General Psychological Profile in Malaysia University Students Who Practise Archery

Suthahar Ariaratnam[1,2*], Adlina Suleiman[3], Ambigga Devi Krishnapillai[4] and Nurul Atiqah Amran[5]

[1]*Discipline of Psychological and Behavioural Medicine, Faculty of Medicine, Universiti Teknologi MARA, Kampus Selayang, Jalan Prima Selayang 7, 68100 Batu Caves, Selangor, Malaysia.*
[2]*MusTReWell, Brain and Neuroscience Communities of Research, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia.*
[3]*Department of Public Health, Faculty of Medicine and Defence Health, National Defence University of Malaysia, Sg Besi 57000 Kuala Lumpur, Malaysia.*
[4]*Department of Primary Care Medicine, Faculty of Medicine and Defence Health, National Defence University of Malaysia, Sg Besi 57000 Kuala Lumpur, Malaysia.*
[5]*Faculty of Sport Science and Recreation, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia.*

Authors' contributions

Article Information

Original Research Article

ABSTRACT

Aims: To determine the psychological profile of archers among undergraduate students from public universities.
Study Design: Descriptive, cross-sectional multi-centre study.
Setting: Archers in four Malaysian public Universities.
Participants: A total of 150 archers active in this sport were recruited (male, n=72; female, n=78).

_____

*Corresponding author: E-mail: suthaharariaratnam@yahoo.com.au;

Main Outcome Measures: The validated Depression, Anxiety and Stress 21 questionnaire (DASS 21) and sociodemographic characteristics were administered.

Results: Of the total 150 patients surveyed, depression, anxiety and stress were found in 48 (32%), 90 (60%) and 6 (4%), respectively. ANOVA revealed that gender, caregiver, parents' education level, parents' occupation and type of dwelling were significantly associated with depression as well as number of siblings, caregiver, parents' education level, parents' occupation and type of dwelling were significantly associated with anxiety whilst number of siblings, caregiver, parents' education level, parents' occupation and type of dwelling were significantly associated with stress.

Conclusions: Depression, anxiety, stress and sociodemographic variables were essential correlates of anxiety and depression among archers. Incorporating psychological profile assessment among sporting activity like archery may improve health outcomes.

1. INTRODUCTION

Archery is an activity that utilises bow to propel arrows. It is a popular sport especially among university students. This sport entails high focusing ability and requires utmost composure in order to achieve greater accuracy for a shot at target. The practice of archery has been declining over the years though it remains in use for both sport and hunting.

In order for any sports to excel and subsequently bringing in successful performance is much reliant on not only physical talent but also an optimal psychological or mental skill [1-4].

According to Hardy et al. [5] pressure and anxiety is an integral part of sports, particularly among elite athletes. It was reported that over 50 of consultations among athletes at an Olympic festival were related to stress or anxiety related problems [6].

In addition, regulating and aptly expressing the experience of emotion certainly aid in the performance of athletes [7].

Depression and frustration with sport had led many to relinquish sport in order to be eased of these pains. On the contrary, they were unwilling to give up the sport since it has such an impact on their lives as well as identity and had served as an emotional outlet during stressful occasions. Thus, factors and reasons need to be ascertained to explain this crucial phenomenon.

Moreover, many studies had explored psychological profile in the context of team sports [1,3,4,8,9,10,11]. However, there is scarcity of data pertaining to an individual sport in particular archery. To the best of our knowledge, studies have yet to investigate psychological profile among archers in Malaysia. Hence, this survey was conducted to investigate depression, anxiety and stress symptoms among archers in four different public universities in Malaysia.

2. METHODS

2.1 Research Design

This study was cross sectional in design involving four public universities namely Universiti Teknologi MARA (UiTM), Universiti Pertahanan Nasional Malaysia (UPNM), Universiti Putra Malaysia (UPM) and Universiti Sultan Zainal Abidin (UniSZA). All students engaged in archery hailing form the four universities were selected.

