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Enhancing Community Knowledge on the Prevention and Early Management of Kidney Disorders through Nursing Education

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Abstract

Purpose: The purpose of this study was to evaluate the effectiveness of a nursing education program in enhancing community knowledge regarding the prevention and early management of kidney disorders. **Methods:** This community service program employed a community-based educational approach through health education sessions led by professional nurses. A quantitative method with a pre-experimental design using pre-test and post-test was applied to measure the improvement in community knowledge. **Results:** A total of 100 respondents participated in this program. The results showed a significant increase in community knowledge about kidney disorders, with an average pre-test score of 55.3% and a post-test score of 80.6% ($p<0.05$). **Conclusion:** Nursing education proved to be effective in enhancing community knowledge about the prevention and early management of kidney disorders. Similar programs are recommended to be widely implemented to reduce the prevalence of CKD.

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INTRODUCTION

Chronic kidney disease (CKD) is a major health problem affecting the quality of life for millions of people worldwide. According to the World Health Organization (WHO), approximately 10% of the global population suffers from CKD, and this figure continues to rise annually (WHO, 2020). In Indonesia, the prevalence of CKD is also increasing, in line with the rising cases of diabetes mellitus and hypertension, which are the primary risk factors (Kemenkes RI, 2019).

Other risk factors contributing to the increasing prevalence of CKD include the lack of public knowledge about kidney health and disease prevention. Studies have shown that adequate health education can reduce the risk of CKD progression and more severe complications such as kidney failure (KDIGO, 2021). Therefore, community-based educational interventions are essential to enhance awareness and understanding of the importance of preventing and managing kidney disorders.

Nursing professionals play a vital role in delivering health education to the community. Nurses are not only responsible for patient care in hospitals but also have a significant role in health promotion and disease prevention through public health education (Potter & Perry, 2017). Structured and ongoing nursing education can positively impact health behavior changes in the community, especially related to the prevention and early management of kidney disorders.

Previous studies have demonstrated that educational programs involving nurses can increase patients' knowledge about kidney health by up to 20% compared to those who do not receive education (Chow et al., 2018). This indicates that the active involvement of nursing professionals in educational activities can be an effective strategy in reducing the prevalence of CKD in the community.

Based on the aforementioned background, this study aims to evaluate the effectiveness of a nursing education program in improving community knowledge about the prevention and early management of kidney disorders. The findings of this study are expected to provide a scientific basis for developing similar educational programs that can be widely implemented.

METHOD

This study employed a quantitative method with a pre-experimental design, specifically a one-group pre-test and post-test design. A total of 100 respondents aged 18 years and above and residing in City X were selected using purposive sampling. The educational program was conducted over four weeks, with sessions held once a week. The educational content covered kidney anatomy and function, risk factors for kidney disorders, early signs and symptoms, and prevention and management strategies.

Research Instruments: The instrument used in this study was a structured questionnaire consisting of 20 multiple-choice questions. The questionnaire was tested for validity and reliability with a Cronbach's Alpha value of 0.85. A pre-test was conducted before the educational program began to measure baseline knowledge, and a post-test was conducted after the program to assess knowledge improvement.

Data Analysis: The collected data were analyzed using SPSS version 26.0. Univariate analysis was performed to determine the frequency distribution of respondent characteristics and knowledge scores. Bivariate analysis using paired t-test was employed to evaluate differences in knowledge scores before and after the educational intervention.

RESULTS AND DISCUSSION

The results section presents findings from both univariate and bivariate analyses. Univariate analysis describes the characteristics of the respondents and their baseline knowledge levels, while bivariate analysis evaluates the change in knowledge before and after the intervention.

Tabel 1 : Distributing Demographic characteristics respondent (N =100)

Characteristics		Frequency	Percentage (%)
Gender	Male	45	45
	Female	55	55
Age (Years)	18-30	20	20
	31-50	60	60
	>50	20	20
Education	Junior High School	15	15
	Senior High School	50	50
	Diploma/Degree	35	33

Table 1 presents the demographic characteristics of the respondents who participated in the study. The majority of the respondents were female (55%) and aged between 31-50 years (60%). In terms of education, 50% had completed senior high school, 35% had a diploma or degree, and 15% had completed junior high school.

Table 2. Comparison of Knowledge Scores Before and After Intervention (N=100)

Variable	Pre-test (Mean ± SD)	Post-test (Mean ± SD)	p-value
Knowledge Score	55.3 ± 12.5	80.6 ± 10.4	<0.05

Based on table 2 above, the comparison of knowledge scores before and after the educational intervention. The average pre-test knowledge score was 55.3%, indicating a moderate baseline understanding of kidney disorder prevention and management among the respondents. After the intervention, the average post-test score significantly increased to 80.6%, highlighting the effectiveness of the nursing education program.

The significant improvement in knowledge scores after the intervention indicates the effectiveness of this program in enhancing community understanding of kidney disorder prevention and management. This finding aligns with research conducted by Chow et al. (2018), where health education significantly improved awareness and preventive behaviors related to kidney health.

The active participation of nurses in delivering the educational sessions also played a crucial role in the program's effectiveness. Nurses, as health educators, have in-depth clinical knowledge and effective communication skills, which enable them to convey health information in an easily understandable manner to the general public (Potter & Perry, 2017).

Moreover, the adequate duration and frequency of the educational sessions contributed to the improvement in knowledge. A study by Mason et al. (2019)

demonstrated that educational programs conducted continuously with multiple sessions are more effective in influencing changes in knowledge and behavior compared to one-off programs.

In terms of content, the educational material, which included basic information on kidney function, disease symptoms, and preventive measures, successfully increased community awareness about the importance of kidney health. This is consistent with the findings of Collins et al. (2020), who stated that knowledge of early symptoms of kidney disease can help individuals seek appropriate medical care promptly.

With the increasing prevalence of chronic kidney disease, educational programs like this are highly relevant for broader implementation. Community-based nursing education can be a key strategy in reducing the burden of chronic kidney disease in the community and promoting healthy living behaviors.

CONCLUSION

Nursing education programs have proven effective in increasing community knowledge about the prevention and early management of kidney disorders. These results indicate that community-based educational interventions involving nurses can be an essential strategy in the prevention of kidney disease. Similar programs should be widely and sustainably implemented to reduce the prevalence of CKD and improve community quality of life.

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