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Social support, self-efficacy and psychological stress responses among outpatients with diabetes in Yogyakarta, Indonesia

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ABSTRACT

We attempted to study whether social support promotes self-efficacy and reduces stress responses of patients with diabetes in Yogyakarta, Indonesia. Diabetic outpatients at Dr. Sardjito Hospital voluntarily participated in a questionnaire survey. Data from 125 patients were subjected to analysis. The questionnaires included the scales and subscales of social support, self-efficacy, psychological stress response, and demographic measure. Data were analyzed by Spearman's rank correlation test to examine the relationships between parameters, Mann–Whitney *U*-test and Kruskal–Wallis test to compare the scales by characteristics, and structural equation modeling to explore the best-fit model. This study was performed in September 2003. It was found that augmentation of emotional support to patients significantly increased the 'active coping for the disease' and 'controllability of health', and that 'helplessness' was reduced significantly. Behavioral support affected only 'controllably of health'. Self-efficacy reduced stress response of the patients. It was also found that subjects who received support from their children significantly scored higher in perceived availability of social support than those without support from their children. To know their behavioral support better as well as emotional support may be one area to focus on in improving the health status of people with diabetes in Yogyakarta.

1. Introduction

The prevalence of diabetes is rapidly increasing in Southeast Asia due to an increase in the occurrence of obesity, urbanization and change of life styles [1–3]. Diabetes especially is at the forefront of the current epidemic in Indonesia. Based on projections, the population with type 2 diabetes will be over 20 million by 2030 [4]. The study by Chuang et al. [5] found that the glucose levels were not well-controlled in over half of the diabetic patients even in the diabetes centers in some Asian countries including Indonesia. The endocrinology society of Indonesia has drawn up guidelines on the management of

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type 2 diabetes in which education, diet and exercise are emphasized [6]. These guidelines have been based on those of Western countries, and the influence of socio-cultural and religious background was hardly considered in the management of diabetes. Furthermore, Indonesia, consisting of numerous distinct ethnic, linguistic and religious groups across numerous islands, that have not always been united. However, its national language, and a Muslim majority population have helped to define Indonesia as a state and nation. A big challenge for health professionals is to develop health programs that are adapted to large polyglot Asian country in order to improve the health condition of diabetic patients and to prevent life-threatening diabetes-related complications.

Along these lines, we studied the relationship among social support, self-efficacy and psychological stress responses of patients with diabetes in order to improve management in Yogyakarta, Indonesia which is one of the large cities in Java Island and with Islam religion [7]. Social support is considered as an external resource to reduce stress [8–11]. Self-efficacy, which is defined as people's perceptions of their capabilities for performance, is considered as an internal predictor of adherence to dietary treatments [12–16]. In this study, we explored the relationship of social support, self-efficacy and stress responses in Yogyakarta, Indonesia.

2. Subjects and methods

2.1. *Subjects*

Diabetic patients who were over 40 years of age consulting at the outpatient unit of the Dr. Sardjito Hospital in Yogyakarta, Indonesia were recruited to this study in September 2003. Diabetes was diagnosed according to the criteria of World Health Organization (WHO), i.e., having a fasting blood glucose level $\geq$126 mg/dl or a postprandial blood glucose level $\geq$200 mg/dl. Two hundred four patients participated in the study. The questionnaires were administered to assess social support, self-efficacy and psychological stress responses of the subjects. A written informed consent was obtained from each subject.

2.2. *Questionnaires*

The original questionnaires were developed in Japan, and were translated to English and then to Indonesian, and a reverse translation from Indonesian to Japanese was done, and all these versions revealed no substantial differences among each other. The questionnaire on social support, as developed by Kim et al. in Japan, measured the dimension of social support for patients with chronic diseases (Box 1). This scale has two subscales [17]. One is 'emotional support', for example, 'You have someone who encourages you', and the other is 'behavioral support', for example, 'You have someone who asks about your condition when you wake up in the morning'. Support satisfaction was rated on a scale ranging from 1 (very dissatisfied) to 5 (very satisfied). High scores reflected a highly perceived availability of social support.

Box 1. The subscales and examples of social support, self-efficacy and stress responses

(1) Scale of social support for chronic diseases
- Factor 1: Emotional support in daily life (12 items)
  - Ex. You have someone who encourages you
    You have someone who understands you
    You have someone whom you can talk to about your disease
- Factor 2: Behavioral support for disease (8 items)
  - Ex. You have someone who goes to the hospital with you and waits for you
    You have a doctor you can contact immediately and consult about your condition in the event of troubles'
    You have at least one meal a day with your family

(2) Self-efficacy for motivation
- Factor 1: Active coping for the disease (10 items)
  - Ex. You can take care of yourself
    You can follow instructions given by the doctors or nurses
    You can take medicines as instructed
- Factor 2: Controllability of health (14 items)
  - Ex. You can overcome your condition by your spiritual strength
    You can control your emotions
    You can view yourself objectively

(3) Stress Response Scale-18 (SRS-18)
- Factor 1: Depression, anxiety (6 items)
  - Ex. You feel you want to cry
    You feel sad
    You feel anxious
- Factor 2: Irritability, anger (6 items)
  - Ex. You feel irritated
    You feel angry
    You cannot control your emotion
- Factor 3: Helplessness (6 items)
  - Ex. You feel you are not able to do anything
    You think that something is wrong
    You feel you want to be alone

Internal consistency as assessed by Cronbach's Alpha was high for the subscales on emotional support (0.88) and on behavioral support (0.83).

The questionnaire on self-efficacy (Box 1) was also developed by Kim et al. [18]. This consists of two factors, one is the 'active coping for the disease', for example, 'You can take medicines as instructed', and the other is the 'controllability for health', for example, 'You can control your emotions'. Participants rated each item in the questionnaire according to their perceived capability to perform the task using a scale ranging from 1 (strongly disagree) to 4 (strongly agree). A high score reflected a highly perceived ability to perform the task favorable for diabetes management. Internal consistency as assessed by Cronbach's Alpha was high for the 'active coping for the disease' (0.83) and 'controllability of health' (0.87).

Stress response scale 18 (SRS-18) by Suzuki et al. [19] and Simada et al. [20] was used for the measurement of the perceived stress responses with three factors, 'depression, anxiety', 'irritability, anger' and 'helplessness' (Box 1). The stress responses were rated on a scale ranging from 1 (not