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Increasing the Compliance of Severe Asthma Patients with Respiratory Therapy

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Abstract

Purpose: The objective of the current study was to investigate the role of respiratory therapy in increasing compliance to medication among asthma patients in Saudi Arabia. Compliance to medication has positive impacts on the health outcomes of patients with respiratory diseases.

Methodology: The population of the current study included 1,500 respiratory therapists in the country of which 38 were selected using simple random sampling to participate in an online survey. The study adopted descriptive research design to investigate the methods preferred as intervention to increase compliance to medication.

Findings: According to the findings, most of the respiratory therapists preferred to tailor their care to the needs of the patients. A significant difference was observed between the methods used by respiratory therapists at rural and urban settings.

Recommendation: Healthcare professionals should apply respiratory therapy to increase the compliance to severe asthma patients to medication based on the needs of the patients.

Keywords: *Severe asthma, respiratory therapy, compliance to medication.*

Introduction

Compliance with respiratory therapy among asthma patients include the decisions that they make to initiate and maintain the behaviors recommended by care providers. As one of the most common respiratory diseases, asthma could be fatal and have significant implications on the patient's quality of life (George, 2018). Through respiratory therapy, care providers improve the overall health of patients using medication and behavior guidelines. However, intentional or unintended barriers to the adherence to therapy and medication is a critical challenge to the care of patients with asthma. The failure of patients to comply with medication and respiratory therapy is affected by their belief on the effectiveness of recommended practices and the complexity of treatment. The methods of care affecting compliance to medication include the frequency of the prescribed dosage and the measures used by respiratory therapists to increase compliance.

The prevalence of asthma differs among populations and defines the methods care givers use to improve health outcomes and the quality of life for the patients. One of the key strategies that respiratory therapists could use to improve the health of their patients is to increase their compliance with medication. While the prevalence of asthma is high in Saudi Arabia, the adherence to medication differs among populations. Hamdan et al., 2018 found out that while asthma control and adherence to treatment was high among the highly educated males in the county, it was low among other groups. It is critical that healthcare professionals develop strategies to increase the likelihood of patients to take medication. Respiratory therapy involves the application of psychotherapeutic and physical care methods to improve the health of patients with respiratory diseases. The current research paper aims at investigating the measures that health professionals could use to increase the compliance of patients with asthma medication in Saudi Arabia.

Research Question

How do respiratory therapists increase the compliance to medication among severe asthma patients in Saudi Arabia?

Research Methodology

Study Design

The current study adopted descriptive design since the methodology aligns with the goal of the research. Descriptive study designs are useful in obtaining information about a phenomenon affecting a particular population. The current research aims at determining the extent of patients' non-compliance with medication. Additionally, the study will determine how respiratory therapists play a role in increasing compliance with medication. The study design will facilitate provide in-depth analysis of information on the role that respiratory therapy has on the care of asthma patients.

Target Population and Sample

The target population for the study included all respiratory therapists in different care settings in Saudi Arabia. They were the appropriate target for the study since they are responsible in diagnosing respiratory diseases including asthma. Additionally, respiratory physicians determine the progression of asthma based on the symptoms and ensure that patients follow their advice. In addition to prescribing medication, respiratory therapists work closely with patients to determine if they have breathing problems after investigating their health conditions. There are 1,500 active

respiratory therapists in Saudi Arabia and about 60% work in critical care. From the population of 1,500 respiratory therapists, a sample of 38 participants was selected using simple random sampling technique. This sampling technique was viewed as appropriate since it reduces bias in the selection of participants for the study. There were 20 (52.63%) female and 18 (47.37%) male participants in the current study. This is a sufficient sample for a quantitative study within a population of the size targeted in the study. Random sampling ensured that the participants were representative of the population and reduced the impact of bias on the findings.

