



## Efficacy of an empowerment program for Taiwanese patients with type 2 diabetes: A randomized controlled trial



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### ABSTRACT

**Aim:** To examine the efficacy of an empowerment program on glycosylated hemoglobin, self-care behaviors, self-efficacy, and quality of life in Taiwanese patients with type 2 diabetes.

**Background:** Although empowerment interventions have proven beneficial in western populations, they are rarely applied in Taiwanese populations.

**Methods:** A randomized controlled trial was conducted. The experimental group ( $n = 33$ ) participated in a 3-month empowerment program for motivating patient self-awareness, assessing the causes of problems, goal setting, individual self-care plan development, and checking whether the goal is reached (MAGIC). The control group ( $n = 32$ ) received routine clinical care.

**Results:** The experimental group had significantly decreased glycosylated hemoglobin at 3 months after the end of the intervention and significantly improved self-care behaviors, self-efficacy, and quality of life at the end of the intervention and at 3 months after the end of the intervention.

**Conclusions:** An empowerment program effectively improves diabetes control in Taiwanese patients with type 2 diabetes.

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### 1. Introduction

The high prevalence, high mortality and huge medical costs of type 2 diabetes are now urgent health problems in many countries. Annually, diabetes affects more than 347 million people worldwide and causes almost 3 million deaths (World Health Organization, 2013). In Taiwan, a recent study showed that 9.2% of the population has been diagnosed with diabetes and that diabetes has become the fifth leading cause of death (Taiwan National Department of Health, 2013). Diabetes accounts for 11.5% of overall health care spending. Of the total amount spent for treating diabetes, three-fourths is spent on treating diabetes-related

complications (Taiwanese Association of Diabetes Educators, 2006). To reduce the impact of diabetes in Taiwan, developing appropriate diabetes care programs is essential.

Traditional diabetes education focuses on patient compliance with the recommendations of healthcare professionals. The "compliance" strategy makes patients feel powerless towards their diabetes control (Anderson & Funnell, 2010). The empowerment strategy applies a participatory process that enables individuals to achieve a sense of control over their lives (Herbert, Gagnon, Rennick, & O'loughlin, 2009) and reduces feelings of powerlessness (Falk-Rafael, 2001). According to the World Health Organization (2006), empowerment is an appropriate strategy for people with diabetes.

Empowerment can be considered a process or an outcome. As a process, empowerment enables people to choose to take control over and make decisions about their lives (Chen, Wang, Chin, Chen, & Chen, 2011; Falk-Rafael, 2001). Diabetes empowerment refers to actions provided by healthcare professionals to assist people with diabetes in taking control of their lives (Anderson & Funnell, 2010). Diabetes empowerment processes can include awareness, action and reflection phases (Chen et al., 2011a; Chen, Wang, & Tang, 2011). Awareness raising is the initial phase of empowering patients (Falk-Rafael, 2001). Healthcare professionals should help patients recognize their rights and capabilities to make decisions that affect their own health (Chen

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et al., 2011a; Chen et al., 2011b; Falk-Rafael, 2001). Patients who recognize that they can make decisions are likely to take responsibility for their diabetes care. In the action phase, mutual participation, open communication, and providing necessary information are emphasized (Chen et al., 2011a; Chen et al., 2011b). Mutual participation emphasizes that healthcare professionals act as ‘facilitators’ who encourage patients actively to participate in their diabetes control, such as addressing questions, setting goals, and making decisions (Anderson & Funnell, 2010; Chen et al., 2011a; Chen et al., 2011b). Open communication is essential for building equal partnerships between healthcare professionals and patients. In an equal partnership, patients feel free to share their experiences and opinions with their healthcare professionals (Anderson & Funnell, 2010). Healthcare professionals should also provide the information that patients need to integrate new knowledge and skills in coping with diabetes (Chen et al., 2011a; Chen et al., 2011b). Mutually evaluating the goal between healthcare professionals and patients can help patients modify actions and goals; therefore, reflection is necessary at the end of the empowerment process (Falk-Rafael, 2001).

An empowered person is expected to demonstrate positive behavioral, physical and psychosocial outcomes (Anderson & Funnell, 2010). A widely used indicator of the outcome of diabetes control is HbA1c levels since low HbA1c level reduces the risk of diabetes-related mortality and complications (UK Prospective Diabetes Study Group, 1998). HbA1c is a key physical indicator of diabetes control (Mulcahy et al., 2003). Quality of life (QOL), an intangible, subjective perception of total life experiences (Plummer & Molzahn, 2009), is considered a psychosocial outcome of diabetes control (Mulcahy et al., 2003). Patients with type 2 diabetes are expected to perform good self-care behaviors because self-care behaviors are significantly associated with HbA1c level (Yu et al., 2013). Self-efficacy is defined as the perceived self-confidence to plan and take actions (Bandura, 1997). Traditionally, self-efficacy is considered a psychosocial outcome of empowerment (Yu et al., 2013). Self-efficacy is positively associated with self-care behaviors and QOL in patients with type 2 diabetes (Liu, Tai, Hung, Hsieh, & Wang, 2010). Therefore, when empowering patients with diabetes, HbA1c, self-care behaviors, self-efficacy, and QOL can be considered important outcomes.