Sample size was determined using the formula by Krejcie & Margan [12] as 108 subjects. Therefore, the target population eventually ascertained for this study was 150 subjects.

2.2 Instruments

Depression, anxiety and stress were measured using a self-administered questionnaire, the short version of DASS. This instrument is not diagnostic, but can indicate the presence of depression, anxiety and stress symptoms in an individual. The short version has 21 items, consisting of 7 items per scale (depression, anxiety and stress). The DASS has been shown to have high internal consistency. The Malay or Bahasa Malaysia validated DASS 21 [13] was used in this study. Respondents were asked to rate their experience on each state over the past week on a 4-point severity scale ranging from 0 (does not apply to me), to 3 (applies to me most or all of the time). Scores for each scale were

then were summed and subsequently reported as being normal or abnormal for the various subscales according to the DASS Manual [14].

The DASS 21 was preferred over the longer version of 42 questions as it is not only easy and short to administer but also less time consuming. Hence, reduces respondent burden and subsequently respondent fatigue.

Socio-demographic and other relevant information were collected such as university status of archers, gender, number of sibling, participants' caregiver, education level of parents, parents' occupation and types of dwelling.

2.3 Data Collection

Upon receiving approval from the ethic committee, UiTM, face-to-face interview was conducted with subjects to explain the purpose of the study and obtain consent.

2.4 Data Analysis

Data was analyzed using Statistical Package of Social Science (SPSS) software version 19.0 and significance level was set at $p < 0.05$. Mean and Standard Deviation (SD) were calculated for each depression, anxiety and stress variables. Analysis of variance (ANOVA) was used to determine the depression, anxiety and stress symptoms against sociodemographic profile.

3. RESULTS

This was a cross sectional study that involved 150 archers. Table 1 shows the distribution of the socio-demographic profile of archers. Majority of them originated from UiTM (51.3%), were females (52.0%), had 3 siblings (28.7%) and had parents as their caregiver (96%) who had achieved secondary school education (60%). In term of occupation of their parents, majority had a careers related to administration (52%).

Table 2 represents the mean scores of the various scales for DASS. The mean score was

highest for stress (9.1) followed by anxiety (9.1) and depression subscales (8.8).

Table 3 depicts the frequency of depression, anxiety and stress among archers. Percentages of archers who were depressed, anxious and stressed were 32%, 60% and 4% respectively.

Table 1. Frequency distribution of archers by socio-demographic profile

Socio-demographic variables		n	%
University status of participants	UiTM	77	51.3
	UPNM	17	11.3
	UNISZA	22	14.7
	UPM	34	22.7
Gender	Male	72	48.0
	Female	78	52.0
Number of siblings	≤ 1	18	12.0
	2	35	23.3
	3	43	28.7
	4	19	12.7
	≥ 5	35	23.3
Caregiver	Parents	144	96.0
	Grandparents	6	4.0
Parents' education level	Secondary	90	60.0
	College	30	20.0
	University	30	20.0
Parents' occupation	Professional	18	12.0
	Teacher	12	8.0
	Administration	78	52.0
	Labourer	42	28.0
Type of dwelling	Bungalow	12	8.0
	Village home	6	4.0
	Semi-detached	72	48.0
	Terrace	54	36.0
	Condominium	6	4.0

Table 4 describes the association of depression, anxiety and stress with socio-demographic variables. Female archers had higher depression score compared to male. Archers who had grandparents as caregiver exhibited higher depression in comparison to those who had parents as their caregiver. Archers whose parents had attained secondary and/or college level of education reported higher depression compared to those who had attained tertiary degree. In terms of parents' occupation, archers

Table 2. Mean DASS score for the various subscales

	N	Minimum	Maximum	Mean	Standard deviation
Depression	150	3.00	18.00	8.8	3.2
Anxiety	150	2.00	16.00	9.1	3.6
Stress	150	4.00	17.00	9.1	2.9
Total	150	10.00	51.00	27.0	8.1

3

who had parents as teachers showed higher depression in comparison to those whose parents were labourer. Profiling of type of dwelling, archers who lived in bungalow revealed greater depression compared to those who lived in semi-detached homes.