Data Collection and Analysis

Data was collected through an online survey conducted among the selected participants. The participants were presented with a survey instrument through the online software “SurveyMonkey.” A key advantage of this approach is that it allowed the researchers to have access to participants from different parts of the country with minimal travelling costs. Additionally, the online platform ensured that the data could be monitored and participants who pulled out were replaced in time for the final analysis. Through online data collection, the researchers offered the participants the opportunity to respond to the survey at their own free time. Data collected was analyzed for frequencies and chi-square was used to determine if there were differences by the geographical variable (rural vs. urban).

Review of Literature

Both the intentional and unintended failure to adhere to medication could have significant ramifications for asthma patients. The current literature provides a summary of the findings from studies on increasing the quality of care to asthma by enhancing their compliance to medication. According to Hannane et al. (2019), different factors affect how asthma patients abide to the guidelines on their medication and their intention to abide to therapy. The failure of patients to find medical advice for following treatment compelling increases their likelihood of halting treatment. Additionally, some patients believe that other treatment methods, apart from the prescribed treatment and therapy, are more effective in improving their health conditions. George (2018) found out that unintended failure to follow medication was caused by the complexity of therapy and lack of patients’ support systems such as reminders to take their medication. Regardless of the factors deterring patients from following their required treatment, it is critical to consider methods of increasing the compliance to care.

The current study applied the health belief model since it matches the trend in the current research. According to the model, the behavior and beliefs of patients determine how they respond differently to treatment (Bartlett et al., 2017). The study will investigate respiratory therapy as an intervention for compliance among patients receiving different types of care for severe asthma. The study will demonstrate how this intervention is effective in increasing compliance by investigating patients from different social backgrounds in Saudi Arabia. The model demonstrates how compliance levels are likely to change among patients based on their unique backgrounds and the impact on professional decisions by healthcare providers.

Respiratory therapy involves the care, treatment, and management of a patient’s breathing condition. Respiratory therapists work with patients experiencing heart and lung problems that affect their breathing. They may work in transitional care facilities, outpatient settings, inpatient care facilities, and in nursing homes. Their work involves the diagnosis of a patients’ lung

condition, education, and the prescription of care based on their assessment of the condition of the individual (Miksa et al., 2021). Consequently, respiratory therapy involves working with patients of different ages suffering from heart and lung conditions affecting their breathing capabilities. The care practitioners in this profession are trained in the therapeutic procedures that facilitate a patient's ability to maintain lung condition in the event of illness (Musharrafieh et al., 2020). While qualifications and certification differ among jurisdictions, respiratory therapists play a vital role in healthcare settings and provide education to patients with breathing problems.

Asthma patients rely on education and therapy to facilitate the management of their heart and lung functions. Asthma causes the swelling of airways and lungs can become inflamed and swollen making it hard for patients to breath normally. When the membranes lining the airways of patients are filled with mucus, they may experience difficulty breathing and experience an asthma attack. With medication, healthcare professionals educate patients on how to minimize the risks of such attacks and, therefore, improve their quality of live (George & Bender, 2019). However, patients often fail to take their medication as instructed by their physicians leading to the worsening of their conditions. For patients with severe asthma, failure to take medication as prescribed by physicians may have significant health complications including fatal health attacks. Patients' failure to comply with medication is associated with a variety of reasons. For some individuals, the prescriptions are complicated and often lead to misunderstanding the dosage requirements. Additionally, others may forget to take the medication as instructed by a physician while for some patients, long-term medication makes them dependent on treatment. The effectiveness of respiratory therapy among asthma patients depends on the ability and willingness of patients to follow the prescribed dosage. Developing measures to increase compliance with respiratory therapy among patients with asthma could improve their health outcomes and save lives.

