Using Reflective Teaching Program to Explore Health-Promoting Behaviors in Nursing Students

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Introduction

Nurses are healthcare professionals. One of their major tasks is to provide health education to patients that helps the latter pursue healthier lifestyles. However, nurses often find that, although they provide health education to patients, patients are not always able to make behavioral changes. Moreover, nurses lack the deep understanding of the problems and difficulties faced by their patients necessary to tailor behavioral change suggestions to individual patient needs. Therefore, the patient’s problem may still persist.

Classroom teaching typically provides only knowledge related to health-promoting behaviors and not actual experience with practicing behaviors. However, one responsibility of nurses is to teach patients to practice healthy behaviors. If nurses do not understand how to practice health-promoting behaviors themselves, how can they teach their patients? This gap continues to exist between nurses and patients. Therefore, actual practice will help nurses understand the challenges encountered in achieving success. Thus, early implementation of the relevant scenarios of health-promoting behaviors in the nursing curriculum may help nursing students improve their problem-solving abilities and empathize with the difficulties faced by patients who are unable to make behavioral changes.

Recently, conventional “spoon-feeding” teaching has started to undergo changes, with various types of flipped teaching methods under active development. A number of innovative teaching methods have already been employed in different courses for students of various ages. A Chinese literature teacher in Taiwan developed the “flipping-literature class”

ABSTRACT

Background: The attitudes of nurses toward health promotion affect patients. However, current classroom teaching does not provide nursing students with actual experiences. An experiential and reflective teaching design will help nursing students practice actual health behaviors and record their feelings. This will help nursing students better understand the difficulties and feelings experienced by nurses when encouraging patients to make behavioral changes in clinical settings.

Purpose: This study aimed to explore the experiences and factors affecting health-promoting learning with reflective teaching in nursing students.

Methods: This explorative study integrated the “reflective assessment, engagement, and action-reflection” strategy of reflective teaching into the standard health-promotion teaching curriculum to understand the experiences of nursing students when executing health-promoting behaviors. Fifty-seven second-year nursing students from a university in northern Taiwan participated in this course, which was conducted between September 2017 and January 2018. The data were collected from the contents of the reflective journals written by the nursing students and analyzed using thematic analysis.

Results: The three health-promoting behaviors performed by most of the students were regular exercise, balanced and healthy diet, and adequate daily water intake. The feelings experienced by the nursing students during the execution of health-promoting behaviors included easier said than done, compromise and adjustment, and continuation of health behaviors. Accommodation, peer encouragement, and support were important, facilitating factors of health-promoting behaviors in this study.

Conclusions/Implications for Practice: The results of this study may serve as a reference for nursing lecturers when employing reflective teaching in the classroom. Reflective teaching designs for actual experiences help nursing students experience the crucial factors and benefits of executing health-promoting behaviors.

Key Words: nursing students, health promotion, reflective journal, reflective teaching.

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A reflective teaching program was designed and “reflective assessment, engagement, and action reflection” teaching strategy was employed to conduct reflective teaching in health promotion courses. Classroom discussions and reflective journals were used to encourage students to introspect their unhealthy behaviors in this study. These experiences have encouraged scholars to incorporate different teaching methods into the nursing curriculum.

Some studies found that reflective teaching may increase the communication, caring, and critical thinking abilities of students (Chen, 2010; Lo, Chang, & Chen, 2014). One study found that the methods that affected nursing students' reflective abilities were, from higher to lower importance: reflective journals, classroom discussions, and book reviews (Lo et al., 2014). Writing reflective journals has been found to affect the knowledge, attitudes, and behavior of nursing students positively (Ross, Mahal, Chinnapen, Kolar, & Woodman, 2014). Therefore, reflective learning interventions should be introduced into the nursing curriculum as early as possible to ensure the nurses are equipped with problem-solving and caring abilities. In this study, a nursing curriculum was designed that employed a reflective teaching intervention approach. In this curriculum, the nursing students execute health-promoting behaviors, which conform to the “learning-by-doing” philosophy advocated by John Dewey. However, reflection is an intrinsic process that is difficult to assess (Chen, Lai, Chang, Hsu, & Pai, 2016). To understand the experience of nursing students in achieving behavioral change, this study employed a reflective teaching program wherein nursing students wrote reflective journal entries during the health-promoting behaviors' implementation process.

