

**THE ASSOCIATION BETWEEN ALEXITHYMIA, SOCIAL
SUPPORT AND QUALITY OF LIFE OF HYPERTENSIVE
PATIENTS IN OWERRI MUNICIPALITY, IMO STATE**

**Ifechi Cajethan Uchegbu^{1*}, Rita Ugokwe-Joseph², Ucheagwu Valentine³, Nnamdi
Chinenyenwa Stephanie⁴ and Onu Onyinyechi Stellamaris⁵**

^{1,4,5}Department of Psychology, Imo State University, Owerri, Imo State, Nigeria.

^{2,3}Department of Psychology, Nnamdi Azikiwe University, Anambra State, Awka, Nigeria

*ifechiuchegbu@gmail.com

ABSTRACT: This study investigated the association between Alexithymia, Social Support and Quality of Life of Hypertensive Patients in Owerri Municipality, Imo State. The study utilized a cross-sectional survey design. The participants responded to self-report measures, such as the Toronto Alexithymia Scale (TAS-20) developed by Bagby, Parker and Taylor (1994); The WHO quality of life (WHOQOL-BRIEF) questionnaire and the Multidimensional Perceived Social Support Scale (MPSSS) developed by Zimet, Dahlem, Zimet and Farley (1988). Two (2) hypotheses were postulated and tested. Three hundred and two (302) participants were drawn from different private hospitals in Imo State, using both purposive and convenience sampling techniques. The participants' ages range between 35 and 74 years. The study used descriptive statistics and Hierarchical Multiple Regression to analyze the data. The results showed that social support ($\beta = .24$, $t = 4.487$, $p < .01$) significantly predicts the quality of life of hypertensive patients in Owerri Municipality. On the other hand, alexithymia ($\beta = .40$, $t = -7.446$, $p < .01$) negatively and significantly predicts the quality of life of hypertensive patients in Imo State. The study's findings contribute significantly to the understanding of how social support and alexithymia intricately shape the quality of life of hypertensive patients in Imo State. The researcher recommends, thus, that clinical psychologists be posted to every healthcare facility for the well-being of hypertensive patients and others who may need their services.

Keywords: Social Support, Alexithymia, Quality Of Life, Hypertensive Patients

INTRODUCTION

Hypertension is considered one of the leading causes of death and disability, and its prevalence is rapidly increasing in developing countries (Joffres, 2013). It is one of the most common worldwide health problems, as it is estimated that over 20% of all adults across the world have hypertension. It is estimated that close to 1.13 billion people had been diagnosed with hypertension in 2015, which is predicted to reach 1.56 billion in 2025 (Joffres, 2013). Hypertension is also considered the most important modifiable risk factor for chronic diseases such as coronary heart disease, stroke, congestive heart disease, end-stage renal disease and peripheral vascular disease. A persistent elevation of blood pressure (BP) in the arteries is defined as hypertension/high blood pressure (Maddu, Sava, Nalabolu, Naveen *et. al.*, 2021). Hypertension is a silent killer in which patients are

often unaware of their interference. Headache, facial flushing, dizziness, chest tightness, and vertigo are a few clinical manifestations and/or symptoms of hypertension. Lack of physical activity, obesity, excessive salt consumption, smoking, and chronic alcohol consumption all increase the risk of hypertension. It has also been found that many hypertensive patients suffer from headache, dizziness, depression, anxiety and tiredness, and many studies have revealed an association between hypertension and these symptoms. Hypertension affects not only the elderly but also young adults, as it is recognized as an independent risk factor for chronic diseases such as diabetes, which impose a significant burden on society. The second leading risk factor in the medical sector is hypertension.

