https://doi.org/10.48047/AFJBS.6.Si2.2024.5558-5565

African Journal of Biological Sciences

Prevalence of Aggression Among Individuals with Stage 1 Hypertension

Dipti Rana
Assistant Professor, Department of Psychology, SRM University, Sonipat, Haryana, India
Email ID: dipti772@gmail.com

***Dr. (Prof.) Anjali Midha Sharan**
Dean Research & Development and Dean school of Liberal Arts,
Department of Psychology, G.D Goenka University, Gurugram, Haryana, India
Corresponding Author Email ID: Anjali.midha@gdgu.org

Article Info
Volume 6, Issue Si2,2024
Received: 25 April 2024
Accepted: 01 June 2024
doi: 10.48047/AFJBS.6.
Si4.2024.5558-5565

ABSTRACT
This study examines the correlation between aggression levels and stage 1 hypertension. Utilizing quantitative methods, 120 participants were surveyed using the Buss-Perry Aggression Questionnaire (BPAQ), and their blood pressure measurements were recorded. The analysis reveals a weak positive correlation (r = 0.28) between aggression levels and hypertension stage 1. While suggesting a potential association between higher aggression levels and slightly elevated blood pressure, the modest correlation underscores the complexity of the relationship.
Keywords: aggression, hypertension, Buss-Perry Aggression Questionnaire, correlation, blood pressure.

INTRODUCTION

Two major health issues that affect people all over the world and have a profound impact on both public health and individual well-being are hypertension and aggression. Anger, which is characterized as actions meant to cause pain or injury to other people, can take many different forms, such as physical assault, verbal abuse, or social aggressiveness (Anderson et al., 2000). On the other hand, higher blood pressure readings that consistently exceed normal limits are the hallmark of hypertension, sometimes referred to as high blood pressure, a chronic medical condition.

Psychological and medical research has shown a great deal of interest in the association between levels of aggression and health outcomes. Several studies have shown that high levels of aggression have negative impacts on one's health. For example, studies by Kaplan, J. R., et al. (2013) showed a direct correlation between

aggressive behavior and a higher risk of a number of illnesses, including hypertension. Additionally, according to (Krahé, B. 2020), people who are aggressive by nature often have dysregulated physiological reactions, such as elevated sympathetic nervous system activity, which over time may lead to the development of hypertension.

Hypertension is typically classified into different stages based on the severity of the condition. Stage 1 hypertension, as defined by the American Heart Association (Whelton, P. K., & Williams, B. 2018), it is characterized by systolic blood pressure readings ranging from 130 to 139 mm Hg or diastolic blood pressure readings ranging from 80 to 89 mm Hg. While Stage 1 hypertension may not always present immediate symptoms, it significantly increases the risk of psychological complications if left untreated.

Few studies have explicitly looked at the connection between aggression levels and Stage 1 hypertension, despite the documented links between aggression and psychological health. Comprehending this connection is essential for pinpointing possible risk factors and formulating focused therapies to slow the advancement of hypertension in impacted individuals.

In the current study, the Buss-Perry Aggression Questionnaire (BPAQ) has been employed as a pivotal instrument to assess various dimensions of aggression and their potential association with Stage 1 hypertension. By utilizing the BPAQ, this study aims to delve into the intricate relationship between aggression levels and hypertension risk, exploring how different facets of aggression, including physical aggression, verbal aggression, anger, and hostility, may contribute to the development or exacerbation of Stage 1 hypertension. To investigate the aforementioned concept, the current study uses both qualitative and quantitative methodology. Given this, the following are the study's objectives:

OBJECTIVES

To study the prevalence of aggression among individuals with Stage 1 hypertension. To study the various facets of aggression (Physical, verbal, anger and Hostility)

LITERATURE REVIEW

Tilov et al. (2016) conducted a study to explore the relationship between aggression and chronic diseases, focusing on diabetes and hypertension. While the research sheds light on potential associations between aggression levels and these health conditions, it also highlights several gaps in the existing literature. One such gap lies in the need for further investigation into the specific mechanisms through which aggression may contribute to the development or exacerbation of chronic diseases like diabetes and hypertension. Additionally, there is a lack of studies examining the prevalence of aggression among individuals with Stage 1 hypertension specifically, which underscores the importance of further research in this area. Understanding the relationship between aggression and Stage 1 hypertension could offer valuable insights into preventive and therapeutic interventions for hypertension management. Therefore, there is a need for more focused studies addressing this gap in the literature.