Previous studies have shown that empowerment programs effectively improve HbA1c (Pibernik-Okanovic, Prasek, Poljicanin-Filipovic, Pavlic-Renar, & Metelko, 2004), self-care behaviors (Kuo, Tsay, & Yang, 2002), self-efficacy (Kuo et al., 2002), and QOL (Lowe, Linjawi, Mensch,

James, & Attia, 2008) in people with type 2 diabetes. Nevertheless, most empowerment interventions tend to focus on assessing the effectiveness on specific outcomes. An effective diabetes care program should comprehensively target behavioral, physical and psychosocial outcomes (Mulcahy et al., 2003).

An empowered patient needs a healthcare provider who is receptive to the patient sharing in decision making (Anderson & Funnell, 2010). However, in the patriarchal society of Taiwan, patients tend to obey the instructions of healthcare professionals and are generally less empowered than patients in other countries. Therefore, when Taiwanese patients have difficulty implementing the lifestyle changes or dietary changes recommended by healthcare professionals, they tend to blame themselves rather than collaboratively seeking a solution in their daily life. Patients may feel powerless and begin to play a passive role in their diabetes care. Powerlessness has been reported in patients with diabetes in Taiwan (Liu et al., 2010). Furthermore, only 34.5% of patients with type 2 diabetes had HbA1c less than 7% in Taiwan (Yu et al., 2013). An effective empowerment program would encourage Taiwanese patients with type 2 diabetes to be proactive in their diabetes control. Since the effect of empowerment may differ across populations (Yip, 2004), examining the effectiveness of an empowerment program specifically in Taiwanese patients with type 2 diabetes is crucial. The purpose of this study was to evaluate the efficacy of the empowerment program on HbA1c, self-care behaviors, self-efficacy, and QOL in patients with type 2 diabetes in Taiwan. The primary outcome is the outcome of greatest importance. Data on secondary outcomes are used to evaluate additional effects of the intervention (Outcome, 2014). Since HbA1c is the most important indicator that may be directly associated with complications, HbA1c was considered the primary outcome. Self-care behaviors, self-efficacy and QOL were considered secondary outcomes in this study. Fig. 1 shows the framework of the empowerment intervention.

2. Methods

2.1. Design

This randomized controlled trial was performed from May, 2010 to February, 2011. Participants were randomly assigned to either experimental or control groups. A systematic review indicated that most empowerment interventions last at least 6 weeks (Chen et al., 2011b). Therefore, the experimental group received a 3-month empowerment

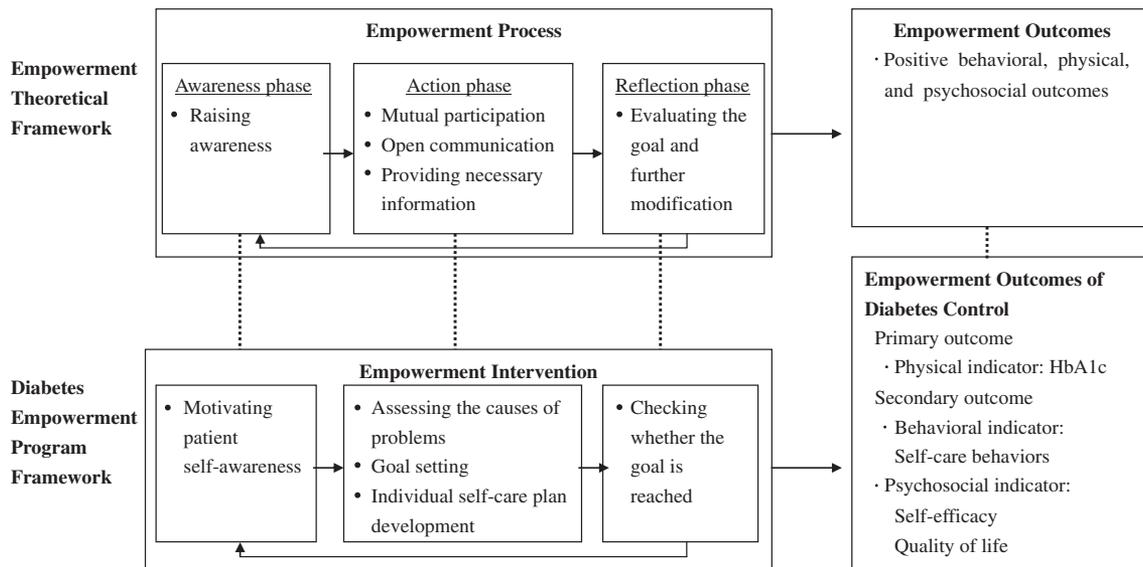


Fig. 1. Empowerment theoretical framework and diabetes empowerment program framework.

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