Table 3. Frequency of depression, anxiety and stress among archers

Psychological profile		n	%
Depression	Normal	102	68.0
	Depressed	48	32.0
Anxiety	Normal	60	40.0
	Anxious	90	60.0
Stress	Normal	144	96.0
	Stressed	6	4.0

In addition, archers with three siblings portrayed higher anxiety compared to those with two siblings. Whereas archers who had grandparents as caregiver exhibited higher anxiety in comparison to those who had parents as their caregiver. While archers whose parents had attained college level of education reported

higher anxiety compared to those who had attained tertiary degree. Parents' occupation profile showed that archers whose parents being teachers had higher anxiety in comparison to those whose parents were professional. Pertaining to type of dwelling, archers who lived in bungalow revealed greater anxiety compared to those who lived in semi-detached homes.

Furthermore, archers with two siblings portrayed higher stress compared to those with three siblings. While archers who had grandparents as caregiver exhibited higher stress in comparison to those who had parents as their caregiver. While archers whose parents had attained college level of education reported higher stress compared to those parents who had attained secondary education. Parents' occupation profile showed that archers whose parents being teachers had higher stress in comparison to those whose parents were professional. Pertaining to type of dwelling, archers who lived in semi-detached homes revealed greater stress compared to those who lived in terrace houses.

Table 4. ANOVA for depression, anxiety and stress by socio-demographic variables

Socio-demographic variables		Depression		p	Anxiety		p	Stress		p
		Mean	SD		Mean	SD		Mean	SD	
University status of participants	UiTM	8.8	3.2	0.811	9.0	3.7	0.989	9.1	2.9	0.897
	UPNM	9.5	2.5		9.3	3.8		9.2	3.2	
	UNISZA	8.5	2.8		9.1	3.4		8.7	2.5	
	UPM	8.7	3.8		9.2	3.8		9.3	3.0	
Gender	Male	8.2	3.4	0.019	9.5	3.6	0.190	8.7	2.5	0.063
	Female	9.4	2.9		8.7	3.7		9.5	3.2	
Number of siblings	≤ 1	9.3	0.5	0.239	7.8	3.9	<0.001	9.0	3.0	0.004
	2	9.1	1.9		10.1	2.9		10.0	1.8	
	3	9.3	3.9		10.6	3.7		9.7	3.3	
	4	7.53	1.90		7.1	3.0		7.2	2.6	
	≥ 5	8.3	4.3		8.0	3.5		8.6	2.8	
Caregiver	Parents	8.4	2.6	<0.001	8.8	3.4	<0.001	8.8	2.4	<0.001
	Grandparents	18.0	0.0		16.0	0.0		17.0	0.0	
Parents' education level	Secondary	9.2	2.3	0.008	8.2	3.2	<0.001	9.1	2.4	<0.001
	College	9.2	4.8		11.8	3.4		11.0	3.3	
	University	7.2	3.1		9.2	3.9		7.4	2.8	
Parents' occupation	Professional	9.7	5.1	<0.001	11.0	1.7	<0.001	9.7	2.1	<0.001
	Teacher	13.5	4.7		13.5	2.6		10.5	6.8	
	Administration	7.9	2.2		8.9	3.8		9.6	2.3	
	Labourer	8.9	1.6		7.4	3.0		7.6	1.6	
Type of dwelling	Bungalow	12.5	3.7	<0.001	12.0	1.0	<0.001	8.0	4.2	<0.001
	Village home	3.0	0.0		2.0	0.0		5.0	0.0	
	Semi-detached	9.5	3.2		9.7	3.4		10.6	2.8	
	Terrace	7.8	1.9		9.0	3.2		8.1	1.5	
	Condominium	8.0	0.0		4.0	0.0		7.0	0.0	

SD: Standard Deviation

4

4. DISCUSSION

The aim of this survey was to determine the psychological profile of archers among students from public universities in Malaysia. The frequency of depression, anxiety and stress among them were 32%, 60% and 4% respectively. Anxiety being the highest at 60% was not an unexpected outcome as participants were representing their respective states in the SUKMA games or Malaysian games at the time this study was conducted.

