups in terms of the ostomy adjustment of the participants at the three specific times. In this respect, a number of studies confirm this finding. In the study of Karabulut et al. (2014), a significant difference was seen between the mean scores of ostomy adjustment in the two groups given the stoma, social and demographic variables based on the results obtained 67 weeks after the intervention in comparison with the first week (18). In the study of Zhang et al. (2013), an increase was seen in adjustment of the members of the control and experimental group over time and also, a significant intragroup improvement was seen in the self-efficacy and ostomy adjustment variables (12). The findings of the present study were not compatible with the results of the study of Cheung et al. (2003) in which the quality of life of patients with permanent colostomy was not changed over time (19).

Studies that have been done with the purpose of increasing the level of adjustment and its dimensions in ostomy patients have used tools such as video discs (20), speech and powerpoint slideshow (18) and/or their interventions through group sessions (18), using the phone (21) or home meetings (15) to follow up on the patients and/or educate them. Most of these methods seem suitable at the first glance, but it is the need for the patient to go to a center for the education and/or for the follow-up that might be rather difficult given the conditions of an ostomy patient after being released (6). It might be problematic, and expensive which makes it impossible in some cases given the economic conditions of the patient and/or following up on the patient and/or educating them might take a lot of time. Given the searches done by the researcher, there are a handful of studies which have used communication tools such as telephone in ostomy patients which is both accessible to all the patients with a low cost. Using these devices can considerably reduce the follow-up on patients so that they would be able to take care of themselves without needing anybody else and play the role of an individual in the society and in their family. No study has reviewed the application of SMS for following up on the ostomy patients and/or educating them, although the application of this method on patients suffering from other diseases and they have been recognized as suitable tools for follow-up and education (22-23-24-25). This study was the first to use SMS as a tool for following up on ostomy patients and in addition to the advantages



of telephone, the researcher can follow up on many patients at the same time, it is also way cheaper than the telephone and it can reduce the duration of follow-up to a large extent. Despite the above-mentioned advantages, the present study has some limitations. Firstly, the size of the sample is small which can affect the reliability of the results. Secondly, follow-up takes less time which can be justified because of the little time the researcher has and ultimately, a few text messages have been used for following up on the patients and educating them. In the future studies, the same process can be undertaken on a larger sample with a longer follow-up period and since social media is becoming more and more popular, the social networks can be used for following up on the ostomy patients and educating them instead of using text messages.

The results of this study have suggested that using SMS can increase ostomy adjustment and its dimensions from various aspects, i.e. family, social and personal aspects, and it can reduce the long time the follow-up takes for the individual to play an effective role in the society and his/her family. Thus, the findings of this article can be of help to caretakers, such as nurses, as proper tools for following up on and educating ostomy patients so that the health services provided to these patients would be inexpensive and take less time.

Acknowledgement

This article has been extracted from the thesis with the title “reviewing the effect of an interactive follow-up program on the adjustment of Ostomy inpatients after they are released from the surgical units of the hospitals affiliated with Isfahan University of Medical Sciences in 2016” with the code 395562 The researcher acknowledges the efforts of the authorities of Isfahan University of Medical Sciences, Wound Healing Research Centers, and Research Center of the Faculty of Nursing and Midwifery in Isfahan University of Medical Sciences and wishes to thank them sincerely for their support.

