Chelonian Conservation And Biology

Vol. 17No.2 (2022) | https://www.acgpublishing.com/ | ISSN - 1071-8443

DOI:doi.org/10.18011/2022.04(1) 3538-3548

THE RELATIONSHIP BETWEEN NURSE-PATIENT COMMUNICATION AND MEDICATION ADHERENCE IN SAUDI ARABIAN PRIMARY HEALTHCARE CENTERS

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Abstract

Effective nurse-patient communication is crucial for promoting medication adherence, particularly in primary healthcare settings. This study aimed to investigate the relationship between nurse-patient communication and medication adherence among patients in Saudi Arabian primary healthcare centers. A cross-sectional survey was conducted with a sample of 400 patients from eight primary healthcare centers in Riyadh, Saudi Arabia. The Nurse-Patient Communication Scale (NPCS) and the Medication Adherence Questionnaire (MAQ) were used to measure nurse-patient communication and medication adherence, respectively. Descriptive statistics, Pearson's correlation, and multiple linear regression analyses were performed to examine the relationship between nurse-patient communication and medication adherence, while controlling for demographic variables. The results showed a significant positive correlation between nurse-patient communication and medication adherence ($r = 0.679$, $p < 0.001$). Multiple linear regression analysis revealed that nurse-patient communication was a significant predictor of medication adherence ($\beta = 0.638$, $p < 0.001$), after controlling for age, gender, education level, and chronic disease status. The findings highlight the importance of effective nurse-patient communication in promoting medication adherence and suggest that interventions aimed at improving communication skills among primary healthcare nurses may lead to better patient outcomes. Recommendations for practice and future research are discussed.

Keywords: nurse-patient communication, medication adherence, primary healthcare, Saudi Arabia, cross-sectional survey

Introduction

Medication adherence is a critical component of effective disease management, particularly for patients with chronic conditions. Non-adherence to prescribed medications can lead to poor health outcomes, increased healthcare costs, and a higher risk of morbidity and mortality (Brown & Bussell, 2011). In Saudi Arabia, the prevalence of chronic diseases, such as diabetes, hypertension, and cardiovascular diseases, has been increasing rapidly in recent years (Alqurashi

et al., 2011). This trend highlights the need for effective strategies to promote medication adherence among patients in Saudi Arabian healthcare settings.

Nurse-patient communication has been identified as a key factor influencing medication adherence (Zolnierek & Dimatteo, 2009). Effective communication between nurses and patients can help to build trust, foster a therapeutic relationship, and promote patient engagement in their own care (Charlton et al., 2008). In primary healthcare settings, nurses play a crucial role in providing patient education, monitoring treatment progress, and addressing patient concerns related to their medications (Latter et al., 2007).

Despite the importance of nurse-patient communication in promoting medication adherence, limited research has been conducted on this topic in the context of Saudi Arabian primary healthcare centers. Therefore, this study aimed to investigate the relationship between nurse-patient communication and medication adherence among patients in Saudi Arabian primary healthcare centers. The findings of this study can inform the development of interventions to enhance nurse-patient communication and ultimately improve medication adherence and patient outcomes.

Literature Review

Nurse-Patient Communication and Medication Adherence

Several studies have demonstrated the positive impact of effective nurse-patient communication on medication adherence. A systematic review by Zolnierek and Dimatteo (2009) found that patients who experienced better communication with their healthcare providers had a 19% higher rate of medication adherence compared to those who experienced poor communication. Similarly, a study by Schoenthaler et al. (2014) showed that patients who reported better communication with their healthcare providers had higher levels of medication adherence and better blood pressure control.

In the nursing context, a study by Prendergast (2015) found that nurse-led interventions focused on improving communication and patient education significantly improved medication adherence among patients with chronic conditions. Another study by Mrayyan (2012) showed that nurse-patient communication was a significant predictor of medication adherence among patients with hypertension in Jordan, a Middle Eastern country with a similar cultural context to Saudi Arabia.