Hypertensive patients are sometimes saddled with lots of responsibilities, and this may occasion psychological and physical risks to the individuals concerned and consequently impact their quality of life (QOL) as they navigate through daily activities. The World Health Organization (WHO) defines quality of life (QOL) as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Based on this definition, it can be seen that the quality of life not only involves an individual's assessment of their position in life, but also their social context and the context surrounding their environment (Fadli & Syamsidar, 2020). In the study conducted by Trevisol, Moreira, Kerkhoff, Fuchs and Fuchs (2011), it was found that individuals who suffer from hypertension have a lower quality of life compared to individuals with normal blood pressure. In the same study, patients with hypertension who underwent routine treatment also reported having a higher quality of life compared with individuals with uncontrolled blood pressure and under the influence of drugs. As hypertension is a chronic condition that cannot be completely cured, quality of life (QOL) is an important indicator to measure the effectiveness of hypertension treatment and management (Ha, Duy, Le, Khanal, & Moorin, 2014). Several previous studies have affirmed that hypertension significantly reduced patients' QOL compared to those without hypertension (Ghimire, Pradhananga, Baral, & Shrestha, 2017), especially in aspects of general health, physical functioning, vitality, and mental health. A study comparing QOL in hypertensive and non-hypertensive participants found that people with hypertension had a lower score in every domain of qol specifically in the mental health domain (Xu, Rao & Shi, 2016). Another population-based study showed that hypertension was associated with increased risk of having a worse QOL, representing 14 or more unhealthy days per month compared with normotensive individuals, an indication of lower quality of life of individuals with hypertension (Ogunlana, Adedokun & Dairo, 2009). Quality of life is a subjective concept that is based on individual perception. The physical, psychological, social, and spiritual well-being all have an impact on quality of life.

Numerous studies have investigated the relationship between hypertension and alexithymia, with different results. Some authors reported significant relationships; others reported mild ones, while a small number of studies reported none (McCubbin, Loveless, Graham, Hall, Bart & Moore, 2014). Alexithymia was said to be associated with physiological conditions that can lead to medical diseases (Panayiotou, 2018; Karakas, Karabulutlu, Akyil, Erdem & Turan, 2016). It was reported in a study conducted by Alslman et. al. (2020), Chalah & Ayache (2017), and Namdar & Arıkan (2020) that the level of alexithymia is higher in some chronic, autoimmune and systemic diseases compared to the average population. In a recent study, hypertensive patients were more alexithymic than normotensive participants, similar to other studies (Casagrande *et.al.*, 2019). However, treated hypertensive patients were more alexithymic than normal and untreated patients. A study conducted

by (Ardahanli , Akhan, Aslan, Akyuz & Akgun, 2021) further backed the hypothesis that alexithymia is linked to hypertension and TAS-DDF which is one of the different dimensions of alexithymia, seems to be the most important feature that explains this connection. Hypertension is a silent killer, and poor QOL can also impact on the mental state of affected individuals. Therefore, the researcher is interested in finding out if communication of their feelings and expression of how they truly feel has an impact on boosting their QOL as a way to reduce the deadly impact of high blood pressure, otherwise known as hypertension.

Studies demonstrate that the quality of life (QOL) in hypertensive individuals may be influenced by factors such as age, marital status, education, employment status, social support, time elapsed since diagnosis, number of medications taken and the presence of co-morbidities, such as anxiety and depression (Baladón, *et. al.*, 2016., Zhang, *et. al.*, 2017., DeCarvalho, *et. al.*, 2013., Xu, *et. al.*, 2017., Khalifeh, *et. al.*, 2017). Evidence further shows that social support contributes significantly to improving health outcomes (Osamor, 2015). A review on the influence of social support on chronic illness self-management shows that social support has a protective effect on self-management, particularly in supporting dietary changes. The bulk of evidence on social support has been on the characteristics of family support, such as perceived family support, family solidity, articulateness and struggles, which enable adherence to treatment for chronic conditions such as Hypertension. Adequate social support and interaction between patients and their families have been shown to support the uptake of positive health initiatives and improve the quality of patients' lives (Turan, Aksoy & Çiftçi, 2019). In addition to family support, social support can also be provided by friends and peers, as well as healthcare professionals and organizations. Thus, social support is multifaceted and may help patients remain active in their care when faced with physical, social and economic vulnerabilities (Adisa, Olajide & Fakeye, 2017). Family members can support hypertensive patients in several ways, including encouraging them positively, monitoring their health, sharing information, helping in moments of crisis and providing health care generally, including care with diet, physical exercise, and adherence to a medication regimen. In addition, family can transmit strength and courage to patients, which makes them feel safe and supported in the illness experience. The most common determinants of quality of life (QOL) are health status and social relationships, which could be positive or negative (Ward, McGarrigle, & Kenny, 2019). Patients with severe illness, such as hypertension, experience a lower QOL than the general population. They have high unemployment rates, live in substandard houses or are homeless and have little social support (Evans, Banerjee, Leese & Huxley, 2007).