**Methods**

**Design**

This was an explorative study that used qualitative data analysis. The “reflective assessment, engagement, and action-reflection” teaching strategy was employed to conduct reflective teaching in health promotion courses. Classroom discussions and reflective journals were used to encourage students to introspect their unhealthy behaviors in this study. The reflection journal entries of the students that corresponded to the execution of health-promoting behaviors were analyzed. The course was conducted, and the data were collected between September 2017 and January 2018.

**Teaching Strategy**

A reflective teaching program was designed and “reflective assessment, engagement, and action reflection” was employed in a course for students. In the first 9 weeks of the course, classroom teaching was performed to equip students with health-promotion-related knowledge and skills, thereby enabling students to identify their personal health challenges. The principles of behavioral changes or health promotion action strategies were used to develop a 4-week health promotion plan.

In teaching strategy, “reflective assessment” refers to stimulating the willingness and motivation of students to make the changes necessary to eliminate unhealthy behaviors. The relationship between unhealthy behaviors and disease was explained to the students, and an assessment was conducted to analyze the unhealthy behaviors that the students practiced in their everyday lives. In addition, in the “reflective assessment” stage, the instructor guided nursing students to discuss their unhealthy behaviors and strategies for changing these behaviors. After the discussions, nursing students decided to perform their health-promoting behavior and plan.

In the “engagement” stage, the students learned to self-assess health-promoting behaviors that conformed to the health principles and to design health-promoting behaviors that are tailored to their personal needs. In the “action-reflection” stage, the students recorded in their reflective journal over a period of 4 weeks what health-promoting behaviors they had executed using pictures and/or text, their feelings regarding executing the health promotion action plans, and the reasons for their success or the difficulties they experienced in achieving their goals.

The teaching strategy of “reflective assessment, engagement, and action-reflection” helped assess (a) “What kinds of health problems and unhealthy behaviors do the nursing students have?”, (b) “What kinds of health-promoting behaviors and planning did the nursing students pursue?”, and (c) “What are the positive and negative factors that influenced the execution of health-promoting behaviors?”

**Participants**

Fifty-seven second-year nursing students (16 men and 41 women) at a university in northern Taiwan participated in the “health promotion” course used in this study.

**Data Collection**

Data were collected from the reflective journals written by the 57 participants over a period of 4 weeks, during which time they were executing health-promoting behaviors. One reflective journal entry was written per week. Thus, each participant wrote four journal entries in total. These reflective journals were submitted online, and each journal was numbered and stored in the flash drive that was accessed for this project.

**Data Analysis**

This study employed the six steps of the thematic analysis method of Braun and Clarke (2006) in data analysis. The six steps were as follows: (a) data familiarization: the reflective journals were repeatedly read, and the thoughts on meaningful data were jotted down; (b) generating initial codes:
after reading the content of the reflective journals, meaningful content was coded; (c) searching themes: related and similar codes were analyzed and grouped together to form potential themes; (d) reviewing themes: the themes were repeatedly read, and the relevance of their context was confirmed; (e) defining and naming themes: the nature of each theme was examined, and the data described by each theme were confirmed; and (f) writing the report.

In addition, a Fisher’s exact test was used to analyze the effect of gender on the observed health-promoting behaviors.

**Rigor**

Rigor in this study was maintained by adhering to credibility, dependability, transferability, and confirmability (Lincoln & Guba, 1985). In terms of credibility, the data in this study originated from the reflective journals, which were written by the 57 participants. The contents of these reflective journals reflected the personal experiences of the participants in making health-promoting behaviors, and the data were highly credible. In terms of dependability, data coding and theme formulation were conducted by the first author by repeatedly reading the reflective journals and discussing the content with the second author. When there were differences in opinion between the two authors, the relevant reflective journal entries were reread to clarify the context and achieve consistency. In terms of transferability, the researchers dispassionately analyzed the experiences of the participants and avoided adding subjective viewpoints to ensure that the rich study results were inferred from real-life scenarios. In addition, the researchers reflected on the effects of their subjective values on the study during the study process to avoid generating bias during interpretation and to achieve confirmability.

