Predictors of Nurse Adoption of a Computerized Information System as an Innovation

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This descriptive study focused on factors that influence the diffusion and adoption of an innovation after it is first introduced to members of a social system. The purposes of the study were 1) to explore a set of individual, technological, and organizational characteristics as predictors of hospital nurse adoption of a computerized information system (CIS) as an innovation, and 2) to investigate the effect of organizational position on innovation adoption. A computerized nursing information system for staffing, scheduling and productivity management was selected as the innovation.

INTRODUCTION

Computerized information systems are innovations used to support the management of clinical and administrative information. The exploration of factors that facilitate the adoption of innovations is needed so as to promote organizational and individual effectiveness in attempts to enhance quality and reduce costs. A review of the literature suggests that individual, technological, and organizational characteristics affect the diffusion and adoption of innovations. Prior studies, however, have not fully addressed a CIS as the innovation with nurses as the adoptors. In addition, the effect of organizational position has not been adequately explored.
[1,2].

METHODS / RESULTS

The sample included 193 staff nurses and 34 nurse managers in one large teaching research hospital. Instrumentation included use of the End User Computing Satisfaction Scale to measure adoption, the Index of Values Favorable Toward Change, the Distribution of Influence on Practice Scale and a questionnaire developed for this study. A self-report written survey method was used to test a set of 12 independent variables in relation to innovation adoption. Using multiple regression analysis, 43% of the variance in adoption was explained by 3 technology variable, 34% by 4 organizational variables, and 52% by all 12 predictors ($p < .0000$). A significantly lower level of adoption was found for managers compared to non-managers when either supervisor values ($F = 9.42$, $p < .05$), need ($F = 4.56$, $p < .05$), or peer values ($F= 4.68$, $p < .05$) was controlled (df = 1.65).

The results suggest that focus on the perceived advantages of an innovation, the perceived need, values held by peers regarding the innovation and use of communication mechanisms facilitate nurse adoption of a computerized information system as an innovation. A revised theoretical model for the study of innovation adoption was proposed based on the data analysis. The model asserts that a relationship exists among the categories of predictor variables and negates the hypothesized direct influence of adopter characteristics on adoption behavior. Implications for nursing include the need to focus strategies for planning, development and implementation of innovations on maximizing the significant predictors. Evaluation of the information management component of current nursing roles is also suggested.

REFERENCES

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