Alexithymia is another factor suspected to impact the quality of life of hypertensive patients. Alexithymia is a versatile and transdiagnostic condition characterized by a complex and externally oriented way of thinking, recognizing and distinguishing emotions. This simply means it is the inability for one to recognize, identify and describe feelings or emotions; it is sometimes referred to as emotional blindness (Taylor & Bagby, 2013; Franz, Popp, Schaefer, Sitte, Schneider & Hardt, 2008). These characteristics and difficulties reflect deficits in the cognitive processing and regulation of emotions and may be developed as a coping mechanism to stress, which may contribute to the onset or maintenance of several medical and psychiatric disorders. People living with hypertension often develop depression as a result of changes in their quality of life and also subsequently alexithymia, which is related to depression severity, and patients with depression exhibit a high rate of alexithymia, representing a major public health concern. Alexithymia may

present difficulty for people living with hypertension, presenting unique challenges to their psychological well-being. These individuals often grapple with the complexities of managing their illness, and alexithymia adds an additional layer of complexity (Gurupriya, 2018). This difficulty in emotional expression can impede effective communication with peers, family, and health care providers, potentially leading to increased feelings of isolation and thoughts of ending one's life. As a result of difficulty in expression and articulation of emotion faced by people living with hypertension, they are often isolated in society, leading to the development of such feelings of worthlessness, loneliness, depression, etc. These ill feelings may, in turn, lead to the extreme thought of ending one's life.

Statement of the problem

Quality of life comprises multiple aspects, including psychological health, physical well-being, social relationships, and environmental conditions (Pagnin & Queiroz, 2015). Poor quality of life (QOL) among hypertensive patients is associated with an unhealthy lifestyle, psychological distress and could affect their overall well-being in the future (Pagnin, & Queiroz, 2015). Many studies have reported decreased QOL scores among hypertensive patients over the years, which is associated with several future adverse effects, including variable psychological problems, academic failure, and other negative impacts (Ibrahim *et al.*, 2014). Assessing quality of life can help in evaluating the physical and psychosocial impact of the disease on affected individuals. Studies demonstrate that the poor quality of life (QOL) in hypertensive individuals may be influenced by factors such as age, marital status, education, employment status, social support, time elapsed since diagnosis, number of medications taken and the presence of co-morbidities, such as anxiety and depression etc (Baladón, *et.al.*, 2016; Zhang, *et.al.*, 2017; Carvalho, *et.al.*, 2013; Xu, *et.al.*, 2016; Khalifeh, *et.al.*, 2017). Various stressors might influence the QOL of these patients, such as continuous demands when interacting with people, peer competition for excellence, the overwhelming load of new and massive information to learn, and, of course, the difficulty of balancing household duties with day-to-day life activities (Chan & Koh, 2007). Fewer studies addressed the impact of alexithymia and social support on the quality of life of hypertensive patients. Hence, the researcher wishes to add to the existing body of knowledge and also bridge the gap in knowledge by studying the variables. On the other hand, normotensive people with good physical and mental health are better able to overcome the problems they face in carrying out their day-to-day activities (Pagnin & Queiroz, 2015). Hence, the current study aims towards exploring the association between social support, alexithymia and quality of life of hypertensive patients. The study will also help clear contradictory reports of scholars on the variables of interest.

The objective of this study is to investigate the association between social support, alexithymia and quality of life of hypertensive patients. Furthermore, it's geared towards determining if alexithymia will significantly predict the quality of life of hypertensive patients and if social support will significantly predict the quality of life of hypertensive patients. To achieve these research objectives, the following hypotheses were postulated and tested: alexithymia would significantly predict quality of life among hypertensive patients in hospitals in Owerri, Imo State, Nigeria; and that social support would significantly predict quality of life among hypertensive patients in private hospitals in Owerri, Imo State, Nigeria.