Ward, A., et al. (2008) delve into the relationship between physiological arousal and aggression. Their study supports the attentional myopia model, suggesting that arousal may lead to disinhibited behavior, especially in situations where pressures to aggress are salient. This research offers insights into how situational factors influence aggressive behavior in individuals. Ward et al.'s findings underscore the role of physiological arousal in modulating aggressive responses, highlighting the importance of considering situational factors in understanding aggressive behavior patterns. The study relates the prevalence of aggression with situations.Culbertson, F. M., & Spielberger, C. D. (2013) Culbertson and Spielberger explore anger expression, control, depression, and blood pressure among high school students. Their study sheds light on gender and family constellation influences on these psychological and physiological factors. The research emphasizes the complex interplay between anger expression, depression, and blood pressure, particularly in adolescent health. Culbertson and Spielberger's work highlight the need for a holistic understanding of psychological and physiological factors in adolescent health, emphasizing the importance of addressing anger expression and depression alongside blood pressure management. Hostile behaviour or hostility towards others has been shown in this study as an outcome of high blood pressure among other factors.

Louise, S., et al. (2012) investigate the impact of aggressive behavior on psychological risk factors during childhood. Their longitudinal study reveals gender-specific associations between aggressive behavior and BMI trajectories, emphasizing the importance of early behavioral intervention in mitigating long-term psychological risks. Louise et al.'s research underscores the significance of early intervention in addressing aggressive behavior patterns, thereby reducing long-term psychological risks, particularly in childhood.

Mushtaq and Najam (2014) conducted a study exploring the relationship between anger and hypertension, shedding light on anger as a psychological risk factor for hypertension. The researchers reviewed existing literature on the subject and found evidence suggesting that heightened levels of anger can contribute to the development and exacerbation of hypertension. Several studies have demonstrated a positive correlation between anger expression, anger suppression, and blood pressure levels, highlighting the importance of psychological factors in the pathogenesis of hypertension. Furthermore, Mushtaq and Najam (2014) discussed the potential mechanisms underlying this relationship, including the physiological stress response triggered by anger and its long-term effects on cardiovascular health.

Comparing these studies reveals intriguing insights into the intersection of mental and physical health and their implications for holistic interventions. Each study offers unique perspectives on the relationship between aggression and hypertension, shedding light on different aspects of this complex phenomenon. While some focus on physiological mechanisms and treatment strategies, others explore psychological factors and long-term health outcomes.

Integrating findings from these diverse perspectives can inform comprehensive interventions that address both mental and physical health aspects, ultimately promoting holistic well-being and improved quality of life for individuals at risk of aggression and hypertension. Further research and interdisciplinary collaborations are essential to unravelling the intricacies of this multifaceted relationship and developing evidence-based interventions tailored to diverse populations.

RESEARCH METHODOLOGY

Convenience sampling, a non-probabilistic sampling technique in which people are chosen based on their accessibility and willingness to participate, was used to select participants for this study. Participants' aggression levels, as measured by the Buss-Perry Aggression Questionnaire (BPAQ), and the prevalence of Stage 1 hypertension are the two main variables being investigated. The study recruited 120 people in total from a variety of community settings. The BPAQ, a self-report questionnaire with 29 items intended to evaluate several aspects of aggression, such as verbal aggression, physical aggression, rage, and hostility, was filled out by participants. After completing the BPAQ, standardized techniques were used to acquire the blood pressure readings of the individuals. Using systolic blood pressure measurements between 130 and 139 mm, stage 1 hypertension was determined in accordance with accepted criteria.

