STANDARD DEVIATION

STATISTICAL TECHNIQUE IN REVIEW

The mean () is a measure of central tendency for a set of data and is the arithmetic average calculated for the data. (Please refer to Exercise 15 for further information about the mean). The **standard deviation** (*SD)* is a measure of dispersion and is the average amount of points by which the scores of a distribution vary from the mean. When the scores of a distribution deviate from the mean considerably, the *SD* or spread of scores is large. When the degree of deviation of scores from the mean is small, the *SD* or spread of the scores is small. Both the  and *SD* are descriptive statistics calculated to describe study variables (Burns & Grove, 2007).

RESEARCH ARTICLE

**Source:** Tsay, S. L., & Hung, L. O. (2004). Empowerment of patients with end-stage renal disease: A randomized controlled trial. *International Journal of Nursing Studies, 41* (1), 59–65.

Introduction

Tsay and Hung (2004) conducted a randomized controlled trial examining the effectiveness of an empowerment program on empowerment level, self-care self-efficacy, and depression in patients with end-stage renal disease (ESRD). The researchers used the Empowerment Scale, the Strategies Used by People to Promote Health Tool, and the Beck Depression Inventory to collect data from the patients on their level of empowerment, self-care self-efficacy, and depression, respectively. The scales were administered to both the control (*n* = 25) and the experimental (*n* = 25) groups at baseline and 6 weeks after the program was completed. The control group, experimental group, and total sample's empowerment, self-care self-efficacy, and depression baseline and posttest means and standard deviations are presented in Table 2 on p. 118.

Relevant Study Results

“The sample consisted of 50 hemodialysis patients. … Mean perceived renal disease severity was moderately severe (mean = 6.74, *SD* = 2.97, range = 0–10), and the mean length of dialysis was 52.56 months (*SD* = 36.51). There were no differences in clinical and demographic characteristics of the patients between the groups (*p* <0.05). The data indicates homogeneity of subjects across the groups” (Tsay & Hung, 2004, p. 61). “This study found that there were significant differences in improvement of empowerment, self-care self-efficacy, and depression in patients who were in the intervention group using empowerment strategies than with the control group patients. …The results from this study suggest that empowerment techniques might have an important role for patients in self-management of ESRD. … The study provides a foundation for future studies of empowerment interventions for self-managing of ESRD patients” (Tsay & Hung, 2004, pp. 63–4).