Health conditions associated with asthma include obstructive sleep apnoea (OSA) and chronic obstructive pulmonary disease (COPD). Combined, these three health conditions make the majority of respiratory diseases worldwide (Owens, Macrea, & Teodorescu (2017). Left untreated, any of these respiratory conditions could be life threatening and fatal. In spite of efforts to increase access to care, lack of proper diagnosis and care makes it hard to treat these illnesses. Owens et al. (2017) noted that over 10% of the global population above 40 years old has untreated asthma, OSA, or COPD. Moreover, the authors noted that these diseases are interrelated which makes having one more likely that one or both of the rest will develop later in life. The provision of care for asthma patients is critical as it would save lives globally and increase the quality of care for patients. Barriers with the treatment of asthma include the failure of patients to follow up with the medication and therapy recommended by physicians. Determining solutions to the gap in care caused by this challenge would have significant benefits to individuals receiving care in healthcare facilities.

Aligning the care of asthma patients with evidence-based methods could increase the quality of service offered to patients with this health conditions. A key challenge that healthcare systems face combating respiratory diseases is the variability in the quality of care, the length of stay for patients in hospitals, and the cost of treatment among hospitals. According to Bartlett et al. (2017), developing an asthma care pathway and aligning patient care to these procedures could save lives and reduce the cost of treatment in hospitals. The authors noted that hospitals and physicians failed to follow standardized procedures in the diagnosis and treatment of their patients when such pathways in healthcare records did not exist. Consequently, the procedures adopted by physicians

to improve the care of patients proved critical to the wellbeing and recovery from asthma symptoms. Additionally, evidence-based care would increase the adherence of patients to recommended medication and therapy, lowering the intensity of their symptoms (Miksa et al., 2021). Healthcare professionals should align their care procedures with practices that match recommended standards to improve the effectiveness of treatments. By increasing the adherence to standardized methods of care, hospitals would increase the coordination of treatment between physicians and other healthcare professionals.

Mitigating the challenges of adherence to medication among asthma patients has taken different forms. Factors affecting the adherence to medication during care include the perception of the patients on the illness and how they feel about the effectiveness of medication. Additionally, George (2018) that the failure of patient to follow the recommended medication includes the nature of the treatment such as the frequency of the dosage and the perceived side effects of the medication. Psychotherapeutic approaches to increase the adherence of asthma medication among patients have gained increased use among physicians. The goal of these methods is to increase the likelihood that patients take the required doses of medication by targeting psychological challenges to adherence. According to George (2018), these approaches include shared decision-making where patients are engaged in conversations about their medication and possible adherence barriers. Additionally, coaching and motivational interviewing strategies play a role in reducing the patients' adherence to medication. Severe asthma has significant implications on the quality of life for patients and developing methods to improve care outcomes is critical.

Determining the characteristics of the population affected by a respiratory disease could indicate the measures to increase compliance with therapy. Al Ghobain, Algazlan, & Oreibi (2018) investigated the prevalence of asthma among male and female participants aged between 20 and 44 in Saudi Arabia. According to data from their study, the researchers found out that prevalence was not significantly different between the male and female participants. Additionally, there were no differences between the participants living in urban and rural areas. However, a significant difference was observed in nasal allergic reactions among the asthmatic and non-asthmatic participants in their research. The percentage of the participants diagnosed with asthma by a physician was 11.3% while those taking medication for asthma made up 10.6% of the participants. Since nasal allergies were more likely to affect asthmatic participants, increasing the compliance of patients with medication could improve their quality of life.

Ensuring that patients adhere to medication is one of the critical roles played by professionals in respiratory therapy. According to findings by Hamdan et al. (2019), the compliance of asthma patients in the Middle East with medication was low and a key healthcare issue for professionals in the field. Their research focused on the risk factors and indicators of asthma prevalence in both North Africa and the Middle East. According to the findings, patients receiving treatment for asthma failed to comply with the required dosage of medication and the advice given by their physicians on their health. Additionally, the research showed that the quality of life for asthma patients was influenced by their compliance with medication. The highly-educated males in the study were found to have higher levels of control of asthma with physician-guided methods. Increasing the control of symptoms of asthma can have significant contributions on the health outcomes of patients.