**Ethical Considerations**

Before implementation, this research proposal was approved by the research ethics committee of a medical center (Reference No. 201701256B0) and by related departments in the university. To protect the rights of the nursing students and ensure the security of the data, numbers were used in place of participant names during data analysis.

**Results**

Regular exercise was the health-promoting behavior most often cited by the participants (22 students), followed, in descending order, by a balanced and healthy diet (15) and adequate daily water intake (10). In addition, five participants cited getting enough sleep, and five cited reducing the time they spent online. The female participants cited a balanced and healthy diet twice as frequently as their male peers. No significant gender difference was found for any of the health-promoting behaviors (Table 1).

**Emerging Themes**

Six subthemes and three main themes emerged from the participants’ reflective journals, as shown in Table 2. The main themes included easier said than done, compromise and adjustment, and continuation of health behaviors.

Executing the health behavior self-assessment and writing reflective journals when executing health-promoting behaviors over the 4-week period provided an opportunity for the participants to change their unhealthy behaviors. However, this was easier said than done, as the participants learned that behavioral change is difficult. They readjusted their expectations, pursued compromise, and made adjustments to make progressive changes. Moreover, they looked to technological aids and peer encouragement to find the strength to continue the process of behavioral change. Thus, the participants may think of continuing their health behaviors when they experience slight physical changes and a sense of achievement in achieving their goals.

**Theme 1: Easier Said Than Done**

After the participants completed an analysis of their lifestyle, they identified certain aspects that required changes, thereby setting goals. However, when they started making behavioral changes, they found that making these changes was “easier said than done.” Therefore, they experienced feelings of “easy to know but difficult to practice,” which embodied the opportunity to achieve actual change.

**Opportunity for change**

The teachers guided the participants to reflect on their lifestyle in the classroom and requested that they establish a health behavior for 4 weeks as an assignment for this course. Therefore, the participants shared that they had an opportunity to make behavioral changes because of this class assignment.

Student no. 43 mentioned: “This assignment is a great motivation and gives me a goal to continue exercising.” Other participants mentioned that:

“I have often thought of slimming down. Now, I experience stress from the assignment, wherein written reflective

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**TABLE 1.**

**Comparison of Health-Promoting Behaviors Between Male and Female Participants (N = 57)**

| Item                        | Male (n = 16) | Female (n = 41) | χ²   | p    |
|-----------------------------|--------------|-----------------|------|------|
| Health-promoting behaviors  | 1.94         | 0.79            |      |      |
| Regular exercise            | 6            | 37.5            | 16   | 39.02|
| Balanced and healthy diet   | 2            | 12.5            | 10   | 24.39|
| Adequate daily water intake | 4            | 25.0            | 9    | 21.95|
| Get enough sleep            | 2            | 12.5            | 3    | 7.32 |
| Reduce Internet use         | 2            | 12.5            | 3    | 7.32 |
TABLE 2.
Emerged Themes and Subthemes

| Theme                        | Subtheme                                   |
|------------------------------|--------------------------------------------|
| Easier said than done        | (a) Opportunity for change                 |
| Compromise and adjustment    | (b) Everything is difficult in the beginning| |
| Continuation of health behaviors | (a) Progressive changes                     |
|                              | (b) Identification of the strength to persist| |
|                              | (a) Experience physical changes             |
|                              | (b) Achieving a sense of accomplishment     |

journals provide me with greater motivation to exercise.... This assignment provided me with an impetus to convert thought to action” (Nursing Student no. 14) and “With this assignment, I have a goal to execute an exercise plan. Completing this assignment enabled me to cultivate good exercise habits. My reasons for not exercising in the past now appear as excuses.” (Nursing Student no. 44)

**Everything is difficult in the beginning**

After the participants set their goals for behavioral changes, they discovered as they began to invest related efforts that achieving these goals would not be easy. Therefore, they realized that it was not easy to make behavioral changes and felt that everything was difficult in the beginning.

Nursing Student no. 14 wrote in the reflective journal on regular exercise that “I thought it could be achieved very easily, but I never thought that it would be quite tiring at the beginning.”

Nursing Student no. 30 mentioned: “It was really agony at the start to drink so much water every day.”