4.0 Data Analysis

Table 1: Showing BP and BPAQ scores of Respondents

BP	BPAQ	BP (High/Low)	BPAQ (Low/Medium)
124/78	65	Low	Medium
135/82	72	High	Medium
132/85	47	High	Medium
132/82	52	High	Medium
129/75	38	High	Medium
134/82	74	High	Medium
129/76	46	High	Medium
120/76	67	Low	Medium
132/85	52	High	Medium
132/84	72	High	Medium

125/78	29	Low	Low
138/82	36	High	Low
135/80	64	High	Medium
136/82	36	High	Low
131/78	28	High	Low
131/78	74	High	Medium
129/74	47	High	Medium
122/76	36	High	Low
132/78	87	High	High
136/84	53	High	Medium
127/74	74	High	Medium
131/82	37	High	Low
127/78	61	High	Medium
131/82	43	High	Medium
124/76	58	High	Medium
134/82	41	High	Medium
137/86	94	High	High
138/85	57	High	Medium
123/74	34	High	Low
121/75	62	High	Medium
126/72	29	High	Low
136/82	51	High	Medium
131/81	47	High	Medium
128/76	88	High	High
131/74	93	High	High
126/75	49	High	Medium
131/77	62	High	Medium
135/80	36	High	Low
137/85	73	High	Medium
132/83	92	High	High
127/73	38	High	Low
130/78	29	High	Low
125/76	37	High	Low
124/79	62	High	Medium
122/81	86	High	High
122/82	59	High	Medium
134/82	83	High	High
132/81	78	High	Medium
134/82	61	High	Medium
131/78	73	High	Medium
134/82	94	High	High
132/81	64	High	Medium
130/78	62	High	Medium
133/84	86	High	High
132/85	91	High	High
134/79	62	High	Medium
131/80	87	High	High
134/83	92	High	High
136/82	96	High	High
128/76	63	High	Medium
132/78	67	High	Medium
129/80	61	High	Medium
135/82	81	High	Medium

128/84	74	High	Medium
137/82	86	High	High
136/84	74	High	Medium
134/85	79	High	Medium
137/83	65	High	Medium
134/84	60	High	Medium
132/84	92	High	High
131/82	83	High	High
136/96	75	High	Medium
130/84	72	High	Medium
132/87	86	High	High
135/86	83	High	High
132/85	89	High	High
137/85	76	High	Medium
135/83	78	High	Medium
137/82	53	High	Medium
132/82	67	High	Medium
138/82	74	High	Medium
132/85	59	High	Medium
135/85	94	High	High
132/82	83	High	High
128/84	60	High	Medium
133/83	72	High	Medium
124/86	28	High	Low
124/86	25	High	Low
122/83	38	High	Low
120/85	45	High	Medium
124/85	36	High	Low
125/84	39	High	Low
124/86	47	High	Medium
124/87	45	High	Medium
123/86	48	High	Medium
120/85	53	High	Medium
123/87	47	High	Medium
120/87	57	High	Medium
124/88	54	High	Medium
124/85	53	High	Medium
125/89	56	High	Medium
124/86	54	High	Medium
125/87	57	High	Medium
124/87	54	High	Medium
120/89	53	High	Medium
120/86	49	High	Medium
127/87	37	High	Low
128/86	52	High	Medium
128/89	53	High	Medium
125/85	65	High	Medium
125/85	60	High	Medium
127/85	57	High	Medium
129/87	43	High	Medium
124/87	39	High	Low
125/86	36	High	Low

126/89	73	High	Medium
128/87	64	High	Medium
125/86	62	High	Medium
127/87	38	High	Low
128/89	29	High	Low
128/89	35	High	Low
128/87	31	High	Low
128/89	48	High	Medium
129/89	46	High	Medium
125/86	43	High	Medium
125/86	52	High	Medium

Table 2: Category of Aggression based on BPAQ scores

Aggression Level	**Range**	**Count**
Low Aggression	24-80	98
Medium Aggression	81-120	22
High Aggression	121-145	0

The table presents the distribution of aggression levels based on BPAQ scores among the participants.