Our finding that archers who were depressed were more likely to be female is indeed not surprising due to socio-cultural and biological reasons [15].

In terms of having siblings, archers having three siblings reported greater anxiety compared to having two siblings while archers having two siblings stated more stress in comparison to those having three siblings.

Investigating the caregiver profile, archers who had grandparents as caregiver demonstrated higher depression, anxiety and stress in comparison to those who had parents as their caregiver. Appropriate and suitable caregiving are vital in assisting children not only to cope with adversities and adjustments but also exhibit healthy development. Though the role of grandparents in the upbringing and subsequently producing healthy as well as happy children cannot be disregarded, their caregiving could not be equated to that of the parents. Parents are conventionally believed to provide optimal caregiving since various challenges are encountered by grandparents as caregivers. This is simply explained by the fact that the role undertaken is not only developmentally off time but also unplanned, ambiguous and uncertain [16-19].

With regards to parents' education level our survey revealed significantly higher depression and anxiety existed among archers who have their parents educated to college and/or secondary levels respectively in comparison to university graduated parents. Whilst significantly higher stress state was observed in college compared to secondary educated parents in the archers. This finding is consistent with a nationally representative sample in Spain [20] which had established a strong association between parent-reported child mental health issues and low parental education in 4 to 11-years-old individuals. Moreover, in another study conducted in the local context by Adlina et al. [21] affirmed that having parents with low educational level was associated with depression among secondary school students.

Significantly elevated levels of depression, anxiety and stress were noted among the archers whose parents had been teachers in comparison to other profession in this study. Although we postulate that issues such as burn out in teachers [22,23] could lead to psychological distress among them [24] thereby affecting the psychological profile of the archers. Nonetheless, this entails further investigation (both qualitative and quantitative).

Profiling of type of dwelling showed that archers who resided in bungalows exhibited significant depression and anxiety in comparison to those who stayed in semi-detached houses while they reported significant stress if they lived in semi-detached homes compared to terrace houses.

Admittedly, few weaknesses merit mention. Firstly, the survey is devoid of a control group as well as is confined to students from public universities and therefore it cannot be generalized. Secondly, the small sample size would negatively affect the results. Thirdly, this being a cross sectional study does not allow for cause and effect relationships to be studied. Fourthly, this study was limited by the use of the DASS screening questionnaire which could not have revealed a true picture of depression, anxiety or stress in a given population. Further investigation is warranted to circumvent these limitations.