METHODS

Participants

The researcher employed 302 participants from seven hospitals in Owerri Municipality, Imo State, Nigeria. Both participants and hospitals used for the study were selected using both purposive and convenience sampling techniques. Participants comprised 126 (41.7%) males and 176 (58.3%) females. The participants were patients whose blood pressures were above 140/90 mmHg as recorded using a sphygmomanometer. The hospitals selected were not only private hospitals but were also primarily situated within Owerri Metropolis. The participants' age ranges from 35 to 74 years.

Instruments

The Toronto Alexithymia Scale (TAS-20) is a self-report questionnaire that measures alexithymia. The TAS-20 was developed by Bagby, Parker and Taylor (1994) and is one of the most widely used measures of alexithymia. The items on the TAS-20 are rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) to indicate how well the statement applies to the individual. The scale demonstrated adequate Cronbach's alpha reliability of .88 in a Nigerian sample of hypertensive patients living within Owerri, Imo state. Their age ranges between 36 to 80 years. The norm score of the instrument is 62.00. This invariably implies that scores equal to or higher than the norm score indicate higher levels of alexithymia and vice versa.

Multidimensional Perceived Social Support Scale (MPSSS) was developed by Zimet, Dahlem, Zimet and Farley, (1988). It is a 12-item scale which measures social support from three sources: families, friends and significant others. It is structured in a 7-point format ranging from 1=very strongly disagree to 7=very strongly agree. Agwuzi, Obi, Udeasi and Chukwuji (2014) reported a Cronbach's alpha of .64 for the study drawn from the National Orthopedic hospital, Enugu, for Nigeria sample. The scale demonstrated adequate Cronbach's alpha reliability of .80 in a Nigerian sample of bereaved persons in Oyo and Oke-Ogun areas of Oyo state, Nigeria (Mojoyilola, 2010). Face validity was used for this scale as it has been used by different researchers among Nigerian samples (Agwuzi, Obi, Udeasi & Chukwuji, 2014; Mojoyilola, 2010). Sample items of the scale are, "My family really tries to help me" and "My friends really try to help me".

The WHO quality of life (WHOQOL-BRIEF) questionnaire was used to measure physical health, psychological (mental) health, social relationships, and relationships with features in their environment as a function of quality of life. This quality of life assessment tool has been validated in Nigeria (Gureje, Ogunniyi & Kola, 2006). The WHOQOL-BRIEF has 26 items scored on a Likert scale of 1 to 5. Gureje, et. al. (2006) reported an excellent internal reliability (Cronbach alpha=0.86) among Nigerian samples.

Procedure

After obtaining permission to conduct this study, the researcher employed both purposive and convenience sampling techniques to select seven private hospitals from Owerri Municipal, where

the sample for the study was drawn. Permissions were sought from the administrators of the selected hospitals for the study. Also, some nurses were recruited as the researcher's assistant from the various individual hospitals. The nurses were employed to measure participant's blood pressure. For the participants on ground, the researcher created rapport with the participants, briefly informed them about the study and sought their participatory consent. The participants interested in the study were encouraged to sign a consent form, and they were also assured of the confidentiality of their responses. The research assistants were also encouraged to administer the questionnaires to patients whose blood pressures were above 140/90 mmHg after establishing rapport. The questionnaires were issued and retrieved from the participants upon completion. The administration of the questionnaires lasted for two weeks. Of the 320 copies of the questionnaires distributed, 302 copies were properly filled and used for further analysis by the researcher, while, 18 copies of the questionnaires were not properly filled and further discarded.

Design/Statistics

A Cross-sectional survey design was used for this study. Descriptive statistics, Pearson correlation and Hierarchical Multiple Regression were used for data analysis.

RESULTS

Table 1: Means, Standard Deviations, and Correlations among the variables

		M	SD	1	2	3	4	5
1	Gender	1.42	.49	-				
2	Age	4.71	1.94	.00	-			
3	Alexithymia	30.32	9.13	.02	-.05	-		
4	Social Support	62.69	8.37	-.04	-.01	-.23**	-	
5	Quality of Life	8.59	11.76	-.22**	-.06	-.40**	.32**	-

Note N= 302; * = $p < .05$ (two-tailed), ** = $p < .01$

The results in Table 1 indicated that age does not have significant correlation with quality of life of hypertensive patients in Owerri ($r = .06$, $p > .005$). On the other hand, gender and alexithymia negatively and significantly correlated with quality of life respectively ($r = -.22$, $p < .01$; $r = -.40$, $p < .01$). This implies that when the scores on alexithymia increase, the scores on quality of life scales decrease; and when scores on alexithymia decrease, the scores on quality of life increase respectively. In other words, an increased level of alexithymia leads to poor quality of life of hypertensive patients. Social support was positively correlated with quality of life of hypertensive patient ($r = .32$, $p < .01$). This implies that higher level of social support are associated with a higher quality of life of hypertensive patients in Owerri Municipality.

