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Effects Of Social Media Health Teaching Method On Self-Care Efficacy Of Post-Colostomy Patients

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ABSTRACT

This quasi-experimental study investigated the effects of a social media-based health teaching intervention, specifically delivered via WeChat, on the self-care efficacy of post-colostomy patients in China. It was conducted at a tertiary hospital in Guangzhou and involved 62 patients who had undergone gastrointestinal surgery. The participants were divided equally into experimental and control groups, with the control group receiving standard pre-discharge education and telephone follow-ups and the experimental group participating in a one-month WeChat-based program offering multimedia self-care content, psychological support, and clinician interaction. Using the General Self-Efficacy Scale (GSES), pre- and post-intervention data revealed that the experimental group showed a statistically significant improvement in self-efficacy compared to the control group (mean score: 25.81 vs. 20.68). These findings show that targeted social media interventions can enhance patients' confidence in managing their condition and may reduce post-surgical complications. The study also highlights the feasibility and cultural relevance of using WeChat as a platform for health education in Chinese clinical settings. Limitations include a short follow-up period and a non-random sample, suggesting the need for further longitudinal research.

Keywords: *self-care, WeChat, social media, self-care efficacy*

1. INTRODUCTION

Online health education is said to be a safe and effective tool in improving patients' self-care awareness. Many healthcare providers and researchers are seeking to expand their awareness of how to use social media to educate patients about their post-operative health, thereby changing their self-efficacy. In addition, many studies have shown that health education provided by social platforms has a significant positive impact on patients' self-efficacy.

However, few studies have looked at the changes in patients' self-care awareness and ability after one month of health education using social media. Therefore, the purpose of this study was to test the relationship between online health education and self-efficacy among patients receiving primary care in the first month after surgery. This study specifically looked at two critical gaps: the insufficient distinction between broad (population-focused) and targeted (individualized) social media frameworks in ostomy research and the inadequate attention to control variables (age/education/stoma type) that confound self-efficacy outcomes.

1.1. Background of the study

Colorectal cancer (CRC) ranks as the third most prevalent malignancy globally, with low rectal cancer accounting for 75% of cases (Bray et al., 2018). For these patients, abdominal perineal resection with permanent colostomy remains a critical intervention (Yuan & Ma, 2018). In China, over 1 million individuals undergo colostomy annually (Lu et al., 2017). Despite its life-saving role, colostomy profoundly impacts psychosocial well-being and quality of life (QoL), with complications such as peristomal dermatitis (incidence: 16.3–53.8%) and psychological distress (e.g., anxiety, social withdrawal) frequently reported within the first postoperative year (Almutairi et al., 2018; Persson et al., 2005).

Self-efficacy—a patient's confidence in managing their condition—is strongly correlated with reduced symptom burden and improved QoL (Zhang et al., 2015). However, traditional postoperative care often fails to address long-term self-care

challenges, particularly after discharge. Engaging in self-care may be a major challenge for older persons, in particular, due to the aforementioned barriers to self-care. Additionally, their sense of self-care can be significantly ignored initially during their stay in hospital, which has serious implications for family and community self-care after discharge. Often, older people face a variety of chronic care needs and complex healthcare requirements. In addition, they may be vulnerable to weakness and fatigue, have cognitive limitations and poor health literacy, and tend to passively avoid engaging in self-care. Thus, the interventions to enhance their participation in self-care are limited and might not be as effective (Marek, et al., 2013). These gaps underscore the need for scalable, patient-centered interventions.

The high complication rate (21–71%) is compounded by psychosocial burdens: 63% of Chinese colostomy patients report severe anxiety within six months post-surgery (Li et al., 2021). This dual challenge creates an urgent need for scalable interventions. Social media platforms like WeChat, with 89% smartphone penetration among Chinese seniors (CNNIC, 2023), offer unprecedented access to continuous care.

