

HEALTH-RELATED QUALITY-OF-LIFE IN PATIENTS WITH ALLERGIC RHINUSITIS: A CROSS-SECTIONAL STUDY IN VIETNAM

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Abstract

Objective: To investigate the health-related quality of life in patients with AR within the Vietnamese context.

Methods: This study was conducted in the form of a cross-sectional research approach. The inclusion criterion was set in such a way that the participants were expected to be patients aged 10 and above. also, the participants were expected to be or have experienced AR symptoms; including itchy nose, constant sneezing, rhinorrhea, and nasal congestion – for at least four days per week, extending to four or more consecutive weeks. Conducted between March and August 2017, the study relied on the RQLQ as a research instrument.

Results: Out of 146 AR patients whose results were deemed significant and worth considering in the Vietnamese context, 38.0% of the responses had their results demonstrate that they exhibited a mildly affected quality of life, with the rest of the individuals (62%) found to exhibit a severely influenced quality of life. It was also evident that for patients who experienced severe intermittent AR, when P was set at $P < 0.05$, the majority exhibited a significant reduction in their quality of life. Notably, this study did not find a statistically significant correlation between the gender of the participants and the quality of life in the Vietnamese AR patients; with P found to be $P < 0.4560$.

Conclusion: This study's findings demonstrated that there is a significant correlation between disease severity and the quality of life in AR patients within Vietnam. In situations, where patients were reported to exhibit severe intermittent or permanent disease, the results demonstrated that they were more likely to experience poor health-related quality of life. As such, it was inferred that AR severity and its associated symptoms compromise the mental and physical well-being of the patients, hence their quality of life. The implication for Vietnam's healthcare system is that AR poses adverse effects on the patients' daily activities, mood, and sleep quality.

Keywords: Health Related Quality of Life, Quality of life, QOL, Rhinitis, Vietnam.

INTRODUCTION

In the current world, most of the healthcare systems have continually grappled with increasing costs of operations. Also, the struggle comes at a time when there are growing numbers of health disorders, a trend exacerbated by a significant increase in populations. Also, community challenges such as poverty and unequal access to quality health care have been observed to compromise efforts seeking to improve population health. According to Adebola, Abidoeye, Ologe, Adebola and Oyejola (2016), developing countries form some of the worst hit regions, an adverse outcome that attracts scholarly investigations regarding the prevalence of different conditions, as well as the impact of the health conditions on the quality of life (QOL) of the affected patients and their families. One of the specific conditions that have proved challenging to the majority of the developing countries' healthcare systems entails allergic Rhinitis (AR). This study sought to examine the health-related quality of life in patients with AR, with specific insights gained from the context of Vietnam. Conducted from a cross-sectional research perspective, the study strived to sensitize relevant healthcare authorities (at the national and local levels) regarding some of the effects that the health condition might have on the affected populations, paving the way for the formulation and implementation of relevant strategies or early interventions aimed at improving the target population's quality of life (or perception of themselves and their position in society).

LITERATURE REVIEW

Occurring in the form of a chronic inflammatory health condition, Allergic Rhinitis (AR) refers to a disease that targets individuals' upper respiratory tract. According to Bachert and van Cauwenberge (2003), some of the classic symptoms with which AR is associated include rhinorrhea, nasal congestion, itching, and sneezing. In another study, Chen, Katz, Shiboski and Blanc (2005) avowed that AR could occur as a seasonal health condition or a perennial condition. Whereas studies that have focused on AR as a perennial condition have documented that its causes include pet dander, fungal spores, house dust, mites and other indoor allergens (Craig, McCann, Gurevich & Davies, 2004), those that have examined AR as a seasonal condition have concurred that the health condition arises from airborne pollens. It is also worth indicating that some studies concur that AR exists in the form of an episode rhinitis whereby it results from an individual's intermittent exposure to the perceived allergens (Jaruvongvanich, Mongkolpathumrat, Chantaphakul & Klaewsongkram, 2016).

From the findings documented in most of the previous scholarly investigations, it remains notable that the global prevalence of AR has been observed to stand at 10% to 40%, with developing regions reported to be among the worst hit areas (Mohammadi, Gharagozlou & Movahedi, 2008). Recent studies point further to a global increase in the incidence and prevalence of AR, with this worrying trend attributed to the factor of environmental changes (Monique, Edmund, Erwin, Lieke, Berend & Joris, 2008). Also, some of the conditions associated with AR have been documented to assume an increasing trend due to the perceived environmental changes. As reported by Mshiu (2015), asthma forms one of these conditions whose prevalence remains similar to that which is linked to AR.

