ORIGINAL ARTICLE

THE EFFECT OF CHEWING GUM ON IMPROVING THE INTESTINE PERISTALTIC AMONG POST CESAREAN SECTION PATIENTS AT HOSPITAL OF KENDARI CITY

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ABSTRACT

Cesarean section is a surgical intervention that most significantly affects the central nervous system and slows down bowel movements post section Caesarea. Intestinal function in women undergoing section caesarian surgery is essential, starting early. The study aimed at examining the effect of chewing gum on increasing the intestinal peristalsis in post-cesarean section. This study used a quasi-experimental, pre, and post with a control group was applied in this study. Seventy-two samples were recruited using a non-probability sampling such as consecutive sampling. CG was given to the intervention group 3 times, per 3 hours for 5 minutes with a frequency of chewing 30 times. Data analysis was performed and presented in descriptive statistics, and significant findings were computed using the paired t-test. The results showed that the mean Intestine Peristaltic intervention group increases from 11,47+1,647 to 16,61+2,487 after the intervention.

Meanwhile, in the control group, the mean Intestine Peristaltic level slightly increases from 11,31+1,470 to 14,22+1,290. The t-test obtained a p-value of 0.000, indicating that there were significant differences in the increase Intestine Peristaltic between the intervention and the control group. Chewing gum can increase intestinal peristalsis in cesarean section patients. Based on the findings, The nurse profession can use chewing gum to become one of the nursing independent interventions because easy.

Keywords: cesarean section, peristaltic, chewing gum.

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1. Introduction

Cesarean section is an abdominal operation associated with postoperative changes in the autonomic nervous system. It caused decreasing in bowel movements and resulted in several problems(1). It can impact on severe complications, including paralytic ileus, atelectasis, infection, urinary retention, and urinary tract infections(2).

The prevalence of labor with cesarean section is around 10-15% of all labor processes(3). Indonesia, Section Caesarea reached 9.8%, and in Yogyakarta, the prevalence

of labor with Section Caesarea reached 15%, this prevalence was quite high, seeing that the highest incidence occurred in Jakarta at 19.9%(4).

The anesthesia which provided to the patients can slow postoperative gastrointestinal motility. Average peristalsis loss in 24 to 48 hours depends on the type and duration of surgery. This is because anesthesia provides resistance to nerve stimulation for peristalsis. It is thus giving several effects, including abdominal distension. Feelings of discomfort in the stomach will cause anorexia (decreased appetite) if this happens, then the nutritional intake for patients is not fulfilled(5). This will inhibit the recovery of the patient's condition and the wound healing process, which, of course, requires higher nutrition than usual or before the illness. According to(6), intestinal function in women undergoing section caesarian surgery is critical starting early. Interventions have been tested to improve non-pharmacological proper intestinal peristalsis is chewing gum(7).

Previous research revealed that intestinal motility after a caesarean section could be accelerated by chewing gum. Chewing gum is a useful, inexpensive, and well-tolerated method after caesarean section (8). Revealing gum chewing is a physiological method, safe and effective for reducing time to regain bowel movements post section caesarian(9). The accelerated return of normal gastrointestinal function in women after section Caesarea will be beneficial in the process of recovery of patients. Where the oral intake will be adequate, so responding positively to meeting the nutritional needs of the patient will also help speed up the recovery process.

2. Objectives

The study aimed at examining the effect of chewing gum on increasing the intestinal peristalsis in post-cesarean section.

3. Methods

This study used a pretest-posttest quasi-experimental design with a control group. The Samples of 72 post-cesarean section patients were divided into two groups, 36 chewing gum groups in the Dewi Sartika hospital and 36 control groups in the municipal general hospital Kendari. The sampling technique using Non-Probability Sampling type consecutive sampling. The Inclusion criteria: conscious patients (Compos mentis), aged between 20-40 years, postpartum term, first-time cesarean section surgery patients, elective cesarean section patients, and post-cesarean section patients with spinal anesthesia. Exclusion Criteria are patients who have a history of diseases such as hypothyroidism and neurological disorders. Patients with a history of abdominal surgery aside from caesarean section will also be excluded in this study. Also, patients who have a history of digestive system disorders due to childbirth will be eliminated from this study.

