



An Assessment of Stress Patterns among Cadets of Nigerian Defence Academy, Kaduna, Nigeria

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Abstract. Stress is a normal and natural response of the body to a stressful situation. People respond to harmful situations differently. The way we tolerate exposure to stress varies from person to person. Our perception of any given circumstance determines our emotional and psychological outcome. Some people are resilient to stress while others are not, some are more stressed than others. The study is to examine the patterns of stress among cadets of Nigerian Defence Academy, Kaduna. Quantitative survey design was used for the research where 225 cadets, 181 males and 44 females were randomly sampled from faculties of Arts and Sciences. Stress Symptom Checklist (SSCL) was used as instrument to gather data. Frequencies and percentages were used to describe the data while independent t test was used to analyze the data. Findings revealed that significant difference exists in the patterns of stress experienced by cadets, more cadets experience psychological stress than physical stress. On the hand the result indicated no significance difference in the stress patterns experience by art or science cadets and by male or female cadets. This implies that cadets have different patterns of experiencing stress but the way they experience stress is not different whether they study arts or science subjects or whether they are males or females. Naturally it is expected that more cadets should experience physical stress but it turned the other way. Thus, this suggests that more attention should be focused in managing psychological stress than physical stress among the cadets.

Keywords: Stress, Stress Patterns, Cadets, Nigerian Defence Academy

1. Introduction

Military training is composed of different level of stresses which includes physiological and psychological components. A cadet needs to attain

certain standard in different facets of training to be a competent combatant officer. Human personality greatly varied from person to person which in turn affect the way individual cadet endure and absorbs the training hardship, not all cadets may be efficient in absorbing different stresses during training. Stress can affect both body and mind Alam and Dulal, (2018). Once the individual has been exposed to the stressor, a physiological stress response will occur. As a result, the stress response is often referred to as an adaptive one (Kavanagh 2005). However, Mandler in Kavanagh 2005) argued that focusing on the physiological aspects of stress is too narrow. He suggests that stress refers most appropriately to the convergence of both physiological and psychological effects of stressors. He maintains that only when stressors and their physiological responses affect behavior, thought, or action do they become relevant to the stress concept. Studies have shown variation in stress patterns among military personnel from different countries. A meta-analysis of 37 studies in the U.S. military, the prevalence of major depression (a symptom of psychological stress) ranges from 2.0 to 37.4% (Gadermann et al 2012). Similarly, the one-year prevalence of major depression of the Canadian Armed Forces is about 8%, much higher than 4% of the matched Canadian civilians (Theriault et al, 2019). In addition, the prevalence of posttraumatic stress disorder among the military returning from the Iraq war is estimated from 4 to 17% in the United States and from 3 to 6% in the United Kingdom (Richardson et al 2010, Fear et al 2010). Also on stress patterns, Ko-Huan Lin et al (2020) reported that military personnel reporting slight or great stress were less likely than those reporting normal psychological stress to mention they exercise more than once weekly (67.8% vs. 79.3%), similar to the U.S. survey reported (54.0% vs. 64.0%). Psychological stress is reciprocally related to physical activity as indicated in a prospective U.S. cohort of 300

enlisted military personnel, those who had a lower summation score of physical fitness at baseline exhibited more depressive symptoms at the end of an eight-week combat training course (Crowley et al, 2015). In a longitudinal study, Burrell et al (2022) reported that academic, military, and physical performance measures were collected over four years and the results indicated that a morning orientation was associated with better physical and military performance. Higher talent scores, as well as lower levels of negative affect, were associated with better performance across all three performance measures. On stress and gender; Hsieh et al (2019) found that male personnel have higher stress and gained more social support from supervisors and colleagues than female personnel who were less likely to have physical and mental issues. Miroljub et al (2021) revealed some findings of the regression model, with 29% variance, indicating to statistical relevant and independent contribution of gender and maladaptive perfectionism in explaining school success. Analyzing the effect of gender in this research, it is established that female cadet volleyball players have better school success than male cadet volleyball players. How much stress is too much differ from person to person. Some persons seem to be able to roll with life’s punches, while others tend to crumble in the face of small obstacles or frustrations (Ko-Huan Lin et al 2020). Because of the widespread damage stress can cause, it’s important to know our own limit. This study therefore, looks at stress patterns among cadets, what is the stress pattern of art and science cadets, are the stress patterns of male and female cadets different?

But, Miroljub et al 2021, reported differences between male and female cadets physical and psychological stress.

1.2 Hypotheses

- Cadets of Nigerian Defence academy will experience more physical stress as opposed to psychological stress patterns

- There will be a significant difference in patterns of stress between art and science cadets of Nigerian Defence academy
- There will be a significant difference in patterns of stress between male and female cadets of Nigerian Defence academy

2. Research Methodology

Quantitative survey design was used for the study. Stress pattern as the independent variable while course of study and gender as the dependent variables. The participants included 225 cadets of Nigerian Defence Academy, Kaduna, 181 are males representing 80.4% while 44 are females representing 19.6%. 102 cadets are from art courses out of which 85 are males and 17 are females while 123 cadets are from the science courses with 96 males and 27 females.