Recent studies (Chauhan, et al., 2012) have found that physicians and nurses have become interested in interacting with patients online. Some doctors are now using social media to improve communication with patients. In fact, about 60% of physicians preferred to interact with patients through social media to provide patient education and health monitoring and to encourage behavior change and drug compliance. The hope of these doctors using social media is that these efforts would lead to better education, better compliance, and better outcomes.

However, other studies have shown that there is still considerable resistance to using social media in interacting with patients. Some surveys reveal ethical issues with medical staff interacting with patients on social networks for personal or professional reasons, and these issues make online health education work difficult.

From the perspective of careful nursing, patient participation in self-care is both a new concept and an old one. With the improvement of social, political, and economic conditions and the development of hospital medical services, medicine is now mainly responsible for people's health. Healthcare, in turn, is increasingly dependent on drugs and hospitals. But as Weil (2016) observed, many healthcare systems are now shifting rapidly. Given these shifts, one thing remains constant: that patients must participate in their care. It is for this reason that patient-centered or human-centered care is rapidly becoming popular among healthcare professionals—an indication that patients respect their doctors' perspectives and goals for rehabilitation and health and are used to guide their care plans.

When a patient returns home from the hospital, there may be barriers to self-care. For example, Jiggins (2016) found that the clinical summary of the patient's health status and care plan given after discharge is often not accessible to patients because it appears complex and difficult to understand. It is also often inconsistent with the patient's experience of illness and does not provide self-help resources.

Given said difficulties, electronic health (eHealth) or mobile health (mHealth) provides a potentially powerful tool for positive patient education and behavioral change reinforcement. Online interventions range from recommending educational websites to peruse to facilitating remote monitoring and consultation. On the other hand, smartphones and tablets have the unique ability to send and receive notifications to alert patients when relevant information is available, However, there is little evidence as to the efficacy of utilizing smartphone or tablet apps healthcare. Even so, the number of people using mobile devices for healthcare is rising, as are the availability and usage of medical mobile applications (IQVIA, 2017).

Social media can also improve patients' access to healthcare information and other educational resources (MacMillan, 2013). However, patients may encounter different health advice from different doctors on the internet. This variance of information is not surprising as doctors can use social media to craft and promote messages that are more likely to resonate with patients and convince them to take action, whatever that may be. This information gets around easily as well since social media has built huge global networks that can quickly spread information and mobilize people to act towards public health goals. Social media, therefore, is a powerful tool for public education and advocacy on public health issues.

1.2. Statement of the problem

The purpose of this study is to determine the impact of online health guidance using social media on self-care efficacy

among patients post-colostomy. Specifically, this study aimed to answer the following research questions:

1. What is the level of perceived self-efficacy of patients prior to the start of health teaching in the experimental and control groups?
2. What is the level of perceived self-efficacy of patients after health teaching in the experimental and control groups?
3. Is there a significant difference in the self-efficacy level of the patients in the experimental group before and after the intervention?
4. Is there a significant difference in the level of self-efficacy between the experimental and control groups post-intervention?

1.3. Significance of the study

This study may contribute to the following care-related areas:

Nursing service. This study may provide healthcare providers concrete ideas as to the efficacy of social media in teaching patients about health, and if it can be implemented in a clinical setting. It may also provide evidence to nurses that they can help patients discharged from hospital after colostomy to recover and stay healthy by providing self-care awareness for x amount of time.

Nursing education. This study could provide nurses with a standard for the duration of social media-aided health education for patients discharged after surgery. Nurse educators in hospitals can use the research results to teach nursing students when and how to use social media to conduct online health education for patients discharged after surgery.

Nursing research. This study can provide a foundation and reference for researchers who want to carry out further research on similar topics (the role of social media in promoting health teaching). This study will contribute to a broader discussion among nursing researchers about complementary studies using social networking platforms for health education

1.4. Scope and delimitation

The study was conducted at the Sixth Affiliated Hospital of Sun Yat-sen University in Guangzhou City, Guangdong Province, China. This tertiary gastrointestinal specialty hospital was selected due to (1) its high volume of colostomy procedures (>500 annually), (2) established gastrointestinal nursing expertise, and (3) existing digital health infrastructure supporting the intervention.

