A pilot study of self-efficacy enhancing education program on family caregivers’ competencies in caring for patients with mild traumatic brain injury

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Abstract

Purpose: The number of mild traumatic brain injury (TBI) has increased as well as the care demands requiring continuing care from family at home. To reduce the negative consequences and improve outcomes for TBI survivors, effective educational program must be targeted to family caregivers. This pilot study was conducted prior to the actual study to evaluate the feasibility of the self-efficacy enhancing education program on family caregivers’ competencies in caring for patients with mild TBI.

Methods: The self-efficacy enhancing education program was developed based on Bandura’s self-efficacy concept. This program included exploring feeling, teaching, watching the media, and demonstration. Three pairs of family caregivers who cared for mild TBI patients participated in this study. The program was implemented during hospitalization and subjects were followed-up for two times by telephone. The family caregiver’s perceived confidence and performance in caring for mild TBI patients were measured at different points of time.

Results: After completing the program, three family caregivers showed the perceived confidence significantly greater than before. In addition, family caregivers showed high performance and could perform symptoms assessment and management.

Conclusion: The self-efficacy enhancing education program was feasible to do and apply to increase family caregivers’ confidence and performance in caring for patients with mild TBI. However, the program must be further evaluated and tested for its effectiveness compared to routine care.

Keywords: self-efficacy; education program; family caregivers; mild TBI

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Introduction

Traumatic brain injury (TBI) is one of the leading causes of death and disability in the world. TBI is a contributing factor to one-third (30.5%) of all injury-related deaths in the United States (US) (Faul, Xu & Wald, 2010). According to the Health Department of Indonesia (as cited in Ayu, 2010), TBI is the seventh cause of death in 2007. Moreover, in Yogyakarta, Indonesia, TBI was the second cause of death with annual mortality rate of 12% (DIY, 2010). Mild TBI had the highest incidence, which was 70%-90% of all treated brain injuries (Cassidy et al., 2004). Meanwhile, the case of mild TBI in Yogyakarta, Indonesia in 2007 was accounted for approximately 60% of all cases (Kurniawan, 2009).

Many people who sustain mild TBI have complaints that include cognitive, physical, and emotional symptoms. The symptoms occur in 38% to 80% of mild TBI patients (Hall & Chapman, 2005). Common symptoms after mild TBI are headache, dizziness, fatigue, and memory difficulties (Kurniawan, 2009; Lundin, De Boussard, Edman & Borg, 2006; Srijumnong, 2010). Symptoms may occur alone or in combination that emerged immediately or within days after injury and up to three months. The symptoms occur 59% to 91% in the first month after injury (Paniak et al., 2002), 45% in two months (Shocker, 2008), 41.8% to 58% in three months (Dischinger, Ryb, Kufera, & Auman, 2009; Kashluba, Paniak, Blake, Reynolds, Toller-Lobe, & Nagi, 2004; Lundin et al., 2006), and more than three months around 21% to 62% (Hou et al., 2011; Roe, Sveen, Alvsaker & Bautz-Holter, 2009).

Mild TBI is usually not life threatening. Consequently, patients with mild TBI are treated and released from emergency department without admission, and receive only medication (Faul et al., 2010). However, the admission criteria for mild TBI may be different as shown in Indonesia. According to the guideline of treatment for patients with mild TBI in Indonesia, patients need to be hospitalized for observation in the hospital for three days (Siswanto & Wahyu, 2012). After the short period of hospitalization, mild TBI patients still need monitoring. Therefore, family caregivers carry the primary responsibility to provide care after discharge from hospital. Family can help prevent the development of mild TBI symptoms and/or reduce their duration, number and severity (DVA/DoD, 2009) by symptoms assessment, symptoms management, and follow-up of mild TBI symptom after provided management. As a result, persistent symptoms and complication of mild TBI can be prevented. In reality, family caregivers of mild TBI patients often do not have confidence to provide care after discharge, because they lack adequate knowledge, skill, and competency (Merwe, 2004). Therefore, nurses as a health educators should provide education for them to increase their competency, confidence and performance in caring for mild TBI patients.
Providing education programs have been reported to increase family caregivers’ competencies (Albert, Im, Brenner, Smith & Waxman, 2002). However, the number of studies is limited. In Indonesia, one study was conducted to evaluate the effect of health education for family caregivers with moderate and severe TBI during hospitalization. This study measured knowledge and anxiety. The researcher found that education program helped to increase the family caregivers’ knowledge and reduce anxiety level (Shocker, 2008). Another study from Bandura in 1997 that was conducted in family caregivers with stroke found that providing education based on self-efficacy could increase family caregivers’ competencies (Srijumnong, 2010). Recently, self-efficacy enhancing education program on family caregivers’ competencies with mild TBI in Indonesia has not been found. Therefore, this study is proposed to measure the effect of self-efficacy enhancing education program on family competencies in caring for patients with mild TBI.