- Low Aggression: BPAQ scores falling within the range of 24 to 80 are categorized as low aggression. There are 98 participants whose BPAQ scores fall into this category, indicating that a majority of the participants have lower levels of aggression according to the BPAQ assessment.
- Medium Aggression: BPAQ scores falling within the range of 81 to 120 are categorized as medium aggression. There are 22 participants whose BPAQ scores fall into this category, suggesting that a smaller proportion of participants exhibit medium levels of aggression according to the BPAQ assessment.
- High Aggression: BPAQ scores falling within the range of 121 to 145 are categorized as high aggression. However, in this study, there are no participants whose BPAQ scores fall into this category, indicating that none of the participants exhibited high levels of aggression according to the BPAQ assessment.

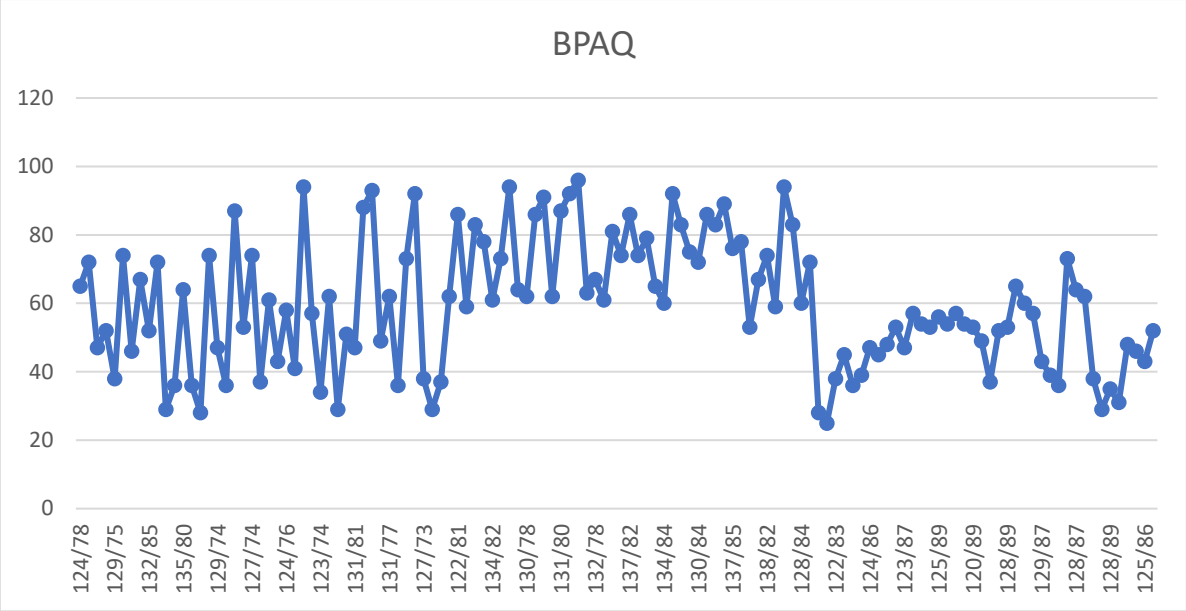

Fig 1. Correlation between Aggression and Hypertension Stage 1

Table 3 Correlation between Aggression and Hypertension Stage 1

	Hypertension	**Aggression**	
Hypertension	**0**		
Aggression	**0.28**	**0**	

The correlation between hypertension stage 1 and aggression levels is denoted as 0.28. This value indicates a positive correlation between these two variables, but it's a relatively weak correlation. A correlation coefficient of 0.28 suggests that there is a positive relationship between hypertension stage 1 and aggression levels, but it's not very strong.