In working to eat a balanced and healthy diet, Nursing Student no. 12 mentioned that “I forgot about this goal or did not follow the necessary habits for this goal during the first week, resulting in my not being able to achieve the set goal.”

One participant wrote: “I initially thought it would be easy. But in reality, I found that it is really difficult to exercise continuously and that this assignment is tougher than I thought.” (Nursing Student no. 38)

**Theme 2: Compromise and Adjustment**

After Week 1 of the behavioral change program, the participants began to reflect on whether the behavioral change goals they had set were overly high or ideal. Thus, they either adjusted their goals for the second week or devised new ways to help them achieve their set behavioral changes. During this adjustment and adaptation to behavioral changes, the participants employed a number of methods to help them make these changes, including progressive changes and identification of strength to persist.

**Progressive changes**

After the first week, the participants began to believe that achieving behavioral change would not be easy. Therefore, they adopted a series of progressive goals that they hoped would help them achieve their behavioral change goals, albeit more gradually. In the reflective journals, the participants shared how they made behavioral changes. Nursing Student no. 30 mentioned “using progressive methods so that I can slowly get used to it is an effective method.” Nursing Student no. 8 wrote: “It is troublesome to carry a water bottle when going out and that water is tasteless. In the beginning, I forgot to carry a water bottle with me because I rushed out in the morning. I developed the habit of drinking water with a water bottle during the third week.”

Other participants shared: “I did not set a high goal at the start because I hoped I could achieve the goal. I will increase my goal after I gradually get used to it.” (Nursing Student no. 36)

**Identification of the strength to persist**

To achieve the goal of cultivating health behaviors, the participants started to search for the strength to persist from sources such as technological products and peer encouragement and support. All of the participants lived in the university dormitory, and all owned and frequently used mobile phones or smartphones. They used various functions on their smartphones to generate regular reminders of the need to achieve behavioral change. Some used their smartphone's camera function to record the food they ate daily for each meal and used the alarm clock function to self-notify when it was time to drink water. Nursing Student no. 14 even used a mobile phone app to record the distance and calories consumed through walking and cycling each day. Five participants used an app to control the time they spent online on their smartphone. Other participants mentioned that “I initially did not record my dietary habits. However, I started recording my lunch for this assignment. Looking at the daily records (using pictures), I started to realize that my diet is not balanced.” (Nursing Student no. 5) and “I set a timer to remind myself to drink water, and immediately drank water when the alarm rang. My laziness gradually decreased and my self-confidence and sense of achievement increased.” (Nursing Student no. 6). One participant shared that “I do not drink a lot of water because other beverages taste better than water, and there are various new types of drinks sold in the supermarket. Adding lemon slices or honey to the water to add some flavor helped make me like drinking water.” (Nursing Student no. 20)

In addition, the participants shared that part of the incentive to make behavioral changes was the encouragement and support from peers. Nursing Student no. 29 mentioned: “Exercising together with my partners provides me with more impetus to exercise.” Nursing Student no. 13 shared that “I feel that looking for an exercise partner is a good idea, as you can encourage each other.”
Theme 3: Continuation of Health Behaviors

After the participants had experienced an implementation process that was initially difficult and identified effective self-help methods, they slowly experienced the benefits of their changed health behaviors and improved physical condition (many mentioned improvements in constipation and skin conditions). In the third and fourth week, the participants wrote in their reflective journals about the joy of successfully accomplishing their goals and their resulting sense of achievement. They also expressed hope regarding their ability to continue this health behavior.

Experience physical changes

After making positive changes to their health behaviors, many of the participants perceived improvements in their physical condition, as described in the following:

“...It has only been one month between when I began, when I didn’t feel acclimated, and now, when I feel it is natural. My body’s metabolism has shown improvements. In the past, I often experienced constipation, but now I have normal bowel movements.” (Nursing Student no. 27)

“It is difficult to drink a lot of water daily but there are many benefits. I do not experience constipation and my pores have shrunk, enabling me to have more energy.” (Nursing Student no. 30)

“I am slowly starting to like the feeling of a slow jog. This is because my sleep quality has improved after I started exercising, and I do not experience insomnia late at night or watch movies at night like I often did in the past. Exercise has really improved my work and rest habits.” (Nursing Student no. 37)

Achieving a sense of accomplishment

The participants recorded their reflective journal entries every week and analyzed whether they had achieved their behavioral change goals. When preset goals were achieved, they shared their related joy, which reflected their sense of achievement. The reflective journal entry of Nursing Student no. 44 on carrying out regular exercises mentioned: “I enjoy these changes. In the future, even if I am busy and tired, I will continue my exercise habits.”