Findings

The participants in the study were asked to indicate the setting of their workplace and the findings showed that 23 (60.53%) worked in urban care facilities while 15(39.47%) respiratory therapists working in cities in the country. The findings are in line with the distribution of care facilities and the target population of respiratory therapists in Saudi Arabia. Majority of the healthcare organizations are situated in areas and, therefore, most of the respiratory therapists work in the region. Additionally, the respiratory physicians were asked to list all the interventions they had used to increase the adherence of asthma patients to medication over the past three months. The goal was to determine the methods the healthcare professionals participating the study were applying to ensure that patients were taking their medication. Adherence was defined as the initiation, prescription, and persistence of medication offered for the treatment of asthma. The findings are shown in table 1 below.

Table 1: List of interventions

Intervention	Urban	Rural	Total
Availability	11	7	18
Conducting follow-up	13	9	22
Educating patients on benefits	16	5	21
Tailoring care to individual needs	18	10	28
Use of technology	12	12	24

From the five methods hypothesized in the current study, the most frequently used was tailoring the care of patients to their needs. In particular, this method as highly adopted by respiratory therapists working in the city settings. The second most followed was the use of technology to ensure the patients followed their medication. The respondents further demonstrated that they were using conducting follow-up and educating patients on their wellbeing and the role of medication. Asked if they made their availability known to the patients, only 18 respondents said they use this approach to encourage patients to comply with medication. The question for the chi-square test was, “which method do you find most useful in ensuring the compliance of patients with medication?” The data was analyzed to determine if the preferences of the participants were affected by the location of their workplace. The chi-square test showed significant difference (p . value = 0.0046) between the preferences of rural and urban respiratory therapists.

Table 2: Most Preferred Intervention

	Urban	Rural	Total
Availability	2	0	2
Conducting follow-up	3	3	6
Educating patients on benefits	5	2	7
Tailoring care to individual needs	11	1	12
Use of technology	2	9	11
Total	23	15	38

Discussion

The findings from the survey showed that respiratory physicians experienced challenges with the adherence of asthma patients to medication. Additionally, the findings demonstrated that different interventions were used by physicians to increase the adherence of patients to medication. Based on the findings, one of the most preferred methods was the tailoring of medication to the patients' needs. Healthcare professionals have to work with patients from different backgrounds. As observed by Hamdan et al. (2019), the adherence of asthma patients to medication was affected by a range of factors including their gender and level of education. Aligning care to the patient's needs ensures that the healthcare professionals improve the health outcomes of their patients. The findings aligned with the chi-square test showing significance difference in the preferences of rural and urban respiratory physicians on the interventions used on patients.

The professionals working with patients in the rural settings were likely to prefer the use of technologies that could increase compliance. Reminding patients to follow their dosage increases the rate of adherence among these settings. However, offering care that matched the patients' needs was the most preferred option among physicians working in the urban settings. The findings show that while compliance to medication among asthma patients is generally low in Saudi Arabia, the interventions work differently for patients. Determining how each patient's social and background characteristics affects their compliance with medication would improve the health outcomes and quality of living among patients with asthma.

Conclusions and Recommendations

Compliance with medication is a critical issue among professionals working with individuals experiencing respiratory diseases. Determining the role of respiratory therapy on the adherence to medication among asthma patients would improve their quality of life. The findings from the current study show that respiratory therapists were applying different methods to increase the compliance of patients with medication. Additionally, the results demonstrate that aligning the type of the intervention with the experience of the patients increased the effectiveness of strategies used to increase adherence to medication. More research is required in this field to determine changing patterns of adherence to medication among asthma patients in Saudi Arabia and the role of interventions related to respiratory therapy.

Based on the findings, healthcare professionals should align the methods used to increase compliance with the needs of the patients. Rural and urban patients have varying needs as shown in the study. Therefore, they respond differently to interventions used to improve their compliance to medication and it is critical that their needs are met at healthcare and professional levels. Healthcare professionals should apply the findings of the current study to determine the healthcare interventions that best apply to their patients' need when increasing compliance to medication.

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