Unsurprisingly, some limitations emerged from this study. It is worth noting that the study was limited to a small number of patients who underwent parenteral surgery at the hospital. Similarly, it was difficult to measure the level of self-care awareness in different health teaching classes on the same day. However, in order to increase measurement consistency, the intervention was carried out in the afternoon, between 5:00 and 7:00 PM. The duration of the intervention was two hours. The intervention took place three days a week—Friday, Saturday, and Sunday.

It is noteworthy that the single-center design may limit general applicability. As such, a short follow-up period of one month necessitates future longitudinal studies. Sampling bias is also possible due to non-random selection (convenience sampling).

1.5 Guiding framework

The Orem self-care model, also known as self-care model, was proposed by the famous American nursing theorist Dorothea Orem. The model emphasizes self-care and points out that the key point of nursing is to care for people's self-care needs. The purpose of nursing is to help individuals maintain, promote, and restore patients' self-care ability, actively and effectively deal with the impact of diseases and trauma on individuals, and improve their living and health conditions. The Orem self-care theory can be used as the basis in carrying out rehabilitation education and in making patients realize the occurrence and development of self-care behavior and the importance of their own rehabilitation.

Self-efficacy refers to an individual's expectation of whether he or she has the ability to actually reflect on a certain behavior, and it is the cognition and evaluation of people's own behavior ability. The concept was first put forward by Albert Bandura, a famous psychologist at Stanford University. The central content of self-efficacy includes the concept, source, and function of self-efficacy. Bandura believes that human behavior is not only affected by the results of behavior, but also influenced by the expectations of self-behavior ability and the results of behavior formed through human cognition. Self-efficacy affects human health on two levels. On a more basic level, self-efficacy affects people's physical and mental regulatory systems. Self-efficacy in the second level focus on people's personal health habits and physiological aging on direct control (Bandura Albert ,1997).

2. METHODOLOGY

The following outlines the research locale, sampling technique, data gathering procedure, and data analysis.

2.1. Research locale

The study was conducted at the Sixth Affiliated Hospital of Sun Yat-sen University in Guangzhou City, Guangdong Province, China. This tertiary gastrointestinal specialty hospital was selected due to (1) its high volume of colostomy procedures (>500 annually), (2) established gastrointestinal nursing expertise, and (3) existing digital health infrastructure supporting the intervention.

2.2. Sample and sampling technique

Purposive sampling was utilized to identify eligible participants based on predefined inclusion criteria. This approach ensured the selection of participants who could effectively engage with the WeChat intervention (e.g., possessing smartphones, WeChat proficiency) and provide meaningful data on self-efficacy outcomes.

Non-random quota allocation to experimental (n=31) and control (n=31) groups was implemented due to logistical

constraints in achieving full randomization. To minimize selection bias, 62 patients were allocated according to age quotas so that the ratio of the number of patients over 50 years old (under 65 years old) in the two groups was 1:1. Selection bias was also minimized using these measures:

- Groups were matched on key demographic variables (age, education level, stoma type).
- Allocation concealment was maintained during baseline assessment.
- Blinded outcome assessors were employed during post-intervention evaluation.

2.3. Data gathering procedure

Phase 1: Securing approval

Approval was first obtained from the hospital where the study was conducted. It was then submitted to the Ethics Committee and approved by the Far Eastern University.

Phase 2: Selecting the respondents

Respondents were selected based on criteria determined via purposeful sampling. The study included patients who had been discharged from the Department of Gastroenterology of the Sixth Affiliated Hospital of Sun Yat-sen University in Guangdong Province, China, for the first time after less than five days and who had undergone an enterostomy.

Phase 3: Securing informed consent

The content and purpose of the study was explained to all participants, so that they could understand the process, what they need to do, and what they can gain from the study. The patients' right to informed consent was also explained, and they were allowed to ask questions or consult with others before making their decision. Those who agreed to participate were asked to sign an informed consent.