Factors Influencing Nurse-Patient Communication

Several factors have been identified as influencing the quality of nurse-patient communication in healthcare settings. A study by AlYami et al. (2017) found that workload, time constraints, and language barriers were significant challenges to effective nurse-patient communication in Saudi Arabian hospitals. Similarly, a study by Alotaibi et al. (2016) identified lack of training, cultural

differences, and the hierarchical structure of the healthcare system as barriers to nurse-patient communication in Saudi Arabia.

Other factors that have been found to influence nurse-patient communication include nurse characteristics, such as age, gender, and years of experience (Anoosheh et al., 2009), as well as patient characteristics, such as education level, health literacy, and trust in healthcare providers (Baral et al., 2017). These findings highlight the need for a comprehensive approach to improving nurse-patient communication that takes into account both individual and organizational factors.

Medication Adherence in Saudi Arabia

Medication non-adherence is a significant problem in Saudi Arabia, with studies reporting adherence rates ranging from 32% to 60% for various chronic conditions (Alatawi et al., 2020; Alhaddad et al., 2015). A study by Alqahtani et al. (2019) found that forgetfulness, side effects, and lack of knowledge about the importance of medication were the most common reasons for non-adherence among patients with chronic diseases in Saudi Arabia.

Interventions to Improve Medication Adherence

Several interventions have been developed to improve medication adherence among patients with chronic conditions. A systematic review by Laba et al. (2013) found that interventions such as patient education, medication reminders, and pharmacist-led counseling were effective in improving adherence. Similarly, a study by Alhalaiqa et al. (2018) showed that a nurse-led medication adherence intervention, which included patient education and follow-up phone calls, significantly improved adherence among patients with hypertension in Jordan.

In the context of Saudi Arabia, a study by Almalag et al. (2019) found that a pharmacist-led medication therapy management program significantly improved medication adherence and clinical outcomes among patients with diabetes. However, limited research has been conducted on nurse-led interventions to improve medication adherence in Saudi Arabian primary healthcare settings.

Research Objectives

The main objective of this study was to investigate the relationship between nurse-patient communication and medication adherence among patients in Saudi Arabian primary healthcare centers. Specifically, the study aimed to:

1. Assess the level of nurse-patient communication in Saudi Arabian primary healthcare centers using the Nurse-Patient Communication Scale (NPCS).
2. Examine the level of medication adherence among patients in Saudi Arabian primary healthcare centers using the Medication Adherence Questionnaire (MAQ).

3. Investigate the relationship between nurse-patient communication and medication adherence, while controlling for demographic variables such as age, gender, education level, and chronic disease status.
4. Identify the predictors of medication adherence among nurse-patient communication dimensions.

Methodology

Study Design and Setting

A cross-sectional survey design was employed to collect data from patients attending eight primary healthcare centers in Riyadh, Saudi Arabia. The centers were selected based on their size, location, and willingness to participate in the study.

Sample and Sampling Technique

A convenience sampling technique was used to recruit patients from the participating primary healthcare centers. The inclusion criteria were: (1) adults aged 18 years and above, (2) diagnosed with at least one chronic condition, (3) prescribed at least one long-term medication, and (4) able to communicate in Arabic or English. The exclusion criteria were: (1) patients with cognitive impairment, (2) patients unable to provide informed consent, and (3) patients who had been hospitalized within the past three months.

The sample size was calculated using G*Power software (Faul et al., 2009), with a medium effect size ($f^2 = 0.15$), a power of 0.80, and an alpha level of 0.05 for multiple linear regression analysis. The minimum required sample size was 384. To account for potential non-response and incomplete surveys, a total of 450 patients were invited to participate in the study.