The chewing gum about 3 hours after the cesarean section that is after the patient is aware of the effects of anesthesia in the recovery room / Anesthesia Care Unit (PACU) Dewi Sartika General Hospital, Kendari Hospital. One xylitol gum (1.45 gram) is chewed for 5 minutes with a frequency of chewing 30 times per 3 hours to 10 hours after cesarean section. Objective and subjective measurement was performed before and after the intervention. The collected data were analyzed using the paired t-test.

The research ethics committee approved the study of the Faculty of Nursing, Universitas Airlangga, and the Hospital, where the study took place. All respondents were informed of the purpose of the study and consented for their participation in the study.

4. Results

Table 1.above shows the characteristics of respondents based on age; most respondents have periods of 20-26 years as many as 30 respondents (41.7%). Characteristics of education, the highest number of respondents are senior high school education as many as 44 respondents (61.1%). Job characteristics, most of them are 49 respondents (68.1%), housewife. Characteristics of indications of cesarean section, the highest number of respondents,' was cephalopelvic disproportion as many as 45 respondents (62.5%).

Table 1Characteristics of respondents (n=72)

Distribution of Respondents		Intervention Group (n=36)		Control Group (n=36)		Total	
		n	%	n	%	n	%
Age	20 - 26 years	10	27,8	20	55,6	30	41,7
	27 - 33 years	16	44,4	12	33,3	28	38,9
	34 – 40 years	10	27,8	4	11,1	14	19,4
Education	Primary school	2	5,6	3	8,3	5	6,9
	Junior high school	3	8,3	5	13,9	8	11,1
	Senior High School	25	69,4	19	52,8	44	61,1
	Bachelor	6	16,7	9	25,0	15	20,8
work	Housewife	28	77,8	21	58,3	49	68,1
	Entrepreneur	2	5,6	9	25,0	11	15,3
	Government employees	6	16,7	4	11,1	10	13,9
	College student	-	-	2	5,6	2	2,8
Indication of Cesarean section	Cephalopelvic disproportion	24	66,7	21	58,3	45	62,5
	Breech location	9	25,0	9	25,0	18	25,0
	Location of Buttocks	2	5,6	1	2,8	3	4,2
	Big baby	1	2,8	5	13,9	6	8,3

Table 2. Effect of chewing gum on increased intestinal peristalsis in post-cesarean section patients in Kendari City Hospital (n=72)

Variable	Intervention Group		Delta Δ	*p-value*	Control Group		Delta Δ	*p value*
	Pre	*Post*			Pre	*Post*		
	Mean + SD	Mean + SD			Mean + SD	Mean + SD		
Intestinal peristalsis	11,47+1,647	16,61+2,487	5,139	0,000	11,31+1,470	14,22+1,290	2,917	0,000

*paired t-test for differences groups (p<0.05)

Table 2 it can be seen that in the chewing gum group before giving intestinal peristaltic mean intervention that was 11.47 times with a standard deviation of 1,647, after the intervention there was an increase in mean intestinal peristalsis which was 16.61 times with a standard deviation of 2.487 and the control group before giving intestinal peristaltic mean intervention

11.31 times with a standard deviation of 1,470, after the intervention there was an increase in mean intestinal peristalsis which was 14.22 times with a standard deviation of 1.290, meaning that the chewing gum group had 5.139 times higher intestinal peristalsis than the control group increasing intestinal peristalsis 2,917 times. After testing the data analysis using the paired test (α 0,05) in the chewing gum group obtained p = 0,000 which means there is an effect of chewing gum on the increase in intestinal peristalsis in patients with cesarean post section at Kendari City Hospital.