Based on the scholarly observations highlighted above, it is worth acknowledging that AR has evolved as a global problem, especially due to its increasing prevalence in developing countries, which are relatively distributed across continents (Nasiri, Homagostar & Tajik, 2015). In the study by Orban, Saleh and Durham (2009), it was established that the worrying trends in the prevalence of AR imply that about 25 percent of the world's population has been affected. For studies that have examined the incidence and prevalence of AR in specific contexts, the majority of the results that have been established point to wide variations in rhinoconjunctivitis and rhinitis, implying that the populations affected vary from one country to another. Other studies have examined the prevalence of AR in specific areas or communities within selected countries. As contended by Pariente, LePen, Los and Bousquet (1997) and Shariat, Pourpak and Khalesi et al. (2012), most of the results demonstrate that there are wide variations in the incidence and prevalence of the condition, with Small, Piercy, Demoly and Marsden (2013) stating that some of the factors accounting for these differences range from socio-cultural to economic and political attributes.

Other studies have examined the impact of AR on the lives of patients, their families, communities to which the families belong, and the overall functioning of national governments. As avowed by Thompson, Juniper and Meltzer (2000), most of the results demonstrate that AR tends to compromise the quality of life of patients and their families, especially regarding issues such as productivity, education, and work. A question that arises is whether these effects on the quality of life of patients hold and operate uniformly in different regions,

communities, and countries – or they vary based on geographical characteristics of the affected zones. Adebola, Abidoje, Ologe, Adebola and Oyejola (2016) strived to understand the relationship between AR prevalence and the quality of life of communities and documented that the condition is a risk factor for other diseases. As contended by Bachert and van Cauwenberge (2003), some of the diseases that are likely to arise from AR, if untreated, include disease of the respiratory tract, with Chen, Katz, Shiboski and Blanc (2005) stating further that this secondary effect of AR yields a significant increase in healthcare costs at the individual, family, community and national levels, suggesting that AR's secondary effects tend to compromise a patient's life's socio-economic aspects. A debate that arises is whether such effects are evident based on the perspective of patients in the Vietnamese context, a dilemma that motivated the current study's focus on the developing country.

According to Craig, McCann, Gurevich and Davies (2004), AR reduces the quality of life of individuals because of the direct effects with which its primary symptoms are associated. Apart from respiratory tract infections as disease that arise from the presence of untreated AR, other disorders that have been reported, based on scholarly findings such as those documented by Jaruvongvanich, Mongkolpathumrat, Chantaphakul and Klaewsongkram (2016) and Mohammadi, Gharagozlou and Movahedi (2008), include depression, impaired memory, and sleep disorders; with Monique, Edmund, Erwin, Lieke, Berend and Joris (2008) stating that the latter conditions tend to compromise the affected populations' quality of life significantly. Whether these outcomes were likely to be witnessed in the Vietnamese context formed a debate that this study sought to investigate.

Regarding the concept of QOL, a study by Mshiu (2015) indicated that the aspect refers to the people's satisfaction of life, welfare, and wellbeing. Relative to the attribute of health-related quality of life, Nasiri, Homagostar and Tajik (2015) stated that the concept signifies factors that define or shape and individual's perception of their position in society – but strictly concerning their health functionality. In the recent past, an increasing number of scholarly investigations have focused on the assessment of the quality of life of individuals, especially from the perspective of health. The eventuality is that many clinical research studies have strived to understand the quality of life of patients in different units or departments, with Orban, Saleh and Durham (2009) observing that the motivation behind this trend has been to predict some of the relevant and targeted strategies that could be formulated, adopted, and implemented to achieve fruitful outcomes in health care service delivery, having tailored treatment modalities to the perceptions and needs of patients and their families.

It is also worth indicating that most of the past scholarly investigations that have strived to give insight into the relationship between illness and health-related quality of life have relied on QOL questionnaires. According to Pariente, LePen, Los and Bousquet (1997), the role of the QOL questionnaires has been to determine the extent to which the clinical management practice tends to reduce chronic disease symptoms, hence improvements in the daily life of patients. Also, Shariat, Pourpak and Khalesi et al. (2012) documented that the QOL questionnaires have been employed to establish the impact of certain treatment modalities on disease control. A specific example of the instrument that has gained increasing use is the rhinoconjunctivitis quality of life questionnaire (RQLQ). As avowed by Thompson, Juniper and Meltzer (2000), this research tool has been employed in most of the previous studies due to its promising capacity to assess the target populations' quality of life, especially those who have been diagnosed with rhinoconjunctivitis.