**Purpose**

The purpose of this pilot study was to evaluate the feasibility of the self-efficacy enhancing education program on family caregivers’ competencies in caring for patients with mild TBI in Yogyakarta, Indonesia.

**Methods**

**Setting**

This study was conducted at the surgical ward of PKU Muhammadiyah Hospital, Yogyakarta, Indonesia.

**Sample**

Three family caregivers who met inclusion criteria were recruited. The inclusion criteria included: age between 17-70 years old, the family has the primary responsibility in providing care for the patients, the family lives together with the patients, do not have any history of psychiatric disorder and hearing problem, be able to communicate in the Indonesian language both verbally and in writing, and accessibility to telephone contact. The inclusion criteria for patient were person with mild TBI diagnosed by the doctor and age > 17 years old.

**Interventions**

The self-efficacy enhancing education program was conducted by the first author in one month. The program was developed based on four sources of self-efficacy as strategies to enhance family competencies. The program included inactive mastery experience, vicarious experience, verbal persuasion, and physiological state (3). The program consisted of two parts including 1) in hospital, by 1-hour individual education session of exploring the feeling, teaching, watching media, skill demonstration 2) after discharge, which include telephone follow up every week for four times.
Data Collection & instruments
Demographic Data Questionnaire (DDQ). This questionnaire was used to collect family’s demographic data.

Perceived competencies of family caregivers in caring for patient with mild TBI. There are two domains of questionnaire to determine the family caregivers’ competencies in caring for patients with mild TBI. The first questionnaire was the Perceived Confidence Questionnaire (PCQ) and the second one was the Performance questionnaire for family caregivers regarding caring for patients with mild TBI (PQ).

Perceived Confidence Questionnaire (PCQ). This instrument was developed by the researcher. It was used to measure the family caregivers’ confidence regarding care for patients with mild TBI. This questionnaire included family performance to assess warning signs and symptoms following mild TBI that occurred in patients, management of warning signs and symptoms following mild TBI, and evaluation of symptoms. It consisted of 20 items and used 5 items Likert scale that was scored from 1 to 4; no confidence = 1, low confidence = 2, moderate confidence = 3, and high confidence = 4. The total perceived confidence score ranged from 23 to 92. Higher score implied higher level of perceived confidence of family caregivers.

Performance questionnaire family caregiver regarding caring for patients with mild TBI (PQ). This instrument was developed by the researcher. It was used to measure the family caregivers’ performance regarding care for patient with mild TBI. This questionnaire included family performance to assess warning signs and symptoms following mild TBI that occurred in patients, management of warning signs and symptoms following mild TBI, and evaluation of symptoms. It used 5-point Likert scale that was scored from 1 to 5; never = 1, rarely= 2, sometimes = 3, often = 4, and regular = 5. The performance of symptoms management consisted of twenty one statements. The total performance score ranged from 19 to 95. The higher score of performance regarding care for patients with mild TBI indicated high family caregivers’ performance.

Ethical consideration
This study was conducted with the intention of protecting the human rights of all family caregivers. The researcher asked for approval from the Institutional Review Board (IRB) of the Faculty of Nursing, Prince of Songkla University, Thailand. All of the family caregivers gave the written or verbal informed consent. The identity of all family caregivers was coded and the researcher destroyed all of data collected after completion of the data analysis.
Results

Demographic characteristics of family caregivers

Generally, family caregivers were different in some characteristics including age, gender, marital status, and relationship with mild TBI patients (Table 1).

Table 1
Demographic characteristic of family caregivers (N = 3)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Subject 1</th>
<th>Subject 2</th>
<th>Subject 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>29</td>
<td>43</td>
<td>24</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Female</td>
<td>Female</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>Married</td>
<td>Married</td>
</tr>
<tr>
<td>Religion</td>
<td>Muslim</td>
<td>Muslim</td>
<td>Muslim</td>
</tr>
<tr>
<td>Occupation</td>
<td>Private employer</td>
<td>Private employer</td>
<td>Private employer</td>
</tr>
<tr>
<td>Education Level</td>
<td>Senior high school</td>
<td>Senior high school</td>
<td>Senior high school</td>
</tr>
<tr>
<td>Relationship</td>
<td>Brother</td>
<td>Mother</td>
<td>Wife</td>
</tr>
</tbody>
</table>

Family caregivers’ competencies in caring for patients with mild TBI

Family caregivers’ competencies consisted of two domains. There are family caregivers’ perceived confidence and family caregivers’ performance.