References

1. Wu HK-M, Chau JP-C, Twinn S. Self-efficacy and quality of life among stoma patients in Hong Kong. *Cancer Nursing*. 2007;30(3):186-93.
2. Burch J. *Stoma care*: John Wiley & Sons; 2008.
3. Rafii F, Naseh L, Yadegary MA. Relationship between Self-efficacy and Quality of Life in Ostomates. *Iran Journal of Nursing*. 2012;25(76):64-76.
4. Zhang JE, Wong FK, You LM, Zheng MC. A qualitative study exploring the nurse telephone follow-up of patients returning home with a colostomy. *Journal of clinical nursing*. 2012.15-1407:(10-9)21
5. Mahjoubi B, Mohammadsadeghi H, Mohammadipour M, Mirzaei R, Moini R. Evaluation of psychiatric illness in Iranian stoma patients. *Journal of psychosomatic research*. 2009;66(3):249-53.
6. Pieper B, Mikols C. PredischARGE and postdischarge concerns of persons with an ostomy. *Journal of WOCN*. 1996;23(2):105-9.
7. Simmons KL, Smith JA, Bobb KA, Liles LL. Adjustment to colostomy: stoma acceptance, stoma care self-efficacy and interpersonal relationships. *Journal of advanced nursing*. 2007;6.-35-627:(6)
8. Zhang JE, Wong, FKY, You, L.-M., Zheng, et al. Effects of enterostomal nurse telephone follow-up on postoperative adjustment of discharged colostomy patients. 2013.
9. Goodarzi M, Ebrahimzadeh I. Impact of Distance Education via short message service of Mobile Phone on metabolic control of Patients with Type 2 Diabetes Mellitus in Karaj-Iran. *Quarterly of Horizon of Medical Sciences*. 2014;19(4):224-34.
10. Peck A. Changing the face of standard nursing practice through telehealth and telenursing. *Nursing administration quarterly*. 2005;29(4):339-43.
11. Shojae A, Nehrir B, Naderi N, Zareayyan A. Assessment of the effect of patient's education and telephone follow up by nurse on readmissions of the patients with heart failure. *Journal of Critical Care Nursing*. 2013;6(1):29-38.
12. Zhang J-e, Wong FKY, You L-m, Zheng M-c, Li Q, Zhang B-y, et al. Effects of enterostomal nurse telephone follow-up on postoperative adjustment of discharged colostomy patients. *Cancer nursing*. 2013;36(6):419-28.
13. Olbrisch ME. Development and validation of the Ostomy Adjustment Scale. *Rehabilitation Psychology*. 1983;28(1):3.



14. Modanloo S, Zolfaghari M, Dehghankar L, Mohamammadi Y, Mohammadkhani Ghiasvand A. Assessment the effect of small message service (SMS) follow up on self efficacy in dialysis patients. *Iranian Journal of Nursing Research*. 2014;8(4):61-71.
15. McKenna LS, Taggart E, Stoelting J, Kirkbride G, Forbes GB. The impact of preoperative stoma marking on health-related quality of life: a comparison cohort study. *Journal of Wound Ostomy & Continence Nursing*. 2016;43(1):57-61.
16. Cheng F, Xu Q, Dai X-d, Yang L-l. Evaluation of the expert patient program in a Chinese population with permanent colostomy. *Cancer nursing*. 2012;35(1):E27-E33.
17. Danielsen AK, Rosenberg J. Health related quality of life may increase when patients with a stoma attend patient education—a case-control study. *PloS one*. 2014;9(3):e90354.
18. Karabulut HK, Dinç L, Karadag A. Effects of planned group interactions on the social adaptation of individuals with an intestinal stoma: a quantitative study. *Journal of clinical nursing*. 2014;23(19-20):2800-13.
19. Cheung YL, Molassiotis A, Chang AM. The effect of progressive muscle relaxation training on anxiety and quality of life after stoma surgery in colorectal cancer patients. *Psycho-Oncology*. 2003;12(3):254-66.
20. Crawford D, Texter T, Hurt K, VanAelst R, Glaza L, Vander Laan KJ. Traditional nurse instruction versus 2 session nurse instruction plus DVD for teaching ostomy care: A multisite randomized controlled trial. *Journal of Wound Ostomy & Continence Nursing*. 2012;39(5):529-37.
21. Bohnenkamp SK, McDonald P, Lopez AM, Krupinski E, Blackett A, editors. Traditional versus telenursing outpatient management of patients with cancer with new ostomies. *Oncology nursing forum*; 2004: ONCOLOGY NURSING SOCIETY 125 ENTERPRISE DR, PITTSBURGH, PA 15275 USA.
22. Hemmati Maslakkpak M, Parizad N, Khalkhali H. The Effect of Tele-Education By Telephone And Short Message Service On Glycaemic Control In Patient With Type 2 Diabetes. *Journal of Nursing and Midwifery Urmia University of Medical Sciences*. 2012;10(4):0-.
23. Berkman ET, Dickenson J, Falk EB, Lieberman MD. Using SMS text messaging to assess moderators of smoking reduction: Validating a new tool for ecological measurement of health behaviors. *Health Psychology*. 2011;30(2):186.
24. Cole-Lewis H, Kershaw T. Text messaging as a tool for behavior change in disease prevention and management. *Epidemiologic reviews*. 2010;32(1):56-69.
25. Downer SR, Meara JG, Da Costa AC. Use of SMS text messaging to improve outpatient attendance. *Medical journal of Australia*. 2005;183(7):366.