Regarding health related QOL of AR patients, some studies have focused on developing (Small, Piercy, Demoly & Marsden, 2013) while others have focused on the developed world (Thompson, Juniper & Meltzer, 2000). For example, Adebola, Abidoje, Ologe, Adebola and Oyejola (2016) strived to gain insight into the health-related quality of life of AR patients in the Iranian context. Findings demonstrated that when the severity of the diseases increases, the quality of life of the target population tends to be affected adversely. In a similar study, Bachert and van Cauwenberge (2003) established that the presence of AR tends to cause adverse effects on the physical and psychological health of individuals, especially pediatric patients in developing countries. Therefore, these studies are important and contributory to this investigation because they increase the understanding that there is a negative correlation between AR and the patients' quality of life. Despite this informative outcome, these scholarly assertions falter in several ways. For instance, the studies fail to recommend some of the clinical interventions that could be implemented to restore the patients' quality of life. Also, the studies do not clarify whether the correlation operates uniformly, or it varies from one community to another. Particularly, the observations fail to unearth some of the demographic and geographical or context-

and community-specific factors, if any, that might play a moderating role in shaping the correlation above. lastly, the documentation in most of the previous studies fails to unearth some of the challenges, if any, that healthcare systems in developing countries (such as Vietnam) face while seeking to respond to the perceived adverse effects of AR on the patients', families' and communities' quality of life. To respond to these gaps, this study strived to collect data from AR patients in Vietnam.

METHOD AND MATERIALS

This study was conducted in the form of a cross-sectional research approach. The inclusion criterion was set in such a way that the participants were expected to be patients aged 10 and above. also, the participants were expected to be or have experienced AR symptoms; including itchy nose, constant sneezing, rhinorrhea, and nasal congestion – for at least four days per week, extending to four or more consecutive weeks. According to Chen, Katz, Shiboski and Blanc (2005), the latter criterion for AR symptoms is important and conforms to the ARIA (Allergic Rhinitis Impact on Asthma) guidelines. Conducted between March and August 2017, the study relied on the RQLQ as a research instrument. Most of the previous studies had confirmed the reliability and validity of the Persian version of this questionnaire (Craig, McCann, Gurevich & Davies, 2004), making it appropriate for use in the study. Indeed, 16 items were presented in the RQLQ, seeking to investigate various attributes shaping the quality of life of AR patients. Some of the broad domains into which the questionnaire was categorized included performance problems during the day (four items), morning symptoms (which contained four items), having trouble falling asleep (which contained four items), and general sleep problems (which contained four items). With the aim being to determine the severity of AR symptoms, upon which the patients' health-related quality of life would be predicted, the participants were presented with seven options from which they would respond to the respective items in the broad categories or domains into which the questionnaire was classified.

The study proceeded in such a way that for each participant, the mean scores were obtained in relation to their response to the QOL questionnaire. It is also notable that no incentives were provided for participants who participated. Furthermore, part of the research involved younger individuals, implying that vulnerable populations were present. For these groups, permission or informed consent was obtained from their parents, guardians, or primary caregivers. Also, the decision to participate was clarified as being voluntary and the participants were at will to withdraw from the data collection procedure. Additionally, the purpose of the study was explained to the participants before being presented with the data collection instrument. Also, it was clarified that there would be no penalty, should any participant withdraw from participating, even after the data collection process had commenced. From an ethical perspective, the raw data was analyzed in its original form without interference or manipulation. It is also important to highlight that the participants were assured of their anonymity whereby codes were used, rather than their names and physical addresses. Additionally, the participants were at liberty to request to access the final results obtained by the study; after analyzing the raw data via descriptive and inferential statistical techniques. The data collection process was conducted in such a way that semi-structured interviews were conducted before filling in the questionnaires. To determine the correlation between the independent and dependent variables, Chi-square tests were adopted. Furthermore, the SPSS-16 software was used to determine the quantitative variables' median, standard deviation, and the mean. Lastly, the study's and results' statistical significance was set at $P < 0.05$, implying that results that satisfied this criterion were deemed meaningful.

RESULTS

With the study relying on and collecting data from 146 individuals, whose results satisfied the designed criterion and were considered meaningful and worth analyzing, there was a statistically significant difference regarding the gender of the respondents. Specifically, male respondents accounted for 61% of the responses that were received while their female counterparts accounted for 39% of the responses. With the participants' mean age established as 30 ± 11.18 , the figure below illustrates their demographic outcomes.

