USING ORDINAL LOGISTIC REGRESSION WITH PROPORTIONAL ODDS TO ANALYZE HEALTH CARE DATA WHERE THE OUTCOME VARIABLE CAN BE ORDERED

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ABSTRACT

The aim of this study was to determine how satisfied patients were with their primary care professionals' services based on a Likert scale (1 to 4 with 1 = very dissatisfied and 4 = very satisfied). People in the sample were characterized by site of care (Clinic A = 1 and clinic B = 0), gender (1= females, 0=males), socioeconomic status (0 = Low class, 1 = middle class, 2 = Upper class), and age. In this study, 384 patients (204 females, 180 males) were available for investigating the association between their ratings of professional health care services and the factors of gender, clinical location, socioeconomic status and age as a covariate. Patients ranged from 23 to 68 years of age, with a mean age of 38.23 (SD +/- 8.52) and a median age of 37.00 years. A cumulative odds ordinal logistic regression with proportional odds was run to determine the effect of these predictors on patients' satisfaction with health care services at these clinics. Power analysis for a multiple regression with four predictors was conducted in G-POWER to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size (f = 0.15). IBM Statistical Package for the Social Sciences (SPSS) software version 24 and G-POWER 3.0.10 were used to analyze the data.

Keywords: primary care services, ordinal logistic regression, professional health care services, patients' satisfaction with health care services.

INTRODUCTION

Patient satisfaction is a frequently occurring topic in the literature of clinical health care, and medical education. Interest in the study of customer satisfaction in general has persisted since the beginning of the twentieth century. Despite all the work that has been done in this area, researchers are still unclear what they really mean by patient satisfaction and how to measure it precisely. The debate consists of two points: the definition of what satisfaction actually consists of and how to measure it properly. Smith (2018) noted that patient satisfaction has an important role in hospital and clinic operations- from repeat visits and compensation to adherence and quality of care-yet the validity of some survey measurements is open to question. Smith also noted that safety-net hospitals tend to score lower on patient satisfaction than hospitals that provide less care to underserved populations. So low satisfaction scores could cause physicians to avoid caring for more challenging patients, such as poorer people and persons with mental illness. The American Medical Association code of Medical Ethics, Opinion 1.1.6 on Quality, states that physicians should share the obligation to ensure that the care patients receive is safe, effective, patient centered, timely, efficient, and equitable. Although most of the customer/patient satisfaction literature deals with the area of industrial management, there is a growing need for understanding its effects in the health care industry. Chue 2006; Glickma. et al. 2010 contended that results from patient satisfaction surveys can make positive change and quality improvement (QI) initiatives in health-care delivery that are responsive to patient needs. Evidence based data can potentially bring benefits of high patient satisfaction; satisfied patients can have higher treatment adherence and may improve the overall health outcomes. Priority Metrics Group (PMG 2017) contended that approaches to patient satisfaction surveys are wasting time and effort. In general, a chronic level of weakness prevails in typical patient satisfaction surveys due to the following factors: limited or no statistical validity, use of only experiential attributes, poorly communicated results, absence of comparative benchmarks, and low importance placed on analysis.