5. Discussion

The results showed that the chewing gum intervention group had intestinal peristaltic enhancement of 5,139 times and the first flatus time was 3 hours 26 minutes faster than the control group. The result was consistent with the previous study stated that chewing gum was a positive effect in accelerating first flatus, first bowel movement, first bowel sounds, first bowel movements and length of stay in hospital (10-11). The chewing gum has a positive effect on restoring intestinal function after the birth of cesarean section in the initial postoperative period (12). Chewing xylitol gum affects increasing intestinal activity which can be monitored through the appearance of bowel sounds and flatus. This serves to speed recovery after a cesarean section (13).

Chewing gum has been said to be a new and simple way to reduce and prevent postoperative ileus. It works by stimulating intestinal motility through the cephalic vagal reflex and by increasing the production of gastrointestinal hormones associated with intestinal motility (14). Chewing activity involves not only the teeth but also the periodontal tissue, which consists of two soft tissues, the gums and the periodontal ligament, and two lime tissues, dental cementum and alveolar bone. The movement of the jaw as needed requires the activity of the muscles of mastication and the temporomandibular joint. As a result, if the mastication process stimulates intestinal motility such as increased gastric secretion, some parts of the oral structure can also be involved by motor activity(15).

Chewing gum replaces eating essentially and has become an alternative method to improve intestinal function and prevent ileus in postoperative patients. Chewing sugar-free gum is recommended for 15-30 minutes, three times a day. The findings were consistent with the previous study, which states that chewing gum is a form of fake food that is safe to stimulate gastrointestinal motility in post-cesarean patients. Chewing functions to stimulate the digestive tract directly to increase intestinal motility through stimulation of the cephalic vagal reflex(16).

Chewing gum in post-cesarean section patients is a non-pharmacological therapy can be used to improve intestinal peristalsis and is well tolerated and safe in cesarean section(17). A previous study also mentioned that chewing gum is a cheap, practical, and physiological method in improving bowel function recovery and is easily tolerated without complications (18).

Other studies also showed that women who post-section and bowel sections have sound appeared in a shorter duration (11, 19). Chewing gum in the postoperative period immediately after cesarean delivery can reduce gastrointestinal complications and can restore digestive function more quickly. Based on data from several previous studies about chewing gum, namely a systematic review of 17 randomized controlled studies conducted by Shan Li in 2013 showed that there were six studies that used chewing time for one hour with intensity three times a day, one study with a time of 45 minutes three times a day, four studies for 30 minutes three times a day, one study for 15 minutes four times a day, one study for five minutes four times a day, one study for 15 minutes every two hours, one study for more than five minutes three times a day

while the remaining two studies were not reported(14). From these data, there is no standardization of the length of time used to chew gum and the amount of chewing to speed up recovery of normal gastrointestinal function after abdominal surgery. The period of chewing time used by previous studies is between five minutes and one hour with different intensities according to the considerations of the researchers themselves.

In this study shows that the frequency of chewing gum is done every 3 hours starting from 3 hours after cesarean section. The results showed increasing of intestinal peristalsis was caused by the anesthesia and paralytic ileus. Patients in the intervention group who received the action of chewing gum showed pretest results were still low before chewing and experienced an increase in intestinal peristalsis after chewing gum. This means chewing gum can stimulate intestinal motility. Through cephalic reflexes and increase hormone production, gastrointestinal can accelerate intestinal peristalsis. Also, chewing gum interventions are useful in the recovery process of patients, where oral intake can meet the nutritional needs of patients and help speed up the recovery process. This will have direct implications for the reduction in hospitalization time and the decrease in hospital costs.

6. Conclusion

The Chewing gum can be independent nursing interventions can increase intestinal peristalsis in cesarean section patients. The nurse profession can use chewing gum to become one of the nursing independent interventions because easy. A limitation encountered since the length of time the researcher controls the operation is 40 to 90 minutes long.

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