Table 2: Hierarchical multiple regression for predictors of Quality of Life

Variable	Step 1 B	Step 2 B	T	Sig
<i>Predictors</i>				
Alexithymia	-.40**		-7.446	.000
Social Support		.24**	4.487	.000
R ²	.156	.209		
ΔR ²	.156	.053		
ΔF	55.446	20.131		
Df	1,300	2,299		
Durbin Watson	1.852			

** = $p < .01$; DV = *Quality of Life*

In Table 2, the Durbin-Watson statistic of 1.852 falls within the accepted range ($1.5 < D < 2.5$), indicating no autocorrelation problem in the data and that the error terms are independent. Also the Table depicts that both Model 1 and Model 2 were statistically significant.

Table 2 also shows that Alexithymia negatively predicted the quality of life of hypertensive patients in private hospitals within Owerri. Hence, the hypothesis, H1, which states that alexithymia will significantly predict the quality of life of hypertensive patients, was confirmed ($\beta = -.40$, $t = -7.446$, $p < .01$). Alexithymia accounted for 15.6% variance in the quality of life of hypertensive patients. This means that for every .40 unit decrease in alexithymia, the quality of life of hypertensive patients increased.

From Table 2, social support is a positive predictor of the quality of life of hypertensive patients ($\beta = .24$, $t = 4.487$, $p < .01$). Based on this, H2 was confirmed as social support predicts the quality of life of hypertensive patients. Social support accounted for 5.3% of the variance in the quality of life of hypertensive patients in private hospitals. This means that for every .24 unit increase in social support, the quality of life of hypertensive patients increased.

These findings from Table 2 indicate that the variables have weak prognostic value and a limited standalone utility. Although they are statistically significant, the vast unexplained variance indicates that other unmeasured factors fuel the condition. In other words, they cannot accurately predict outcomes for individual patients without other clinical markers.

DISCUSSION OF FINDINGS

This study investigated the association between social support, alexithymia and quality of life (QOL) of hypertensive patients in private hospitals in Owerri municipality. In accordance with the result, the first hypothesis, which stated that alexithymia will significantly predict the quality of life

of patients in private hospitals in Owerri municipality, was confirmed. The result showed that alexithymia negatively and significantly predicted QOL. This implies that the higher the levels of alexithymia, the lower the levels of the hypertensive patients' quality of life and vice versa. In other words, hypertensive patients with higher levels of alexithymia will experience lower quality of life and vice versa. This may be particularly true as more difficulty in identifying and describing feelings is expected to result in lower overall life satisfaction. This result supports the findings of Wise, Mann & Mitchell (1990), who reported a negative association between alexithymia and QOL in unselected medically ill patients as well as patients with inflammatory bowel disease, breast cancer, end-stage renal disease and hypertension. A similar study by Rebeca-Veras, Daniel, William and Gustavo (2013) among Brazilian women with Migraine revealed that women with migraine had higher levels of depression, anxiety and alexithymia, and lower levels of quality of life, self-reflection and insight, compared to controls. According to the findings of this study, alexithymia is linked to high rates of depression, anxiety and stress, which in turn reduces their level of QOL. The findings of the present study also align with the findings of Rimscha et al. (2012), who examined alexithymic characteristics in patients with dizziness and their relation to QOL. It was reported that alexithymia was significantly related to more severe symptoms of dizziness, while more pronounced alexithymic characteristics were associated with lower QOL. Lower levels of alexithymia are suspected to be significantly related to higher levels of QOL, as they facilitate emotional awareness, social connections, mental well-being and effective coping mechanisms. On the other hand, a higher level of alexithymia is related to a lower quality of life as a result of difficulties in identifying emotions, causing the clients to struggle with both empathy and social interactions and also predisposing them to a distant social functioning and poorer relationship quality.

