



## TYPE A BEHAVIOR PATTERN IS ASSOCIATED WITH HIGHER LEVELS OF PHYSICAL ACTIVITY AMONG MALE YOUNG ADULTS: AN EX POST FACTO ANALYSIS

Harmandeep Singh<sup>1</sup>, Sukhdev Singh<sup>2</sup>, Mandeep Singh<sup>3</sup>

<sup>1</sup>JRF, Department of Physical Education,  
Guru Nanak Dev University, Amritsar, Punjab, India

<sup>2</sup>Professor, Department of Physical Education,  
Guru Nanak Dev University, Amritsar, Punjab, India

<sup>3</sup>Assistant professor, Department of Physical Education,  
Guru Nanak Dev University, Amritsar, Punjab, India

### Abstract:

**Background:** Previous research regarding the relationship between personality traits and physical activity has been mainly focused on big five personality traits whereas the studies regarding Type A behavior pattern in relation to physical activity are scarce. The present study is aimed to relate personality types and PA levels.

**Methods:** To attain the objective, a total of 132 young male adults were recruited and asked to fill two questionnaires: Global Physical Activity Questionnaire and a personality assessment scale. Associations between the categorical variables were examined by applying the Chi-Square test.

**Results:** Findings revealed that associations between personality types and physical activity levels were statistically significant ( $p < .05$ ).

**Conclusions:** Participants having Type A behavior pattern had high levels of physical activity whereas Type B personalities were largely low active. Furthermore, participants with balanced personality type were found to have moderate to high activity levels.

**Keywords:** physical activity, personality, type A, type B, adults

### 1. Introduction

As physical activity is a proven preventive measure against the health-related issues, it is vital to promote physical activity as public health priority (Rhodes and Smith, 2006).

---

<sup>1</sup> Correspondence: email [harmandeep91@gmail.com](mailto:harmandeep91@gmail.com)

Participation in regular physical activity has been associated with a large number of factors broadly classified as environmental, personal and social (Trost et al, 2002). Existing literature has linked both physical inactivity and Type A behavior pattern with coronary heart diseases (Bijnen et al, 1994; Powell et al, 1987; Shaper and Wannamethee, 1991; Friedman and Rosenman, 1960). The theory of the relationship of personality with coronary heart disease (CHD) initially came to prominence about 50 years ago with the notion of Type A behavior, an amalgam of edginess, hostile conduct, competitiveness and domination. Although this concept was proved erratic in later research (Petticrew et al 2012), regardless of this, it was a significant contribution to scientific literature. It has been argued that the significance of personality has been undervalued in the previous exploration by the failure to establish health behavior norms and ignoring the significant personality dimensions, for instance, conscientiousness and agreeableness, when investigating health behavior patterns (Booth-Kewley and Vickers, 1994). However, research has discovered links between specific personality patterns and performance-based effects such as scholarly and professional success and between personality traits and health-related outcome (Mark et al, 2014). The relationship between aerobic physical fitness and personality traits had been observed about four decades back (Sharp and Reilley, 1975). Recent studies of sitting behavior among adults have discovered that low levels of conscientiousness, extraversion, and openness and high levels of neuroticism as significant predictors of more sedentary behavior in leisure-time (Ebstrup et al, 2013). Moreover, it has been reported in the literature that even physical activity can alter the personality traits (Allen and Laborde, 2014). In the Indian context, few studies have been conducted and that were restricted to associating socio-demographic patterns (Singh and Singh, 2017). The availability of literature regarding linkage physical activity level and type A behavior pattern is scarce. Hence, this study is an attempt to provide baseline findings regarding associations between the aforementioned two variables.

## **2. Methods and materials**

The present study recruited 132 young male adults of age 19-30 years from Guru Nanak Dev University, Amritsar, India. The participants were asked to fill two questionnaires for the purpose of assessing their personality type and physical activity level. A scale adapted from Bortner & Rosenman (1967) and Powell (1992) was administered to assess Type A or B behavior pattern. This scale contains 13 items regarding behavior pattern, each item has a score of 0 to 10. A total score of <70 indicate Type B personality, 70 to 100 balanced personality type and >100 as Type A personality.

Meanwhile, the WHO recommended Global Physical Activity Questionnaire (Version 2) was used for the purpose of assessing the physical activity status. Physical activity was described in quantitative terms as MET-min/week (Metabolic equivalent of tasks). Physical activity levels were determined on the basis of meeting a certain number of MET-min/week that is as follows:

- Low active – less than 600 MET-min/week;
- Moderately active – more than 600 MET-min/week but less than 3000 MET-min/week;
- Highly active – more than 3000 MET-min week.

Since the data acquired through two aforementioned questionnaires was categorical, the Pearson’s Chi-Square test was employed to assess the association between the independent variable personality types and dependent variable physical activity level. The Alpha level was put at 0.05 levels. IBM SPSS 21 was utilized to analyze the data.