Instruments

1. Nurse-Patient Communication Scale (NPCS): The NPCS is a 23-item instrument that measures nurse-patient communication in four dimensions: empathy, information exchange, interpersonal skills, and nursing tasks (Parsapour et al., 2012). The items are rated on a 5-point Likert scale, ranging from1 (strongly disagree) to 5 (strongly agree). The total score ranges from 23 to 115, with higher scores indicating better nurse-patient communication. The NPCS has demonstrated good reliability and validity in previous studies (Parsapour et al., 2012).
2. Medication Adherence Questionnaire (MAQ): The MAQ is a 4-item instrument that assesses medication adherence (Morisky et al., 1986). The items are answered with a yes/no response, and the total score ranges from 0 to 4, with higher scores indicating better adherence. The MAQ has shown good reliability and validity in various patient populations (Morisky et al., 1986).
3. Demographic Questionnaire: A demographic questionnaire was developed to collect information on participants' age, gender, education level, marital status, employment status, income, and chronic disease status.

Data Collection Procedure

After obtaining ethical approval from the participating primary healthcare centers and the university's institutional review board, the researchers approached eligible patients during their visits to the centers. Patients were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. Written informed consent was obtained from all participants. The survey questionnaires were administered in Arabic or English, depending on the participant's preference, and were completed in approximately 15-20 minutes.

Data Analysis

Data were analyzed using SPSS version 26.0. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize the demographic characteristics and the scores of the NPCS and MAQ. Pearson's correlation coefficient was used to examine the relationship between nurse-patient communication and medication adherence. Multiple linear regression analysis was conducted to identify the predictors of medication adherence among the nurse-patient communication dimensions, while controlling for demographic variables.

Results

Demographic Characteristics

A total of 400 patients completed the survey, yielding a response rate of 88.9%. The majority of the participants were female (58%), with a mean age of 47.5 years (SD = 14.3). Most participants had completed secondary education (45%), were married (68%), and were unemployed (55%). The most common chronic conditions were diabetes (42%), hypertension (36%), and cardiovascular diseases (22%). Table 1 presents the detailed demographic characteristics of the participants.

Table 1. Demographic Characteristics of the Participants (N = 400)

Characteristic	**n (%)**
Gender	
Female	232 (58%)
Male	168 (42%)
Age (years)	

Characteristic	**n (%)**
18-29	60 (15%)
30-49	168 (42%)
50-69	140 (35%)
≥70	32 (8%)
Education Level	
No formal education	48 (12%)
Primary education	84 (21%)
Secondary education	180 (45%)
Tertiary education	88 (22%)
Marital Status	
Single	72 (18%)
Married	272 (68%)
Divorced/Widowed	56 (14%)
Employment Status	
Employed	180 (45%)
Unemployed	220 (55%)

Characteristic	**n (%)**
Monthly Income (SAR)	
<5,000	140 (35%)
5,000-9,999	160 (40%)
≥10,000	100 (25%)
Chronic Diseases	
Diabetes	168 (42%)
Hypertension	144 (36%)
Cardiovascular diseases	88 (22%)
Asthma	60 (15%)
Others	40 (10%)

Nurse-Patient Communication and Medication Adherence Scores

The mean score for nurse-patient communication, as measured by the NPCS, was 85.6 (SD = 14.7), indicating a moderately high level of communication between nurses and patients in the primary healthcare centers. The mean score for medication adherence, as measured by the MAQ, was 2.4 (SD = 1.2), suggesting a moderate level of adherence among the participants.

Relationship between Nurse-Patient Communication and Medication Adherence

Pearson's correlation analysis revealed a significant positive correlation between nurse-patient communication and medication adherence ($r = 0.679$, $p < 0.001$), indicating that better nurse-patient communication was associated with higher levels of medication adherence.

Predictors of Medication Adherence

Multiple linear regression analysis was conducted to identify the predictors of medication adherence among the nurse-patient communication dimensions, while controlling for demographic variables. The results showed that empathy ($\beta = 0.315$, $p < 0.001$), information

exchange ($\beta = 0.256$, $p < 0.001$), and nursing tasks ($\beta = 0.189$, $p < 0.001$) were significant predictors of medication adherence, explaining 53.7% of the variance ($R^2 = 0.537$, $F(10, 389) = 45.05$, $p < 0.001$). Age ($\beta = 0.124$, $p < 0.01$) and education level ($\beta = 0.098$, $p < 0.05$) were also significant predictors of medication adherence, with older and more educated patients showing higher levels of adherence.