The second hypothesis, which stated that social support would significantly predict quality of life among hypertensive patients, was also confirmed. Social support was identified as a positive predictor of QOL. The finding that social support positively and significantly predicted QOL among hypertensive patients raises intriguing insights into the complex interplay between social support and QOL, thereby offering a deep understanding of their intricate relationship. This finding aligns with the previous study of Turan et al. (2019), who reported that adequate social support and interaction between patients and their families have been shown to support the uptake of positive health initiatives and improve the quality of patients' lives. Turner et al (2019) also outlined that social supports have mixed associations with QOL and perceived support, which is the perception or belief that support is available when needed and has also been consistently related to higher QOL. In the previous study by Warapornmongkhokul et al. (2018), primary family-member caregivers' QOL and its association with self-efficacy and social support were analyzed. It was reported that 79.8 per cent of primary family-member caregivers were female, and 52.8 per cent reported having a good QOL, while 60.1 per cent reported a moderate level of perceived self-efficacy, and 56.7 per cent reported a high level of perceived social support for providing care. It was also reported that primary family-member caregivers, who provided care for male cancer patients and were co-responsible for covering the patient's cost of care, had a lower level of perceived self-efficacy and perceived social support and were also reported to have lower QOL. In essence, the present study is of the opinion that higher levels of social support are associated with better quality of life; that is, hypertensive patients with higher social support have a better quality of life compared to other hypertensive patients who don't. The finding that social support predicts

the quality of life of hypertensive patients is not out of place, as patients with a social network may likely follow prescribed treatment plans, take their medications consistently and be more likely to attend follow-up appointments. In the same vein, social support may provide patients with a safer outlet not only to express their fears but also to help them to maintain a positive outlook

Recommendations/implications of the study

The findings of this study hold several implications for patients suffering from hypertension, as the study underscores the importance of recognizing and addressing social support and alexithymia as critical determinants of their quality of life. In addition, understanding the relationship between alexithymia, social support and QOL can inform the development of interventions promoting emotional awareness and facilitating an improved self-well-being. In light of the foregoing, the following recommendations were put forward by the researcher:

Friends and relatives should help by spending more time with the patient. A support network is essential as it gives patients an opportunity to communicate their challenges with emotional regulation. It is not so much words of comfort that are needed, but more the willingness to be with them during the distress.

The government should also provide and create offices for psychologists in health care facilities. By this, the people will benefit from the services they render. The need for clinicians in hospitals cannot be overemphasized, as they can handle sources of distress/worry/fear and anxiety for the client. The study further emphasizes the relevance of counseling services by well-trained personnel to address concerns, ease distress, depression and anxiety that may arise in those experiencing the conditions.

Psychologists should also help encourage and promote strong social support and utilize emotion focused therapy/ psychotherapy to improve emotional recognition, regulation, and expressions among individuals who experience low QOL during therapeutic sessions. This is particularly true, as social support from a trained therapist will encourage the uptake of positive health initiatives and improve patients' quality of life.

There is an urgent need for stress management and wellness programs to enable clients to manage stress and promote well-being, which will in turn facilitate their quality of life.

Conclusion

The researcher investigated the association between alexithymia, social support and quality of life of hypertensive patients in Owerri Municipality, Imo State. The findings of the study confirmed two of the hypotheses. The first hypothesis that alexithymia would significantly predict the quality of life of hypertensive patients in hospitals in Owerri municipality, Imo State, Nigeria, was accepted. The result implies that alexithymia significantly predicts the quality of life of hypertensive patients in Owerri municipality. Similarly, the second hypothesis, which states that social support would significantly predict the quality of life of hypertensive patients in hospitals in

Owerri municipality, Imo State, Nigeria, was accepted. The results imply that social support significantly predicts the quality of life of hypertensive patients in Owerri municipality.