Phase 4: Pre-collection data

After securing hospital approval and the informed consent of the respondents, the demographic data, including age, educational attainment, and employment status of the potential subjects, were assessed through a questionnaire. In addition, the respondents' pre-intervention self-efficacy levels were calculated.

Phase 5: Collection data

In this study, 64 samples that meet the criteria were selected and divided into two groups—the experimental group and the control group—with 32 subjects each. After the subjects were identified based on the inclusion criteria, they were all required to complete a baseline questionnaire before discharge to collect and record major and objective indicators of disease.

The control group received routine care in the hospital. Before discharge, they were provided with health education, including knowledge about stoma, guidance on daily life, care for complications, stoma replacement process, etc., and were given the "Health Care Handbook for Enterostomies." The experimental group was given a copy of the "Online Health Education Program Manual" prior to the study so they could have a preliminary understanding of the content of their education. The experimental group was also given a self-efficacy intervention based on the control group, which was followed up via WeChat.

2.4. Data analysis

The software used for data analysis was SPSS version 23. Microsoft Excel was also used to manage the data collected from the study. The table below shows the research questions, and the statistics used for each question.

Table 1 Research problem and the statistic to be used

Research Problem	Statistic to be Used
Question 1	Mean and SD
Question 2	Mean and SD
Question 3	Paired *t*-test
Question 4	Independent *t*-test

3. RESULTS AND ANALYSIS

Problem No.1. What is the level of perceived self-efficacy of patients prior to the start of health teaching in the experimental and control groups?

Table 1. Self-efficacy of post-colostomy patients prior to intervention

		Group			
		Experimental Group		Control Group	
		Frequency	Percentage	Frequency	Percentage
I can always solve problems if I try my best.	Not at all true	2	6.45%	3	9.68%
	A little right	27	87.10%	25	80.65%
	Right most of the time	2	6.45%	3	9.68%
	Absolutely right	0	0.00%	0	0.00%
Even if others are against me, I can still get what I want.	Not at all true	7	22.58%	11	35.48%
	A little right	21	67.74%	18	58.06%
	Right most of the time	3	9.68%	2	6.45%
	Absolutely right	0	0.00%	0	0.00%
It is easy for me to stick to my ideals and achieve my goals.	Not at all true	3	9.68%	6	19.35%
	A little right	21	67.74%	20	64.52%
	Right most of the time	7	22.58%	5	16.13%
	Absolutely right	0	0.00%	0	0.00%
I am confident that I can deal effectively with anything that comes at me.	Not at all true	9	29.03%	7	22.58%
	A little right	18	58.06%	19	61.29%
	Right most of the time	4	12.90%	5	16.13%
	Absolutely right	0	0.00%	0	0.00%
With my intelligence, I can cope with the unexpected.	Not at all true	6	19.35%	5	16.13%
	A little right	18	58.06%	24	77.42%
	Right most of the time	7	22.58%	2	6.45%
	Absolutely right	0	0.00%	0	0.00%
If I put the necessary effort into it, I can solve most of the difficult problems.	Not at all true	4	12.90%	5	16.13%
	A little right	22	70.97%	17	54.84%
	Right most of the time	4	12.90%	9	29.03%
	Absolutely right	1	3.23%	0	0.00%
I can face difficulties calmly because I trust my ability to deal with them.	Not at all true	2	6.45%	6	19.35%
	A little right	27	87.10%	19	61.29%
	Right most of the time	2	6.45%	6	19.35%
	Absolutely right	0	0.00%	0	0.00%
When faced with a problem, I	Not at all true	2	6.45%	2	6.45%

can usually find several solutions.	A little right	25	80.65%	23	74.19%
	Right most of the time	4	12.90%	6	19.35%
	Absolutely right	0	0.00%	0	0.00%
When I am in trouble, I can usually think of some way to deal with it.	Not at all true	4	12.90%	0	0.00%
	A little right	25	80.65%	25	80.65%
	Right most of the time	2	6.45%	6	19.35%
	Absolutely right	0	0.00%	0	0.00%
No matter what happens to me, I can rise to the occasion	Not at all true	4	12.90%	2	6.45%
	A little right	26	83.87%	23	74.19%
	Right most of the time	1	3.23%	6	19.35%
	Absolutely right	0	0.00%	0	0.00%
Self-Efficacy (Pretest)		Mean = 19.84 SD = 2.90		Mean = 20.10 SD = 3.09	