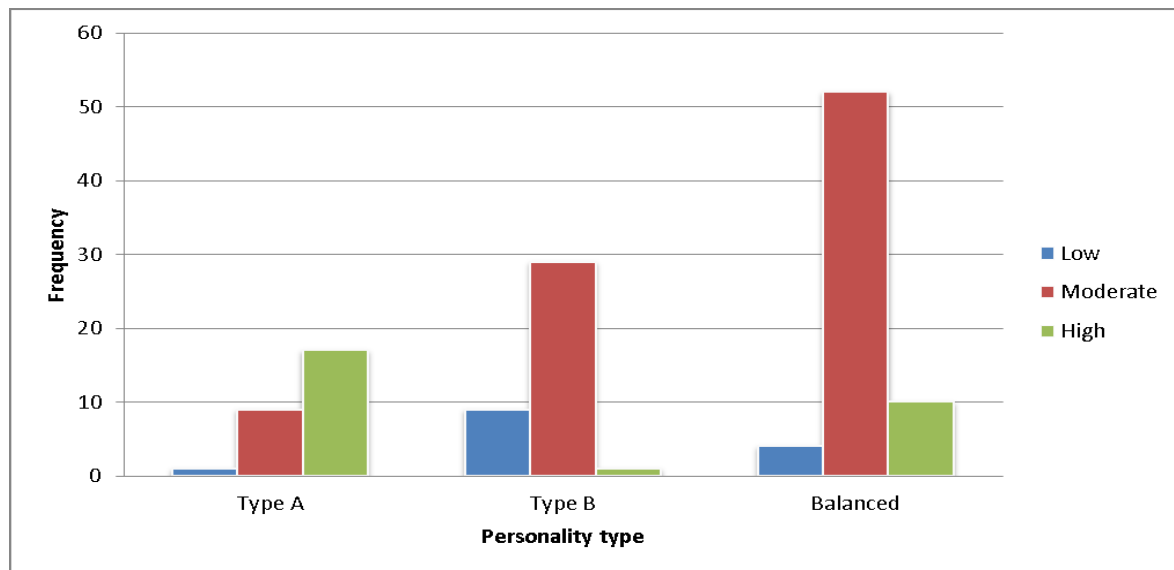
### 3. Results

**Table 1:** Contingency table of physical activity levels in relation to personality types

Variable	Physical activity level				p-value
	Low	Moderate	High	Total	
Personality type	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	
Type A	1 (3.7)	9 (33.3)	17 (63)	27 (20.5)	0.001*
Type B	9 (23.1)	29 (74.4)	1 (2.6)	39 (29.5)	
Balanced	4 (6.1)	52 (78.8)	10 (15.2)	66 (50.0)	
Total	14 (10.6)	90 (68.2)	28 (21.2)	132 (100.0)	

\*Significant at 0.05 levels

Table 1 shows the frequencies of physical activity levels of young male adults in relation to personality types. The present table demonstrates that only 3.7% of participants having Type A personality were low active whereas 63% were found to be highly active by achieving the cut points of 3000 MET-min per week. Conversely, the majority of the participants having Type B behavior pattern were observed as low and moderately active by 23.1 and 74.4 percent respectively, whilst only 2.6% were found to be highly active. Meanwhile, participants having balanced personality traits tend to be moderate to highly active. The Pearson’s Chi-square analysis revealed statistically significant associations between personality types and physical activity levels among male young adults ( $p < .05$ ).



**Figure 1:** Graphical depiction of physical activity levels with respect to personality types

#### 4. Discussion

The study was aimed to examine the association between Type A behavior pattern and physical activity levels. It was found that higher frequencies of subjects who have Type A personality were largely engaged in higher levels of physical activity. Conversely, the participants with Type B personality tend to have low to moderate physical activity levels as only 2.1% were engaged in high levels of physical activity. A similar study on older minority women had reported a positive relationship between Type A behavior pattern and daily living activity (Eason et al, 2004). A similar study had reported that personality traits have a partial association with physical activity levels that result in enhanced muscle strength (Tolea et al, 2012). Furthermore, a study revealed that neuroticism was negatively related to physical activity (Wilson and Dishman, 2014) and it is argued that Type A personality own similar traits that neurotic people have (Jenkins, 1976). A number of other studies also had related the personality traits with mobility levels (Chapman et al, 2007; Jang et al, 2003; Jang et al, 2002; Kempen et al., 1999; Murberg et al, 1997). Furthermore, our study found that the majority of participants with balanced personality were moderate to highly active as very fewer counts (6.1%) showed low activity levels. A previous study had found that emotional stability and conscientiousness motivate intrinsically for exercise (Bowman, 2015). Nevertheless, both emotional stability and conscientiousness may be considered as the traits of balanced personality. Findings of this study are largely in agreement with the study of Rhodes & Pfaeffli (2012). Furthermore, this study refutes the hypothesis of Friedman and Rosenman (1960) that Type A personalities would be more prone to coronary diseases by providing the rationale that Type A behavior pattern is positively

associated with high level of physical activity and coronary risk is inversely related to high level of physical activity (Bijnen et al, 1994).

## 5. Conclusions

In a nutshell, our study revealed that people having Type A behavior pattern along with balanced personality type are more likely to be physically active whereas Type B behavior pattern is associated with low levels of physical activity.

