

This is a **Sample** version of the
**Diabetes Empowerment Scale
(DES)**

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The Diabetes Empowerment Scale

A measure of psychosocial self-efficacy

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OBJECTIVE — The purpose of this study was to assess the validity, reliability, and utility of the Diabetes Empowerment Scale (DES), which is a measure of diabetes-related psychosocial self-efficacy.

RESEARCH DESIGN AND METHODS — In this study ($n = 375$), the psychometric properties of the DES were calculated. To establish validity, DES subscales were compared with 2 previously validated subscales of the Diabetes Care Profile (DCP). Factor and item analyses were conducted to develop subscales that were coherent, meaningful, and had an acceptable coefficient α .

RESULTS — The psychometric analyses resulted in a 28-item DES ($\alpha = 0.96$) with 3 subscales: Managing the Psychosocial Aspects of Diabetes ($\alpha = 0.93$), Assessing Dissatisfaction and Readiness To Change ($\alpha = 0.81$), and Setting and Achieving Diabetes Goals ($\alpha = 0.91$). Consistent correlations in the expected direction between DES subscales and DCP subscales provided evidence of concurrent validity.

CONCLUSIONS — This study provides preliminary evidence that the DES is a valid and reliable measure of diabetes-related psychosocial self-efficacy. The DES should be a useful outcome measure for various educational and psychosocial interventions related to diabetes.

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Patients with diabetes must make a series of daily decisions involving nutrition, physical activity, medication, blood glucose monitoring, and stress management. Patients must also interact effectively with the health care system, their family members, friends, and employers to obtain the support necessary to manage their diabetes (1). Thus, enhancing the perceived self-efficacy of patients to self-manage their diabetes is an important goal of diabetes care and education.

Perceived self-efficacy has become an important and useful construct in psychology (2–4) because it is related to the willingness and the ability of people to engage in

various behavioral challenges including preventive and disease management behaviors (5–15). Studies in diabetes have demonstrated the effect of perceived self-efficacy on the adherence behavior of adolescents (16,17), African-American women with diabetes (18), adults with complex insulin regimens (18,19), and adults with type 1 or type 2 diabetes (20–22). However, in these studies, self-efficacy has been defined primarily as the perceived ability to engage in various situation-specific self-management tasks such as blood glucose monitoring and ordering meals in a restaurant, or the studies have focused on the needs of particular group of patients (e.g., adolescents).

In 1991, we conducted a randomized controlled trial to evaluate the effectiveness of a patient empowerment program for adults that focused entirely on psychosocial issues such as managing stress, obtaining family support, negotiating with health care professionals and employers, and dealing with uncomfortable emotions (23). Because we were unable to identify a measure of diabetes-related self-efficacy for adults that focused on these important psychosocial areas, we developed the Diabetes Empowerment Scale (DES), which is a 37-item Likert-type questionnaire (24), and we used it in that study. The study showed that the program resulted in both psychosocial and blood glucose level improvements.

RESEARCH DESIGN AND METHODS

Instrument development

The pilot version of the DES had 8 subscales that were keyed to the major content areas of the patient empowerment and education program (23,24). The structure of the DES and the patient empowerment program were based on our earlier work in patient empowerment (25–27). In an earlier study (25), we defined the purpose of the empowerment approach to diabetes education as helping patients make informed choices about their diabetes self-management. In that study, we offered a 4-step behavior change model: 1) patient identification of problem areas, 2) exploration of the emotions associated with those problems, 3) development of a set of goals and strategies to overcome the barriers to achieving those goals, and 4) determining patients' motivation to make a commitment to the behavior change plan. That approach to facilitating behavior change in diabetic patients was adapted from earlier work in counseling psychology (28–31). Most of the patient empowerment program and DES subscales were derived from that behavior change model. The remaining 2 subscales (Managing Stress and Obtaining Psychosocial Support) were added to the patient empowerment program and the DES because these areas have been identified as major barriers and/or facilitators (see the third step above) of

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Abbreviations: DCP, Diabetes Care Profile; DES, Diabetes Empowerment Scale.

A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.

**This is the end of the SAMPLE DES clinical validity.
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Diabetes Empowerment Scale (DES and DES-SF)

In 2000 we developed the Diabetes Empowerment Scale (DES) to measure the psychosocial self-efficacy of people with diabetes. The original questionnaire contained 37 items representing 8 conceptual dimensions (i.e. assessing the need for change; developing a plan; overcoming barriers; asking for support; supporting oneself; coping with emotion; motivating oneself; and making diabetes care choices appropriate for one's priorities and circumstances). Using factor analyses the questionnaire was reduced to the current 28-item DES $\alpha = 0.96$ containing three subscales. (1) The three subscales are: 1) managing the psychosocial aspects of diabetes with 9 items, $\alpha = 0.93$; 2) assessing dissatisfaction and readiness to change with 9 items $\alpha = 0.81$; and 3) setting and achieving goals with 10 items, $\alpha = 0.91$. In addition to providing an overall assessment of diabetes related psychosocial self-efficacy the three subscales of the DES allow for an examination of its underlying components.

In order to allow for a brief overall assessment of diabetes related psychosocial self-efficacy, we developed an eight item short form of the DES (the DES-SF). The DES-SF was created by choosing the item from the (remaining 28 items appeared in the published article but it is an error. It should say the original 37 items. This is a typographical error (ours) but it does not affect any of the psychometric data found in this article) items with highest item to subscale correlation from each of the original eight conceptual domains. The reliability of the DES-SF using the original data set was $\alpha = 0.85$. We have subsequently administered the DES-SF to 229 subjects in a new study. The reliability of the DES-SF using the data from the new sample was $\alpha = 0.84$. The content validity of the DES-SF was supported in the new study by the fact that both DES-SF scores and HbA1c levels changed in a positive direction after the 229 subjects completed a six-week problem based patient education program (2). The change in DES-SF scores and HbA1c levels were not correlated suggesting that these two measures vary independently. These data provide preliminary evidence that the DES-SF is a valid and reliable measure of overall diabetes-related psychosocial self-efficacy.

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Diabetes Empowerment Scale (DES)

Scoring Key

The DES measures the patient's self efficacy related to:

Subscales & Items

- | | | |
|-----|-------------------------------------------------------------|-------------------------|
| I. | Managing the psychosocial aspects of diabetes (9 items) | (18,20–27) |
| II. | Assessing dissatisfaction and readiness to change (9 items) | (1-4,15-17, 19, and 28) |

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DIABETES ATTITUDE QUESTIONNAIRE

PLEASE ANSWER THE FOLLOWING QUESTIONS

BACKGROUND:

1. Sex: Male Female
2. How old are you? _____ years old
3. How long ago were you told by a doctor that you had diabetes? _____ years
4. Which type of diabetes did your doctor say that you have?
 - insulin-dependent diabetes, also called juvenile or type 1 diabetes
 - non insulin-dependent diabetes, also called adult onset or type 2 diabetes (some people with non insulin-dependent diabetes take insulin)
5. How often does your diabetes prevent you from doing your normal daily activities (could not work or go to school)? Circle one number.

Never							Frequently
1	2	3	4	5	6	7	
6. Have you ever attended a diabetes patient education program (a series of classes)?
 - No Yes (If "Yes", how many years ago? _____)
7. How would you rate your understanding of diabetes and its treatment? Circle one number.

Poor							Excellent
1	2	3	4	5	6	7	

**This is the end of the SAMPLE DES questionnaire.
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