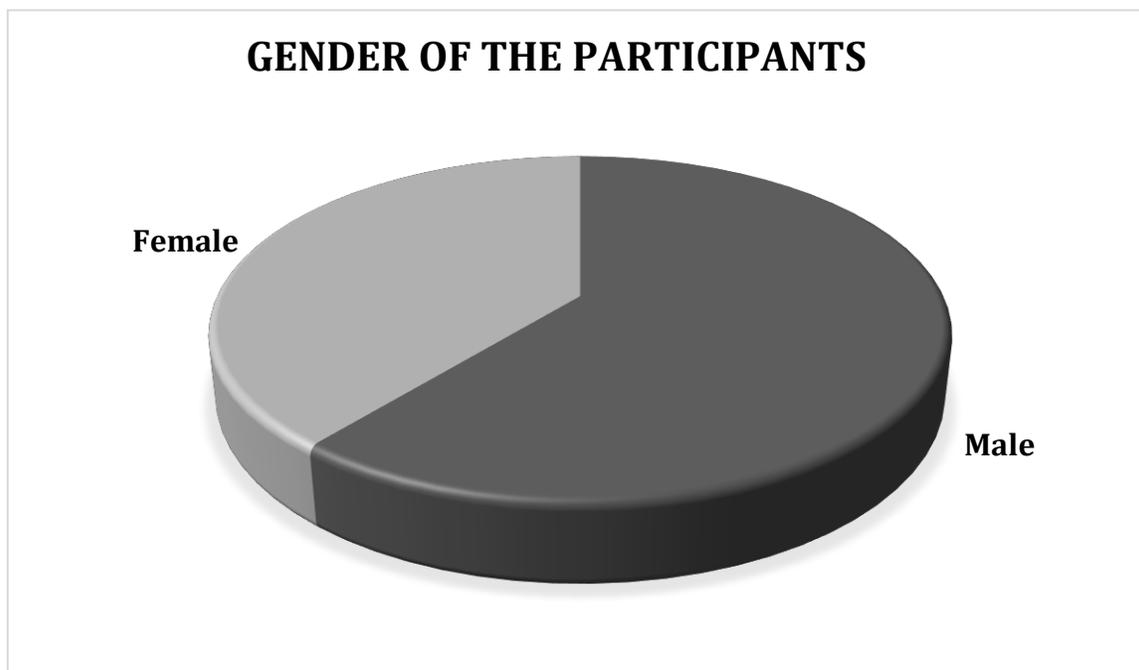


Fig 1: Participants' demographic data

Upon collecting the clinical data of the AR patients in the Vietnamese context, the study proceeded to focus on specific objectives. Indeed, it was found that the dominant symptom entailed rhinorrhea. In ascending order, other dominant symptoms included watery eyes, nasal congestion, and itchy nose. From the perspective of percentages, these conditions represented 69.0%, 70.0% and 82.0% respectively. Based on the guidelines advocated by the ARIA, an investigation of such participants requires the division of the assessment into four major domains. For the first group, which involved a mild permanent group, the participants were 15.0% of the results that were obtained while the moderate to severe permanent group accounted for 27.0% of the responses that were received. Regarding the mild intermittent groups, the participants were 19.0% of the results, with the majority of the AR patients (38.0%) constituting those who entailed a moderate to severe intermittent group. Regarding the concurrent conditions involving AR patients who experienced a poor sense of taste and a poor sense of smell, findings demonstrated that these individuals were 3.0% and 7.0% respectively.

The investigation proceeded to unearth the participants' quality of life relative to the items that were presented on the RQLQ. This assessment incorporated groups such as the severely changed category and the mildly changed category. Out of 146 AR patients whose results were deemed significant and worth considering in the Vietnamese context, 38.0% of the responses had their results demonstrate that they exhibited a mildly affected quality of life, with the rest of the individuals (62%) found to exhibit a severely influenced quality of life. It was also evident that for patients who experienced severe intermittent AR, when P was set at $P < 0.05$, the majority exhibited a significant reduction in their quality of life. Notably, this study did not find a statistically significant correlation between the gender of the participants and the quality of life in the Vietnamese AR patients; with P found to be $P < 0.4560$. Another parameter that was investigated involved the correlation between disease severity and the AR patients' quality of life. On these variables, this study established a significant correlation. Particularly, there was an inverse relationship whereby an increase in disease severity was found to correlate with a significant decline in the participants' health-related quality of life.