Pre-test and post-test family caregivers’ perceived confidence in caring for patients with mild TBI

Based on Table 2, all of subjects had improved perceived confidence in caring for mild TBI patients after receiving self-efficacy enhancing education program. Both of subject No. I and No. III had the same level of perceived confidence before and after receiving the program, but their scores were increased. The result showed that the highest pre-test score was found in subject III (78) and the lowest score was found in subject I (59). In addition, the range of perceived confidence was in moderate to high level. The post-test score showed that two subjects had high score. The highest of perceived confidence was subject III (92). The subject II and III had high level of perceived confidence (Table 2).
Table 2
Pre-test and post-test family caregivers’ competencies (perceived confidence) in caring for patients with mild TBI

<table>
<thead>
<tr>
<th>No</th>
<th>Subjects</th>
<th>Pre-test Score</th>
<th>Level</th>
<th>Post-test Score</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Subject I</td>
<td>62</td>
<td>Moderate</td>
<td>70</td>
<td>Moderate</td>
</tr>
<tr>
<td>2</td>
<td>Subject II</td>
<td>59</td>
<td>Moderate</td>
<td>82</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>Subject III</td>
<td>78</td>
<td>High</td>
<td>92</td>
<td>High</td>
</tr>
</tbody>
</table>

Family caregivers’ performance in caring for patients with mild TBI in the first and fourth week after discharge

Table 3 showed that all of family caregivers had high performance in the first week and the fourth week after discharge from the hospital (Table 3).

Table 3
Comparison of family caregivers’ competencies (performance) in caring for patients with mild TBI in the first and fourth week after discharge

<table>
<thead>
<tr>
<th>No</th>
<th>Subjects</th>
<th>First Week</th>
<th>Level</th>
<th>Fourth Week</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Subject 1</td>
<td>95</td>
<td>High</td>
<td>95</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>Subject 2</td>
<td>95</td>
<td>High</td>
<td>95</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>Subject 3</td>
<td>95</td>
<td>High</td>
<td>95</td>
<td>High</td>
</tr>
</tbody>
</table>

Discussion

According to Bandura (Bandura, 1997), self-efficacy is one’s self-judgement of personal capabilities to initiate and successfully perform a specified task at designated level, one expends greater effort, and perseveres in the face of adversity. Self-efficacy enhancing education program was conducted in one month based on four sources of self-efficacy. The program used in this study involved exploring feeling, providing education by teaching, showing pictures, demonstration and re-demonstration of some skills.

Based on the result of this pilot study, family caregivers’ competencies in caring for patients with mild TBI were increased after receiving self-efficacy enhancing education program. Similar with the previous study, education program could increase family caregivers’ competency on caring patient with mild to severe TBI (Albert et al., 2002). Another study was providing education for family caregivers with stroke by self-efficacy promotion based on self-efficacy from Bandura (1997). The result showed significant increase of family caregivers’ competencies including perceived self-efficacy and outcome expectation (Srijumnong, 2010).
In this study, the researcher provided booklet to help family caregivers easy to understand. These processes were conducted based on Bandura’s self-efficacy (1997). According to the previous study, the researchers provide booklet/pamphlet to family caregivers to make family caregivers understand easily (Rivera, Elliot, Berry & Grant, 2008).

Moreover, the researcher conducted follow up telephone calls after discharge for four times in one month. Follow-up using phone call for three times was involved in this study. The researcher evaluated the family caregivers’ progress report. The researcher also asked family caregivers about concern and worries during providing care, discussed any factors/barriers and provided information to solve these barriers. Additionally, the researcher provided reinforcement and support. Therefore, follow-up is one important factor to monitor and help family caregivers after providing program. Some studies showed that education program following follow-up provided significant effect on family caregivers’ competencies (Albert et al., 2002; Srijumnong, 2010).

However, this study had some limitations. The generalization of the result from this study may be limited because the number of sample size of family caregivers was limited. Follow-up call could cause bias in the study’s results.

**Conclusion**

In conclusion, this study was conducted to evaluate the effect of self-efficacy enhancing education program on family caregivers in caring for patients with mild TBI. The result showed that self-efficacy enhancing education program had positive on family caregivers’ competencies.

**Implications**

This study gives evidence that self-efficacy enhancing education program may increase competencies of family caregivers in caring for patients with mild TBI. This program may be considered by nurses in providing care to family caregivers to enhance their competencies in caring for mild TBI patients. It may increase quality of care for mild TBI patients. Further study with larger sample size is needed to enhance family caregiver’s competencies.
References