5. CONCLUSION

Depression, anxiety and stress are in fact common among students [25]. If coupled with a sporting activity like archery this psychological distress is further enhanced. Psychological profile assessment among sporting activity such as archery could improve athlete performance.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Carling C, Reilly T, Williams AM. Performance assessment for field sports. London: Rutledge; 2009.
2. Neil R, Mellalieu SD, Hanton S. Psychological skills usage and the competitive trait anxiety response as a function of skill level in rugby union. J Sports Sci Med. 2006;5:415–23.
3. Malina RM, Pena Reyes ME, Eisenmann JC, et al. Height, mass and skeletal maturity of elite Portuguese soccer players aged 11-16 years. J Sports Sci. 2000;18: 685-93.
4. Franks AM, Williams AM, Reilly T, et al. Talent identification in elite youth soccer players: Physical and physiological characteristics. Communication to the 4th World Congress on Science and Football, Sydney. J Sports Sci. 1999;17:812.
5. Hardy L, Jones G, Gould D, eds. Understanding psychological preparation for sport: Theory and practice of elite performers. Chichester: Wiley; 1996.
6. Murphy SM. The on-site provision of sport psychology services at the 1987 U.S. Olympic Festival. Sport Psychol. 1988;2: 337-51.
7. Stough C, Clements M, Wallish L, et al. Emotional intelligence in sport: Theoretical linkages and preliminary empirical relationships from basketball. In: Stough C, Saklofske DH, Parker JDA, eds. Assessing Emotional Intelligence: Theory, Research, and Applications, New York: Springer, 2009;291-305.
   DOI: 10.1007/978-0-387-88370-0_15
8. Larkin P, O'Connor D, Williams AM. Does grit influence sport-specific engagement and perceptual-cognitive expertise in elite youth soccer? J Appl Sport Psychol. 2016; 28:129-38.
9. Guelmami N, Hamrouni S, Agrebi B. Psychological profiles of talented male youth athletes in team sports games. J Phys Educ Sport Manag. 2014;5:5-10.
   DOI: 10.5897/JPESM12.54
10. Do Nascimento MGB, Gomes SA, Mota MR, et al. Psychological profiles of gender and personality traces of Brazilian professional athletes of futsal, and their influence on physiological parameters. Psychol Res Behav Manag. 2016;9:41-51.
    DOI: 10.2147/PRBM.S77402
11. Reddy RC, Berhanu T. Mental toughness in sport: In case of Mekelle university sport teams. IJAR. 2016;2:01-03.
12. Krejcie RV, Morgan DW. Determining sample size for research activities. Educ Psychol Meas. 1970;30:607-10.
13. Musa R, Fadzil MA, Zain Z. Translation, validation and psychometric properties of Bahasa Malaysia version of the Depression, Anxiety and Stress Scales (DASS). ASEAN Journal of Psychiatry. 2007;8:82-9.
14. Lovibond SH, Lovibond PF. Manual for the depression anxiety stress scales. Psychology Foundation, Sydney; 1995.
15. Piccinelli M, Wilkinson G. Gender differences in depression: Critical review. Br J Psychiatr. 2000;177:486–92.
16. Edwards OW. Helping grandkin-grandchildren raised by grandparents: Expanding psychology in the schools. Psychol Schs. 1998;35:173-81.
17. Weber JA, Waldrop DP. Grandparents raising grandchildren: Families in transition. J Gerontol Soc Work. 2000;33: 27-46.
18. Landry-Meyer L, Newman BM. An exploration of the grandparent caregiver role. J Fam Issues. 2004;25:1005-25.
19. Smith GC, Palmieri PA. Risk of psychological difficulties among children raised by custodial grandparents. Psychiatr Serv. 2007;58:1303-10.
    DOI: 10.1176/appi.ps.58.10.1303
20. Sonego M, Llácer A, Galán I, et al. The influence of parental education on child mental health in Spain. Qual Life Res 2013;22:203-11.
    DOI: 10.1007/s11136-012-0130-x
21. Adlina S, Suthahar A, Ramli M, et al. Pilot study on depression among secondary school students in Selangor. Med J Malaysia. 2007;62:218-22.
22. Byrne BM. The nomological network of teacher burnout: A literature review and empirically validated model. In: Vandenberghe R, Huberman AM, eds. Understanding and Preventing Teacher Burnout, Cambridge: Cambridge University Press. 1999;15-37.
23. Vercambre MN, Brosselin P, Gilbert F, et al. Individual and contextual covariates of burnout: A cross-sectional nationwide study of French teachers. BMC Public Health. 2009;9:333.
    DOI: 10.1186/1471-2458-9-333

24. Chennoufi L, Ellouze F, Cherif W, et al. Stress and burnout among Tunisian teachers. Encephale. 2012;38:480-7. DOI: 10.1016/j.encep.2011.12.012

25. Yasin MASM, Dzulkifli MA. Differences in psychological problems between low and high achieving students. J Beh Science. 2009;4:49-58.