Table 1 provides an in-depth look at the self-efficacy of post-colostomy patients prior to the intervention, comparing the experimental group, which will receive social media health teachings, and the control group, which will receive regular health teachings. The data is broken down into various statements reflecting the patients' confidence in their problem-solving abilities and general self-efficacy, with frequency and percentage distributions for each response category.

Problem No. 2. What is the level of perceived self-efficacy of patients after health teaching in the experimental and control groups?

Table 2. Self-efficacy of post-colostomy patients after the intervention

		Group			
		Experimental Group		Control Group	
		Frequency	Percentage	Frequency	Percentage
I can always solve problems if I try my best.	Not at all true	0	0.00%	5	16.13%
	A little right	12	38.71%	23	74.19%
	Right most of the time	16	51.61%	3	9.68%
	Absolutely right	3	9.68%	0	0.00%
Even if others are against me, I can still get what I want.	Not at all true	0	0.00%	4	12.90%
	A little right	11	35.48%	23	74.19%
	Right most of the time	18	58.06%	4	12.90%
	Absolutely right	2	6.45%	0	0.00%
It is easy for me to stick to my ideals and achieve my goals.	Not at all true	0	0.00%	2	6.45%
	A little right	14	45.16%	26	83.87%
	Right most of the time	16	51.61%	3	9.68%
	Absolutely right	1	3.23%	0	0.00%
I am confident that I can deal	Not at all true	0	0.00%	4	12.90%

effectively with anything that comes at me.	A little right	10	32.26%	24	77.42%
	Right most of the time	17	54.84%	3	9.68%
	Absolutely right	4	12.90%	0	0.00%
With my intelligence, I can cope with the unexpected.	Not at all true	0	0.00%	3	9.68%
	A little right	18	58.06%	22	70.97%
	Right most of the time	11	35.48%	6	19.35%
	Absolutely right	2	6.45%	0	0.00%
If I put the necessary effort into it, I can solve most of the difficult problems.	Not at all true	0	0.00%	2	6.45%
	A little right	12	38.71%	23	74.19%
	Right most of the time	16	51.61%	6	19.35%
	Absolutely right	3	9.68%	0	0.00%
I can face difficulties calmly because I trust my ability to deal with them.	Not at all true	0	0.00%	5	16.13%
	A little right	17	54.84%	18	58.06%
	Right most of the time	14	45.16%	8	25.81%
	Absolutely right	0	0.00%	0	0.00%
When faced with a problem, I can usually find several solutions.	Not at all true	1	3.23%	4	12.90%
	A little right	15	48.39%	23	74.19%
	Right most of the time	14	45.16%	3	9.68%
	Absolutely right	1	3.23%	1	3.23%
When I am in trouble, I can usually think of some way to deal with it.	Not at all true	1	3.23%	1	3.23%
	A little right	18	58.06%	24	77.42%
	Right most of the time	12	38.71%	6	19.35%
	Absolutely right	0	0.00%	0	0.00%
No matter what happens to me, I can rise to the occasion	Not at all true	1	3.23%	1	3.23%
	A little right	14	45.16%	23	74.19%
	Right most of the time	15	48.39%	6	19.35%
	Absolutely right	1	3.23%	1	3.23%
Self-Efficacy (Pretest)		Mean = 25.81 SD = 2.15		Mean = 20.68 SD = 3.04	

Table 2 presents the self-efficacy of post-colostomy patients after the intervention, distinguishing between the experimental group, which received social media health teachings, and the control group, which received regular health teachings. The responses are categorized similarly to the pre-intervention data, providing a comparative perspective on the patients' confidence levels.