Some of the participants shared:

I had always thought of changing my habits and myself. However, every time I only talked about it but did not act. This time, I really persisted for a period. I realized I could actually do it. So, it depends on whether I want to carry out a behavior or not! This activity enabled me to drastically change my lifestyle habits and become healthier. (Nursing Student no. 15)

When I have consumed the targeted amount of water, I experience a sense of achievement and realize that this change will persist as long as I have the perseverance! (Nursing Student no. 6)

Maybe I was not used to it at first. However, after I got used to it, I realized that it was not so difficult. I feel that even if there is no need to do such assignments in the future, I will continue to exercise. (Nursing Student no. 14)

Discussion

This study found that the top three health-promoting behaviors performed by the participants were regular exercise, balanced and healthy diet, and adequate daily water intake. These three behaviors highlight the concerns of nursing students about unhealthy behaviors and their desired responses in terms of health-promoting behaviors. The choice of exercise and diet as the most desired health-promoting behaviors echoes Tang, Su, and Huang (2015), who found the top three worse health-promoting behaviors among university students to be health responsibility, exercise, and nutrition. The similarity in findings may reflect the similar backgrounds, and thus problems, of students in both studies. Moreover, Chang, Liao, and Shia (2014) found that 52.4% of university students in Taiwan do not exercise. Hung and Chiu (2011) found that the lifestyle of university students still has room for improvement in terms of developing healthy behaviors and regular exercise. These studies show that university students need to perform health-promoting behaviors such as exercising regularly and eating a balanced diet. Therefore, the performance by the participants in this study of health-promoting behaviors such as regular exercise and healthy and balanced diet was consistent with the findings of previous studies that inadequate exercise and poor diet are major health behavior problems among university students. Furthermore, the results of this study found that female students were twice as likely as male students to consume a balanced and healthy diet, suggesting that female students are more concerned about diet-related body weight problems. This finding is similar to previous studies that found adolescent girls to be more concerned than adolescent boys about their appearance and size (Ganesan, Ravishankar, & Ramalingam, 2018; Šmidová, Andryšková, & Šimůněk, 2018).

The choice of some participants in this study to focus on drinking an adequate amount of water each day highlights an issue that has not been explored in previous studies. The reflective journal of Nursing Student no. 6 notes that he or she does not have a habit of drinking water or carrying a water bottle and often drinks beverages instead of plain water. Nursing Student no. 8 wrote that he or she feels it troublesome to carry a water bottle when going out and that water is tasteless. Many drinks shops are located outside the university that sell beverages at prices comparable with bottled water. Therefore, he or she (Nursing Student no. 8) chose to purchase beverages. Nursing Student no. 20 stated that the reason why he or she does not drink a lot of water is because other beverages taste better than water and because there were new types of drinks sold in the supermarket. In addition, it was easier to purchase these beverages than water. Therefore, the participants in this study frequently
purchase beverages to drink. The descriptions provided by the participants explain why students do not drink water and prefer other beverages. Currently, there are many types of tea beverages sold in Taiwan, encouraging people to choose these instead of water and to discount the importance of drinking water. Drinking beverages habitually increases the risks of health problems because of the sugar and other ingredients in these drinks. Therefore, future studies should further explore the knowledge and behavior of university students related to water consumption.

A previous study found a 20.3% prevalence of Internet “addiction” among university students in Taiwan (Yang, 2014). A prevalent desire among the participants to reduce Internet usage and to get enough sleep was one of the findings of this study. Previous correlation studies have focused on the issue of Internet addiction among university students (Akin, 2012; Chou et al., 2017; Jiang, Zhu, Ye, & Lin, 2012; Mazhari, 2012; Yao, He, Ko, & Pang, 2014). Thus, it is apparent that Internet addiction is a problem in university settings. More intervention studies on Internet addiction are needed in the future. Furthermore, the phenomena of sleeping late and heavy Internet use on mobile phones are related to one another. Both phenomena are common today, justifying greater researcher attention.