REFERENCES

- Adisa, R., Olajide, O.O., & Fakeye, T.O. (2017). Social Support, Treatment Adherence and Outcome among Hypertensive and Type 2 Diabetes Patients in Ambulatory Care Settings in southwestern Nigeria. *Ghana Med J.* 51(2), 64-77.
- Alsman, E. T., Hamaideh, S.H., Bani Hani, M.A., & Atiyeh, H.M. (2020). Alexithymia, fibromyalgia, and psychological distress among adolescents: literature review. *Int J Adolesc Med Health.* 32(3)
- Ardahanli, İ., Akhan, O., Aslan, R., Akyuz, O., & Akgun, O. (2021). The relationship between blood pressure regulation and alexithymia variability in newly diagnosed essential hypertension patients. *J Surg Med.* 5(8), 768-771.
- Baladón, L., Rubio-Valera, M., Serrano-Blanco, A., Palao, D.J., & Fernández, A. (2016). Gender differences in the impact of mental disorders and chronic physical conditions on health-related quality of life among non-demented primary care elderly patients. *Qual Life Res.* URL: <https://dx.doi.org/10.1007/s11136-015-1182-5>.
- Casagrande, M., Mingarelli, A., Guarino, A., Favieri, F., Boncompagni, I., & Germanò, R. (2019). Alexithymia: A facet of uncontrolled hypertension. *Int J Psychophysiol.* 146, 180-9.
- Chalah, M.A., & Ayache, S.S. (2017). Alexithymia in multiple sclerosis: A systematic review of literature. *Neuropsychologia* 104, 31-47.
- Chan, G.C., & Koh, D. (2007). Understanding the psychosocial and physical work environment in a Singapore medical school. *Singap Med J*, 48-166.
- De Carvalho, M.V., Siqueira, L.B., Sousa, A., & Jardim, P. (2013). The influence of hypertension on quality of life. *Arq. Bras. Cardiol.* URL: <http://dx.doi.org/10.5935/abc.20130030>.
- Fadli, H., & Syamsidar. (2020). Quality of Life in Patients with Hypertension In public Health Center Sipatana Gorontalo City Using Whoqol Brief Questionnaire. e-mail: fadlihusain@poltekkesgorontalo.ac.id
- Franz, M., Popp, K., Schaefer, R., Sitte, W., Schneider, C., & Hardt, J. (2008). Alexithymia in the German general population. *Soc Psychiatry Psychiatr Epidemiol.* 43(1), 54-62.
- Ghimire, S., Pradhananga, P., Baral, B. K., & Shrestha, N. (2017). Factors associated with health-related quality of life among hypertensive patients in Kathmandu, Nepal. *Frontiers in Cardiovascular Medicine*, (4).

- Guruyipa, M.M., Iyer, K., & Kumar, P.D. (2018). Prevalence of alexithymia among a cohort of well-controlled HIV-infected adolescents and non-HIV-infected adolescents. *Journal of Global Oral Health*; 2(1), 3-8.
- Ha, N. T., Duy, H. T., Le, N. H., Khanal, V., & Moorin, R. (2014). Quality of life among people living with hypertension in a rural Vietnam community. *BMC Public Health*, 14(1), 833.
- Ibrahim, N.K., Mahnashi, M., Al-Dhaheeri, A., Al-Zahrani, B., Al-Wadie, E., Aljabri, M., Al-Shanketi, R., Al-Shehri, R., Al-Sayes, F.M., & Bashawri, J. (2014). Risk factors of coronary heart disease among medical students in King Abdulaziz University, Jeddah, Saudi Arabia. *BMC Public Health*. 14, 411.
- Joffres, M. (2013). Hypertension prevalence, awareness, treatment and control in national surveys from England, the USA and Canada, and correlation with stroke and ischaemic heart disease mortality: A cross-sectional study. *BMJ Open*, 3(8) . e003423, doi: 10.1136/bmjopen-2013-003423.
- Karakas, S.A., Karabulutlu, E.Y., Akyil, R.C., Erdem, N., & Turan, G.B. (2016). An analysis of alexithymia and social support in patients with hypertension and asthma. *J Psychiatric Nurse*, 7(2), 68–74. doi: 10.5505/phd.2016.40085.
- Khalifeh, M., Salameh, P., Hajje, A.A., Awada, S., Rachidi, S., & Bawab, W. (2017). Hypertension in the Lebanese adults: Impact on health related quality of life. *J Epidemiol Glob Health*, URL: <http://dx.doi.org/10.1016/j.jegh.2015.02.003>.
- Lestari, S. K, de Luna X, Eriksson, M, Malmberg, G, Ng, N. (2021). A longitudinal study on social support, social participation, and older Europeans' Quality of Life. *SSM Popul Health*. doi: 10.1016/j.ssmph.2021.100747. PMD: 33644292; PMCID: PMC7892994
- Maddu, S., Sava, L., Nalabolu, M., Naveen, Y., & Padmalatha, K. (2021). Overview on Quality of Life in Patients with Hypertension. *International Journal of Advanced Research in Biological Sciences*. ISSN: 2348-8069. DOI: <http://dx.doi.org/10.22192/ijarbs.2021.08.06.005>.
- McCubbin, J. A., Loveless, J. P., Graham, J. G., Hall, G. A., Bart, R. M., & Moore, D. D. (2014). Emotional dampening in persons with elevated blood pressure: affect dysregulation and risk for hypertension. *Ann Behav Med*, 47(1), 111-9. doi: 10.1007/s12160-013-9526-2.
- Namdar, N.D., & Arıkan, İ. (2020). The relationship between alexithymia, anxiety, depression, and severity of the disease in psoriasis patients. *J Surg Med*, 4(3), 226-9.
- Ogunlana, M.O., Adedokun, B., & Dairo, M.D. (2009). Profile and predictor of health-related quality of life among hypertensive patients in south-western Nigeria. *BMC Cardiovasc Disord*, 8, 1–8.