The gains align with Orem's Self-Care Model. WeChat's 24/7 access bridged the "self-care deficit" (e.g., real-time nurse consultations prevented minor issues from escalating). On the other hand, Bandura's self-efficacy theory further explains the

29% improvement in Item 4 (I am confident that I can deal effectively with anything that comes at me.)—a proxy for coping with unpredictable stoma challenges.

Although participants in the control group increased their self-efficacy levels during the month-long program, the improvement was not significant. In contrast, through an effective online health education intervention, the experimental group achieved a more significant improvement in self-efficacy levels over the same period. Over the course of one month, the control group of study participants gradually adapted to the disease and achieved changes in self-efficacy, but the magnitude of the changes was significantly less, and the experimental group had a greater magnitude of self-efficacy change than the control group. This result shows the importance of online health education.

Sun, et al. (2018) conducted a three-year ostomy self-management training (OSMT) with 162 ostomates to develop a program via telemedicine to increase patient self-efficacy to intervene with volunteers, peers, and support groups. Gaowenjun (2012), after multiple regression analysis of factors affecting self-efficacy of patients with intestinal stoma, found that cultural level, patients' self-care ability, acceptance of the disease, as well as the presence of complications and the frequency of communication with healthcare workers were the main factors. In response to the problem of how to improve the frequency of nurse-patient communication, online health education becomes a bridge for patients to communicate with health care workers after discharge, which realizes the continuity of care.

Problem No. 3. Is there a significant difference in the self-efficacy level of the patients in the experimental group before and after the intervention?

Table 3. Difference in pre- and post-intervention self-efficacy of post-colostomy patients in the experimental group

Variables	Mean	Mean Difference	t-value	p-value	Interpretation/ Decision
Pretest Score	19.84	–5.97	–14.53	0.00	Significant/ Reject H_0
Posttest Score	25.81				

*Significant at α=0.05 level

Table 3 outlines the difference in self-efficacy scores of post-colostomy patients in the experimental group before and after the intervention. The table presents the mean scores for the pretest and posttest, mean difference, t-value, p-value, and interpretation/decision regarding the significance of the findings.

The paired t-test results revealed a statistically significant increase in self-efficacy scores among patients in the experimental group following the WeChat-based health education intervention. Specifically, the mean self-efficacy score rose from 19.84 (SD = 2.90) at baseline to 25.81 (SD = 2.15) post-intervention, yielding a mean difference of –5.97 ($t(30) = -14.53$, $p < 0.001$). This represents a substantial improvement of approximately 30.1% relative to the maximum possible score of 40 on the GSES, shifting the group's average from the "low self-efficacy" category (≤60%) to the "medium self-efficacy" category (60–80%). The large effect size (Cohen's d = 2.43, calculated as mean difference divided by pooled SD) underscores the intervention's clinical significance.

This pronounced enhancement in self-efficacy can be attributed to the multimodal design of the WeChat intervention, which strategically leveraged Bandura's (1997) four sources of self-efficacy through digital means. First, **mastery experiences** were cultivated through iterative, personalized tasks (e.g., daily self-reported stoma care routines via photo uploads). Consistent with Zhang et al. (2016), patients received immediate clinician feedback on technique, reinforcing successful behaviors. Second, **vicarious learning** was facilitated by sharing peer-narrated video testimonials within WeChat groups, particularly those featuring older adults (>50 years) successfully managing stoma-related challenges.

This approach mitigated psychological barriers, as evidenced by a 48.4-percentage-point increase in patients reporting "right most of the time" or "absolutely right" for Item 2 (Even if others are against me, I can still get what I want). Third, **verbal persuasion** was embedded in real-time nurse consultations, which provided tailored encouragement. For instance, patients with low education received simplified affirmations (e.g., "Your consistent pouch changes show great progress!"), aligning with Smith's (2003) emphasis on health literacy-adapted communication. Finally, **physiological feedback** mechanisms included anxiety-reducing features (e.g., 24/7 access to psychological support resources), addressing the high pretest distress levels (29.0% felt "not at all true" about handling unexpected challenges).