Stress Symptom Checklist was used to collect data. The checklist consists of 53 symptoms, 28 symptoms of physical stress and 25 symptoms of psychological stress making a total of 53 symptoms. Sschlebusch, 2004, reported that to date, the data gathered show that the SSCL is a useful measure of non-pathological stress in the general population but that further refinements and validation studies are in progress. Researchers are lecturers to the cadets, so the instrument was administered to the 225 selected cadets by the researchers with the help of their colleagues from other faculty during their general studies classes.

3. Result

The data obtained from a total 225 respondents from two Arts and Science faculties was analyzed with the statistical package of the Version 26. The first section presents the frequency distribution of the bio data variables of gender and faculties of the students while the second section tests the three hypotheses using inferential statistics of Paired sample t test and the independent t test statistics. All the hypotheses were tested at 0.05 alpha level of significance

Table 1: Frequency and Distribution of Respondents by Faculty

| | Frequency | Percent |
|---------|-----------|---------|
| Arts | 102 | 45.3 |
| Science | 123 | 54.7 |
| Total | 225 | 100.0 |

The cadets were drawn from two faculties of Arts and Science. Consequently, a total of 102 representing 45.3% are from faculty of Arts while the remaining 123 representing 54.7% are from science faculty. This showed that a total of 225 cadets were used for the study.

Table 2: Frequency and Distribution of respondents by Gender

| | Frequency | Percentage |
|--------|-----------|------------|
| Male | 181 | 80.4 |
| Female | 44 | 19.4 |
| Total | 225 | 100.0 |

On the basis of gender status, 181 of the respondents representing 80.4% are male cadets and the rest 44 representing 19.6% are female cadets

Hypothesis One: Cadets of Nigerian Defense Academy Kaduna will experience more physical stress as opposed to psychological stress patterns.

Table 3: Paired sample t test among Cadets of Nigerian Defense Academy Kaduna in their difference between experience in physical stress and psychological stress patterns.

| Variables | N | Mean | S.D | Mean Difference | Df | t computed | t critical | P |
|----------------------|-----|---------|----------|-----------------|-----|------------|------------|-------|
| Physical Stress | 225 | 39.5111 | 9.72942 | 3.95111 | 224 | 7.455 | 1.96 | 0.000 |
| Psychological stress | 225 | 43.4622 | 10.96584 | | | | | |

p < 0.05, t computed > 1.96 at df 224

Results of the Paired sample t test showed that significant difference exist among the Cadets of Nigerian Defense Academy Kaduna in their experience in physical and psychological stress patterns. This is because the calculated p value of 0.000 is below the 0.05 alpha level of significance as the computed t value of 7.455 is greater than the 1.96 t critical value at df 224. Their mean physical and psychological stress experiences are 39.5111 and 43.4622 respectively with a mean difference of 3.95111 on the side of psychological stress. This shows that cadets experience psychological stress more than physical stress. Therefore, the hypothesis which state that Cadets of Nigerian Defense Academy Kaduna will experience more physical stress as opposed to psychological stress patterns, is hereby confirmed

Hypothesis Two: There will be a significant difference in patterns of stress between Cadets of Arts and Science faculties in the Nigerian Defense Academy Kaduna.

Table 4: Independent t test statistics on difference in patterns of stress between Cadets of Arts and Science faculties in the Nigerian Defense Academy Kaduna

| Pattern of Stress | faculty | N | Mean | S.D | Mean. Diff. | Df | t. computed | t critical | P value |
|----------------------|---------|-----|--------|--------|-------------|-----|-------------|------------|---------|
| Physical Stress | Arts | 102 | 39.058 | 9.334 | 0.827 | 223 | 0.634 | 1.96 | 0.527 |
| | Science | 123 | 39.886 | 10.067 | . | | | | |
| Psychological Stress | Arts | 102 | 43.902 | 10.916 | 0.854 | 223 | 1.95 | 1.96 | 0.062 |
| | Science | 123 | 44.756 | 10.881 | . | | | | |

Physical stress: p > 0.05, t computed < 1.96 at df 223

Psychological stress: p > 0.05, t computed < 1.96 at df 223

The Independent t test statistics above showed that there is no significant difference in patterns of stress between Cadets of Arts and Science faculties in the Nigerian Defense Academy Kaduna. This is because the calculated p value of 0.527 in physical stress between Arts and Science is greater than the 0.05 alpha level of significance and in the same vein the calculated p value of 0.062 in Psychological stress between Arts and science is greater than the 0.05 alpha level. The physical stress level of Arts and Science cadets are 39.058 and 39.886 respectively, while the Psychological stress level of Arts and science cadets are 43.902 and 44.756 respectively. All these showed that the physical stress of Arts and Science are the same just as the psychological stress for Arts and science are the same. Therefore, the hypothesis that state that there will be a significant difference in patterns of stress between Cadets of Arts and Science faculties in the Nigerian Defense Academy Kaduna, is hereby rejected.