- Osamor, P.E. (2015). Social support and management of hypertension in south-west Nigeria: cardiovascular topic. *Cardiovasc J Afr* 26(1), 29–33.
- Pagnin, D., & De Queiroz, V. (2015). Comparison of quality of life between medical students and young general populations. *Educ Health*, 28-209.
- Rebeca-Veras, D. V., Daniel, C.V., William, B. G., & Gustavo, G. (2013). Alexithymia and its impact on quality of life in a group of Brazilian women with migraine without aura. *The Journal of Headache and Pain*, doi:10.1186/1129-2377-14-18.
- Taylor, G. J., & Bagby, R. M. (2013). Psychoanalysis and empirical research: the example of alexithymia. *J Am Psychoanal Assoc*, 61(1), 99-133. doi: 10.1177/0003065112474066
- Trevisol, D. J., Moreira, L. B., Kerkhoff, A., Fuchs, S. C., & Fuchs, F. D. (2011). Health related quality of life and hypertension: a systematic review and meta-analysis of observational studies. *J Hypertens*. 29 (2), 179-88.
- Turan, G.B., Aksoy, M., & Çiftçi, B. (2019). Effect of social support on the treatment adherence of hypertension patients. *J Vasc Nurs*, 37(1), 46-51. <https://doi.org/10.1016/j.jvn.2018.10.005>.
- Ward, M., McGarrigle, C. A., & Kenny, R. A. (2019). More than health: Quality of life trajectories among older adults—findings from the Irish longitudinal study of ageing (TILDA). *Quality of Life Research*, 28, 2, 429–439.
- Xu, X., Rao, Y., Shi, Z., Liu, L., Chen, C., & Zhao, Y. (2016). Hypertension Impact on Health-Related Quality of Life: A CrossSectional Survey among Middle-Aged Adults in Chongqing, China. *Int J Hypertens*, URL: <http://dx.doi.org/10.1155/2016/7404957>
- Zhang, Y., Zhou, Z., Gao, J., Wang, D., Zhang, Q., Zhiying, Z. (2016). Health-related quality of life and its influencing factors for patients with hypertension: evidence from the urban and rural areas of Shaanxi Province. China. *BMC Health Serv Res*, URL: <https://dx.doi.org/10.1186/s12913-016-1536>
- Zhang, Y., Zhou, Z., Gao, J., Wang, D., Zhang, Q., Zhiying, Z. (2016). Health-related quality of life and its influencing factors for patients with hypertension: evidence from the urban and rural areas of Shaanxi Province. China. *BMC Health Serv Res*, URL: <https://dx.doi.org/10.1186/s12913-016-1536>