This study found that the participants were aware of what changes in personal behaviors were needed and that the course assignment enabled them to achieve their health behavior goals and develop real experiences. Therefore, the participants felt that this assignment provided an opportunity to make positive health-related changes in behavior. The results of this study were similar to those of a Canadian study in which students in a course attempted to make health-related behavior changes and write a reflective report, with investigators finding that the students could facilitate the change process (Lee, Yankick, & Solowoniuk, 2011). Although effecting self-change is difficult, using courses to provide students with opportunities to make health-promoting behavior changes is feasible. Thus, it is recommended that relevant courses be designed for nursing students to help them make changes to their own health-promotion behaviors and to gain experience from learning by doing. In addition, the participants in this study experienced difficulties when they began performing their desired health-promoting behaviors. They found that these behaviors were conceptually easy but difficult to put into practice, a finding that is similar to another study that found that university students possessed knowledge regarding oral hygiene but found this knowledge difficult to put into practice (Chenh, Yang, Hone, & Shieh, 2002).

During the compromise and adjustment process involved in improving health-promoting behaviors, the participants utilized their problem-solving abilities to achieve their behavior goals. The participants used app functions on their smartphones to assist in making health-promoting behaviors. Therefore, using smartphone functions to facilitate health-promoting behaviors was a characteristic of this group of participants. Furthermore, because the participants ranged in age from 19 to 21 years, most lived in the university dormitory, where interactions with peers are typically a regular facet of daily life. The reflective journal entries indicated that the participants carried out health-promoting behaviors cooperatively with their classmates. Therefore, peer encouragement and support were important factors for implementing health-promoting behaviors. These results are similar to those of other studies that found accommodation to be a factor affecting health-promoting behaviors in university students (Bakouei, Seyedi-Andi, Bakhtiar, & Khafri, 2018; Hung & Chiu, 2011).

In participating in the 4-week health behavior change assignment, the participants gradually realized that they were capable of making these changes on their own and felt proud of themselves as a result. Furthermore, many students mentioned experiencing improvements in several physical problems (e.g., constipation and facial acne), which made the participants hopeful that they would continue these better health behaviors after the assignment had finished. These experiences are expected to help make these nursing students more persuasive in helping patients successfully achieve behavioral changes in the future. This finding is similar to Lee et al. (2011), who found that the experiences helped students grow professionally as health promotion practitioners.

The transtheoretical model fits well the process used by nursing students to adopt health promotion behaviors. Classroom teaching and group discussions were conducted during the first 9 weeks of class, at which time the lecturer guides students to reflect and helps them identify their problematic behaviors. This period correlates to the precontemplation and contemplation stages in the transtheoretical model. In Week 10, the students write in their reflective journal the health behavior changes that they desire to make, their current lifestyle and problematic behaviors requiring analysis, and the health behavior changes that they will make in the subsequent 4-week period. This correlates to the preparation stage in the transtheoretical model. After the 4 weeks of practicing health-promoting behaviors, the nursing students begin to exhibit new behaviors and hope that they may continue adhering to these behaviors. This correlates to the action stage in the transtheoretical model. Therefore, this course design employed the transtheoretical model and enabled the students to further experience the process of behavioral change. This study may be used as a reference for designing nursing courses in the future to help students gain actual experience.

This study was a qualitative study. Therefore, the results reflected only the subjective experiences of nursing students during the 4-week behavior change assignment. Follow-up would be needed to determine their success in continuing their learned healthy behaviors after this 4-week period.

Conclusions

The results of this study indicate that experiential and reflective teaching designs help nursing students make actual health behavior changes and record their feelings, which assists them
to better understand the process of behavioral change. Moreover, this process helps students learn methods to achieve behavioral change. Therefore, this experiential and reflective teaching course design may serve as a reference for designing related nursing courses. This course was designed to employ flipped teaching, which enhances the practical experience of nursing students, helping them be more persuasive in helping patients make behavioral changes in the future.

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