Hypothesis Three: There will be a significant difference in patterns of stress between Male and female Cadets of the Nigerian Defense Academy Kaduna.

Table 6: Independent t test statistics on difference in patterns of stress between Male and female Cadets of the Nigerian Defense Academy Kaduna

| Pattern of Stress | Gender | N | Mean | S.D | Mean. Diff. | Df | t. computed | t critical | P value |
|----------------------|--------|-----|--------|--------|-------------|-----|-------------|------------|---------|
| Physical Stress | Male | 181 | 39.475 | 9.988 | 0.183 | 223 | 0.112 | 1.96 | 0.911 |
| | Female | 44 | 39.659 | 8.685 | | | | | |
| Psychological Stress | Male | 181 | 43.508 | 11.573 | 0.235 | 223 | 0.128 | 1.96 | 0.899 |
| | Female | 44 | 43.272 | 8.105 | | | | | |

Physical stress: p > 0.05, t computed < 1.96 at df 223

Psychological stress: p > 0.05, t computed < 1.96 at df 223

The Independent t test statistics above showed that there is no significant difference in patterns of stress between Male and female Cadets of Nigerian Defense Academy Kaduna. This is because the calculated p value of 0.911 in physical stress between male and Female is greater than the 0.05 alpha level of significance and in the same vein the calculated p value of 0.899 in Psychological stress between male and female is greater than the 0.05 alpha level. The physical stress level of Male and female cadets are 39.475 and 39.659 respectively, while the Psychological stress level of Male and female cadets are 43.508 and 43.272 respectively. All these showed that the physical stress for male and female cadets is the same just as the psychological stress for Male and female cadets are the same. Therefore, the hypothesis that state that there will be a significant difference in patterns of stress between Male and female Cadets of the Nigerian Defense Academy Kaduna, is hereby rejected.

4. Discussion

Results of the Paired sample t test showed that significant difference exist among Cadets of Nigerian Defense Academy Kaduna in their experience in physical and psychological stress patterns. This is because the calculated p value of 0.000 is below the 0.05 alpha level of significance as the computed t value of 7.455 is greater than the 1.96 t critical value at df 224. This shows that cadets experience psychological stress more than physical stress. Similarly, various studies have shown variation in stress patterns among military personnel from different countries. A meta-analysis of 37 studies in the U.S. military, the prevalence of psychological stress in terms of major depression and posttraumatic depression varies among military personnel in US, Canada, United Kingdom and Iraq Gademmann et al (2012), Theriault et al, (2019) Ko-Huan Lin et al, (2020), Richardson et al 2010, Fear et al (2010) Crowley et al, (2015). The findings also revealed that no difference in patterns of stress between Cadets of Arts and Science faculties. This is because the calculated p value of 0.527 in physical stress between Arts and Science is greater than the 0.05 alpha level of significance and in the same vein the calculated p value of 0.062 in Psychological stress between Arts and science is greater than the 0.05 alpha level. In the same vein, Nasioudis et al found that academic performance, year of training and gender have been associated with the presence of depression. On the contrary, Burrell et al (2022, Ko-Huan Lin et al 2020) reported variation in academic training due to psychological and stress of individual. Nasioudis et al 2015 also reported that higher education level, shorter military service, origin from a city or town and health problems during military training were

associated with depressive symptoms. The Independent t test statistics showed that there is no difference in patterns of stress between Male and female Cadets. This is because the calculated p value of 0.911 in physical stress between male and female is greater than the 0.05 alpha level of significance and in the same vein the calculated p value of 0.899 in psychological stress between male and female is greater than the 0.05 alpha level.

Nasioudis et al 2015 also reported no any significant differences between the two groups based on gender, year of training, academic performance, alcohol consumption, smoking status, vitamin supplementation, dietary habits or BMI. But, Hsieh et al, (2019). But, Miroljub et al 2021, reported differences between male and female cadets physical and psychological stress. Analyzing the effect of gender in this research, it is established that female cadets volleyball players have better school success than male cadets volleyball players. These findings match the research (Miroljub, 2021) where better school success of female athletes is explained by the difference in motivation, social support, commitment and persistence.

5. Conclusion and Recommendations

In conclusion the cadets of Nigerian defense academy experience significantly higher psychological stress than physical stress by either the cadets of science or Arts faculties and by both male and female alike

The following recommendations are made:

- Cadets should be checking their stress levels psychological stress of the cadets should be reduced especially their high level of anxiety through providing relaxation activities.
- The management should provide qualified psychologists and guidance counselors in the campus that will take care of the cadets' psychological stress.
- There should be regular interface between the management and the cadets to discuss their stress levels

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