Discussion

The findings of this study highlight the importance of nurse-patient communication in promoting medication adherence among patients with chronic conditions in Saudi Arabian primary healthcare centers. The moderately high level of nurse-patient communication observed in this study is consistent with previous research in Saudi Arabia (Alotaibi et al., 2016) and suggests that nurses in primary healthcare settings are making efforts to engage in effective communication with their patients.

The significant positive correlation between nurse-patient communication and medication adherence supports the existing literature on the role of communication in promoting adherence (Zolnierek & Dimatteo, 2009; Schoenthaler et al., 2014). This finding underscores the need for nurses to prioritize effective communication strategies, such as active listening, empathy, and clear information exchange, to facilitate patients' understanding of their medication regimens and encourage adherence.

The identification of empathy, information exchange, and nursing tasks as significant predictors of medication adherence aligns with previous research highlighting the importance of these communication dimensions in promoting patient engagement and adherence (Prendergast, 2015; Mrayyan, 2012). Nurses who demonstrate empathy, provide clear and comprehensive information about medications, and effectively perform nursing tasks related to medication administration are more likely to foster trust and cooperation among their patients, leading to better adherence.

The finding that age and education level were significant predictors of medication adherence is consistent with previous research (Alhaddad et al., 2015; Alatawi et al., 2020) and suggests that older and more educated patients may have a better understanding of the importance of adhering to their medication regimens. Nurses should be aware of these demographic factors and tailor their communication strategies accordingly to meet the needs of diverse patient populations.

Implications for Practice

The findings of this study have important implications for nursing practice in primary healthcare settings in Saudi Arabia. Nurses should prioritize the development and implementation of effective communication strategies to promote medication adherence among their patients. This can be achieved through training programs focused on empathy, active listening, and clear information exchange.

Healthcare organizations should also provide resources and support for nurses to engage in patient education and counseling related to medication adherence. This may include the development of standardized patient education materials, the use of technology-based adherence tools, and the allocation of dedicated time for medication counseling during patient visits.

Interprofessional collaboration between nurses, physicians, and pharmacists is essential for promoting medication adherence. Nurses should work closely with other healthcare professionals to ensure that patients receive consistent and comprehensive information about their medications and to address any barriers to adherence.

Limitations and Recommendations for Future Research

This study has several limitations that should be considered when interpreting the results. First, the cross-sectional design limits the ability to establish causal relationships between nurse-patient communication and medication adherence. Future research should employ longitudinal designs to examine the impact of communication on adherence over time.

Second, the reliance on self-reported measures of medication adherence may be subject to social desirability bias, as patients may overestimate their adherence to present themselves in a positive light. Future studies should consider using objective measures of adherence, such as pill counts or electronic monitoring devices, to validate self-reported data.

Third, the convenience sampling method and the focus on primary healthcare centers in Riyadh may limit the generalizability of the findingsto other healthcare settings and regions in Saudi Arabia. Future research should employ randomized sampling techniques and include a more diverse sample of healthcare facilities to enhance the external validity of the findings.

Finally, while this study controlled for several demographic variables, there may be other factors influencing medication adherence that were not accounted for, such as health literacy, social support, and medication-related factors (e.g., side effects, cost). Future research should explore these additional factors and their potential interactions with nurse-patient communication in predicting medication adherence.

Conclusion

This study provides valuable insights into the relationship between nurse-patient communication and medication adherence in Saudi Arabian primary healthcare centers. The findings highlight the importance of effective communication strategies, particularly empathy, information exchange, and nursing tasks, in promoting adherence among patients with chronic conditions. Healthcare organizations and nurses should prioritize the development and implementation of communication-based interventions to improve medication adherence and ultimately enhance patient outcomes. Future research should build upon these findings by employing more rigorous designs, objective measures, and diverse samples to further elucidate the complex interplay between communication and adherence in the Saudi Arabian healthcare context.

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