## References

1. Bortner R.W. and Rosenman R.H., 1967. The measurement of pattern A behavior. *J. chron. Dis.*, 20, 525.
2. Chapman B., Duberstein P., Lyness J.M., 2007. Personality traits, education, and health-related quality of life among older adult primary care patients. *Journals of Gerontology Series B, Psychological Sciences and Social Sciences*. 62(6): 343–352.
3. Jang Y., Haley W.E., Mortimer J.A. and Small B.J., 2003. Moderating effects of psychosocial attributes on the association between risk factors and disability in later life. *Aging Ment Health*. 7(3):163–170.
4. Jang Y., Mortimer J.A., Haley W.E., Graves A.B., 2002. The role of neuroticism in the association between performance-based and self-reported measures of mobility. *Journal of Aging and Health*. 14(4); 495–508.
5. Kempen G.I., van Heuvelen M.J., van Sonderen E., van den Brink R.H., Kooijman A.C., Ormel J., 1999. The relationship of functional limitations to disability and the moderating effects of psychological attributes in community-dwelling older persons. *Social Science and Medicine*. 48(9): 1161–1172.
6. Allen M.S. and Laborde S., 2014. The Role of Personality in Sport and Physical Activity. *Current Directions in Psychological Science*. 23(6) 460– 465.
7. Murberg T., Bru E., Svebak S., Aarsland T. and Dickstein K. 1997. The role of objective health indicators and neuroticism in perceived health and psychological well-being among patients with chronic heart failure. *Personality and Individual differences*. 22(6): 867–875.
8. Rhodes R.E. and Smith N.E.I., 2006. Personality correlates of physical activity: a review and meta-analysis. *Br J Sports Med*. 40(12): 958–965. doi: 10.1136/bjism.2006.028860.
9. Trost S.G., Owen N., Bauman A. *et al.*, 2002. Correlates of adult's participation in physical activity: review and update. *Med Sci Sports Exerc*. 34; 1996–2001.

10. Sharp M.W., Reilley R.R., 1975. The relationship of aerobic physical fitness to selected personality traits. *J Clin Psychol.* 31(3): 428-30.
11. Booth-Kewley S. and Vickers R.R. Jr., 1994. Associations between major domains of personality and health behavior. *J Pers.* 62(3): 281-98.
12. Ebstrup, J.F., Aadahl M., Eplöv L.F., Pisinger C. and Jørgensen T., 2013. Cross-sectional associations between the five factor personality traits and leisure-time sitting-time: The effect of general self-efficacy. *Journal of Physical Activity & Health.* 10; 572–580.
13. Bijnen F.C.H., Caspersen C.J. and Mosterd W.L., 1994. Physical inactivity as a risk factor for coronary heart disease: a WHO and International Society and Federation of Cardiology position statement. *Bulletin of the World Health Organization.* 72(1); 1-4.
14. Powell L.H., 1992. The cognitive underpinnings of coronary-prone behaviors. *Cognitive Therapy and Research.* 16; 123–142.
15. Powell K.E., Thompson PD, Caspersen C.J. et al., 1987. Physical activity and the incidence of coronary heart disease. *Annual review of public health.* 8: 253-287.
16. Singh H. and Singh S., 2017. Prevalence, patterns and associated factors of Physical Activity in Indian University students. *European Journal of Physical Education and Sport Science.* 3(10)76-87.
17. Shaper A.G. and Wannamethee G., 1991. Physical activity and ischaemic heart disease in middle-aged British men. *British heart journal.* 66; 384-394.
18. Friedman M. and Rosenman R.H., 1960. Overt behavior pattern in coronary disease. Detection of overt behavior pattern A in patients with coronary disease by a new psychophysiological procedure. *JAMA*19601731320–1325.
19. Petticrew M., Lee K. and McKee M., 2012. Type A behavior pattern and coronary heart disease: Philip Morris's "Crown Jewel" *Am J Public Health.* 102(11); 2018–2025.
20. Tolea I.M., Terracciano A, Simonsick, E.M., Metter, E.J., Costa, P.T. and Ferrucci L, 2012. Associations between personality traits, physical activity level, and muscle strength. *J Res Pers.* 46(3): 264–270.
21. Bowman K.M., 2015. The Relationship between Personality Type and Exercise Motivation. Online Theses and Dissertations. 343. <http://encompass.eku.edu/etd/343>.
22. Rhodes R.E. and Pfaeffli L.A., 2012. Personality and physical activity. In E. O. Acevedo (Ed.), *The Oxford handbook of exercise psychology.* 195–223; New York: Oxford University Press.

23. Eason K.E., Masse L.C., Tortolero S.R. and Kelder S.H., 2002. Type A behavior and daily living activity among older minority women. *Journal of Women's Health & Gender-Based Medicine*. 11; 137–146.

Creative Commons licensing terms

Authors will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Physical Education and Sport Science shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflict of interests, copyright violations and inappropriate or inaccurate use of any kind content related or integrated on the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).