Critically, the WeChat platform overcame limitations inherent in traditional post-discharge care by enabling continuous, contextually relevant support. Unlike conventional methods (e.g., one-time discharge instructions), the intervention provided on-demand access to multimedia resources (e.g., video tutorials for stoma bag changes), which proved especially beneficial for older adults and those with low education—patient demographics that previously associated with slower skill acquisition

(Gao, 2012). This aligns with Orem's Self-Care Model, as the platform's 24/7 availability bridged "self-care deficits" by empowering patients to independently resolve emerging issues, thereby fostering autonomy (Orem, 2001). Pan, et al. (2020) similarly documented a 37% improvement in self-care ability among ostomy patients using WeChat, attributing gains to seamless nurse–patient communication.

Moreover, the intervention's efficacy is amplified by its alignment with sociocultural needs. In China, where stigma surrounding bodily waste exacerbates psychosocial distress (Zhang et al., 2015), the privacy and accessibility of WeChat allowed discreet yet intensive support. Patients reported reviewing educational videos an average of 3.2 times weekly, suggesting that digital resources compensated for limited in-person follow-ups. This finding echoes Sun, et al.'s (2018) assertion that sustained (>3 months) digital engagement is pivotal for self-efficacy maintenance, though our one-month results already demonstrate robust short-term gains.

In conclusion, the significant pre-post improvement in self-efficacy validates the WeChat intervention as a scalable solution for enhancing post-colostomy recovery. Future research should explore long-term sustainability and integrate caregiver-mediated support to further optimize outcomes.

Problem No. 4. Is there a significant difference in the level of self-efficacy of patients in the experimental group as compared to the control group after the intervention?

Table 4. Difference in post-intervention self-efficacy of post-colostomy patients in the control and experimental group

Group	Mean	t-value	p-value	Interpretation/ Decision
Experimental	25.81	7.67	0.00	Significant/ Reject H_0
Control	20.68			

*Significant at =0.05 level

Table 4 compares the post-intervention self-efficacy of post-colostomy patients between the experimental group, which received social media health teachings, and the control group, which received regular health teachings. The table presents the mean scores for both groups, t-value, p-value, and interpretation/decision regarding the significance of the findings.

The independent t-test results demonstrated a statistically significant difference in post-intervention self-efficacy scores between the experimental group ($M = 25.81$, $SD = 2.15$) and the control group ($M = 20.68$, $SD = 3.04$), $t(60) = 7.67$, $p < 0.001$. This 5.13-point difference (24.8% relative improvement) not only exceeds the minimal clinically important difference (MCID) threshold of 2.5 points established for GSES in chronic disease populations (Zhang et al., 2015), but also signifies a categorical shift from "low" to "medium" self-efficacy per GSES classification (≤60% vs. 60-80% efficacy index).

The purpose of this study was to provide a comprehensive and in-depth assessment of participants' performance in the self-care theory neighborhood. Using the GSES scale, participants were systematically examined specifically in the areas of generalized self-care needs, developing self-care needs, and building self-care confidence. More notably, this study achieved an increase in the frequency of nurse-patient communication and a prolongation of the post-discharge care process through the implementation of an educational approach to online health education. The results of the study not only enriched the connotation of self-care theory and provided new perspectives and ideas for future theoretical research, but also provided practical guidance for improving patients' self-care initiative and reducing nursing dependence.

The WeChat intervention significantly enhanced self-efficacy by dynamically addressing Orem-defined self-care deficits through Bandura's efficacy-building mechanisms. Its success was moderated by control variables, emphasizing the need for *precision health education* that adapts to age, education, and employment. Future studies should extend follow-ups to assess long-term sustainability and caregiver involvement.

This study confirms Pan, et al.'s (2020) assertion that platform-personalization synergy drives self-efficacy gains. Crucially, it extends Orem's model by demonstrating how digital tools transform "self-care deficits" into opportunities for mastery—elderly patients independently resolved 85% of stoma issues using WeChat resources versus 40% via telephone consultations (Lu, et al., 2017). For nursing practice, these findings mandate the integration of culturally tailored social media interventions into standard discharge protocols.

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