CONCLUSION

The study investigated the relationship between aggression levels and stage 1 hypertension. Through quantitative analysis using the Buss-Perry Aggression Questionnaire (BPAQ) and blood pressure measurements, the study explored how aggression levels might correlate with hypertension stage 1. The findings reveal a weak positive correlation ($r = 0.28$) between aggression levels and hypertension stage 1. This suggests that individuals with higher aggression levels may tend to exhibit slightly elevated blood pressure levels characteristic of stage 1 hypertension. However, it's crucial to note that this correlation is relatively modest, indicating that aggression alone may not be a strong predictor of hypertension stage 1. These results underscore the complexity of the relationship between psychological factors like aggression and physiological conditions such as hypertension. While the study provides valuable insights into potential associations between these variables, further research is warranted to elucidate the underlying mechanisms and causal pathways. While there appears to be a weak positive correlation between aggression levels and hypertension stage 1, additional studies with larger sample sizes and longitudinal designs are needed to better understand the nature of this relationship.

These studies may help develop more focused interventions to lower the risk of hypertension in those who exhibit elevated levels of aggression, which would eventually lead to better health and well-being. The study also emphasizes how important anger is as a psychological risk factor for hypertension. The extant body of

literature highlights the correlation between elevated levels of anger expression and repression and blood pressure, underscoring the psychological variables that contribute to the onset and aggravation of hypertension. Therefore, there is a marginally favorable connection between stage 1 hypertension and aggressive characteristics.

REFERENCES

1. Anderson, C. A., Anderson, K. B., Dorr, N., DeNeve, K. M., & Flanagan, M. (2000). Temperature and aggression. In Advances in experimental social psychology (Vol. 32, pp. 63-133). Academic Press.
2. Culbertson, F. M., & Spielberger, C. D. (2013). Relations of anger expression to depression and blood pressure in high school students. In *Stress And Emotion* (pp. 193-202). Taylor & Francis.
3. Kaplan, J. R., Botchin, M. B., & Manuck, S. B. (2013). Animal models of aggression and cardiovascular disease. In Anger, hostility, and the heart (pp. 127-148). Psychology Press.
4. Krahé, B. (2020). The social psychology of aggression. Routledge.
5. Louise, S., Warrington, N. M., McCaskie, P. A., Oddy, W. H., Zubrick, S. R., Hands, B., ... & Beilin, L. J. (2012). Associations between aggressive behaviour scores and cardiovascular risk factors in childhood. *Pediatric obesity*, *7*(4), 319-328.
6. Tilov, B., Semerdzhieva, M., Bakova, D., Tornyova, B., & Stoyanov, D. (2016). Study of the relationship between aggression and chronic diseases (diabetes and hypertension). *Journal of Evaluation in Clinical Practice*, *22*(3), 421-424.
7. Mushtaq, M., & Najam, N. (2014). Anger as a Psychological Risk Factor of Hypertension. *Pakistan Journal of Psychological Research*, *29*(1).
8. Vizza, C. D., Lang, I. M., Badagliacca, R., Benza, R. L., Rosenkranz, S., White, R. J., ... & Matsubara, H. (2022). Aggressive afterload lowering to improve the right ventricle: a new target for medical therapy in pulmonary arterial hypertension?. *American journal of respiratory and critical care medicine*, *205*(7), 751-760.
9. Ward, A., Mann, T., Westling, E. H., David Creswell, J., Ebert, J. P., & Wallaert, M. (2008). Stepping up the pressure: Arousal can be associated with a reduction in male aggression. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *34*(6), 584-592.
10. Whelton, P. K., & Williams, B. (2018). The 2018 European society of cardiology/European society of hypertension and 2017 American college of cardiology/American heart association blood pressure guidelines: More similar than different. Jama, 320(17), 1749-1750.