DISCUSSION

Indeed, AR forms one of the most reported allergen health conditions. As mentioned earlier, this condition affects between 10 percent and 40 percent of the world's population. Recent statistical outcomes suggest that there is an increasing incidence and prevalence of this condition, with developing countries associated social, cultural, political, and economic burdens documented to compound these negative trends. In this study, the prevalence of the disorder in relation to the gender of the participants concurred with the demographic

features of most of the participants assessed in the majority of the previous scholarly studies. Particularly, most of the previous studies report more female than male participants, a finding that was evident in this study whereby 39.0% of the participants were male while 61.0% of the participants were female.

In this study, there was no statistically significant correlation between AR symptoms and the health-related quality of life of the participants in the Vietnamese context but rhinorrhea emerged as a dominant AR symptom, which stood at 82.0% - compared to other symptoms such as itchy nose and nasal congestion. Imperative to highlight is that the latter results also concurred with those that had been reported in most of the preceding scholarly studies. For instance, the study by Jaruvongvanich, Mongkolpathumrat, Chantaphakul and Klaewsongkram (2016) had the results reveal rhinorrhea as the most common AR symptom among patients. It is also notable that this study's findings demonstrated that the most frequent condition was severe intermittent AR (at 38.0%). The latter observations differed with some of the previous studies. For example, Mohammadi, Gharagozlou and Movahedi (2008) reported that the most frequent type of the disease was the severe permanent type (at 34.0%). In the current study, which focused on the context of Vietnam, a moderating factor that was inferred to account for the perceived deviation from previous studies entailed the role of differences in climatic conditions. In particular, the inference was made because the study by Monique, Edmund, Erwin, Lieke, Berend and Joris (2008) suggested that permanent AR symptoms arose from air pollution and the type of apartment in which the participants lived, with the study by Mshiu (2015) suggesting that the symptoms were seasonal or intermittent due to factors such as high wind frequency, tree abundance, and more open spaces in the study area.

It is also worth noting that 117 participants had their results demonstrate that they experienced concomitant disease, with those linked to asthma accounting for 12% of the responses - and 29% linked to sinusitis. The results concurred with those that had been documented by Nasiri, Homagostar and Tajik (2015), who found that these concomitant conditions were prevalent and exhibited compatible frequency percentages. Another trend that was notable is that in the Vietnamese AR patients, the majority of the participants had AR-related problems compromise their quality of life. Some of the AR-related problems that the study established included practical problems during wake time, morning symptoms, and general sleep problems. In previous scholarly investigations such as those conducted by Orban, Saleh and Durham (2009) and Pariente, LePen, Los and Bousquet (1997), over 60.0% of the participants were reported to have experienced problems when awake, as well as sleep problems; implying that this study's findings concurred with those that were documented in the aforementioned scholarly investigations. Hence, it was inferred that in AR patients in Vietnam, the disease causes severe sleep problems in most of the individuals (62.0%) and that the secondary effect involves a notable decline in the quality of life of the patients. Whereas female respondents exhibited better quality of life than their male counterparts, the factor of gender did not play a statistically significant role in shaping the health-related quality of life. The latter result was attributed to factors such as the women's reduced exposure to allergens, as well as their presence on home settings. Indeed, the study by Shariat, Pourpak and Khalesi et al. (2012) established similar findings whereby there was no statistically significant correlation between the gender of the participants and their health-related quality of life, with related outcomes by Small, Piercy, Demoly and Marsden (2013) demonstrating women as parties who were more likely to experience better health-related quality of life.

CONCLUSION

In conclusion, this study's findings demonstrated that there is a significant correlation between disease severity and the quality of life in AR patients within Vietnam. In situations, where patients were reported to exhibit severe intermittent or permanent disease, the results demonstrated that they were more likely to experience poor health-related quality of life. As such, it was inferred that AR severity and its associated symptoms compromise the mental and physical well-being of the patients, hence their quality of life. The implication for Vietnam's healthcare system is that AR poses adverse effects on the patients' daily activities, mood, and sleep quality. With the AR symptoms observed to have significant effects on the selected individuals' health-related quality of life, it becomes important for the concerned stakeholders in the healthcare industry, whether public or private, to conduct mass sensitization and advocate for the early diagnosis of the disease. From an environmental perspective, it becomes imperative to reduce environmental allergens because they are predators of AR, hence poor health-related quality of life among the affected individuals. By taking active roles, it is projected that the country's community health service workers and organizations might steer change

realization, upon which the population's health-related quality of life might be improved significantly and, in turn, restore their productivity in social and economic arenas.

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