The Exploratory Case Study of Improving the Nigerian Defence Academy Cadets' Training Effectiveness

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Introduction

This study is positioned to identify innovative strategies to improve cadets' education and military training routines to better support educational requirements and meet conventional intellectual standards in the Nigerian Defence Academy (NDA). Many lecturers at NDA (or Academy) openly confessed that the level of academic training received by cadets falls short, on many occasions, of the code and intellectual standard/competency expected of an officer. The lecturers' perceived weak academy learning at the Academy is largely due to the inability of cadets to focus (stay awake) during lectures due to sleep deprivation. Given this backdrop, the vision and mission of the Academy may not be fully realised. The mission statement and code around which military cadets' lives revolve seek to educate, train, and galvanise cadets to become leaders of character committed to the values of duty, honour, and country; professional

growth throughout their career as officers in the military; and a lifetime of selfless service to the nation.

As in many military academies, the NDA cadets' training includes an educational structure consisting of classroom settings, pedagogy, and homework, and the propensities to sleep in class are pervasive. The need for cadets to be hardened as part of their indoctrination into the military culture is firmly embedded in the military tradition. This process typically involves sleep deprivation and, sometimes, acute sleep deprivation.[1] Ostensibly, rising early in the morning helps to address three goals of the cadets' military training agenda. First, it instills the discipline required of officers, second, it avoids scheduling conflicts that prevent attendance, and third, helps develop group cohesion and pride, or esprit de corps. Alas, these goals come at a cost - a lower total amount of sleep for the cadets per night. *Cutting five* is a common catchphrase among cadets for napping in class, and on most occasions, cadets get to class feeling sleepy and exhausted. Many authors[2] have concluded that military cadets have a chronic sleep debt and are inculcated into a cultural norm of sleep deprivation. Long hours of physical activity, stressful environments, and high rates of conditions like post-traumatic stress disorder all contribute to high rates of sleep issues in the military.

Sleep health is vital for general health, quality of life and safety of people. Cadets at the Nigerian Defence Academy are known to be sleep deficient as they commonly sleep during classroom lectures. Poor sleep has been linked to deficits in attention, reduction in academic performance, impaired driving, risk-taking behaviours, depression, damaged social relationships and poorer health. Cadets may have limited knowledge about sleep hygiene and the behaviours that support sleep health, which may lead to poor sleep hygiene behaviour.[3]

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[1] N.L. Miller, L.G. Shattuck, P. Matsangas, and J. Dyche,. "Sleep and Academic Performance in U.S. Military Training and Education Programs," *International Mind, Brain, and Education Society*, 2, 1 (2008a): pp. 29-33.

[2] S.G. Williams, , J. CollenE. Wickwire, C.J. Lettieri, and V. Mysliwiec, , "The Impact of Sleep on Soldier Performance," *Current Psychiatry reports*, 16, 459(2014). DOI 10.1007/s11920-014-0459-7.

[3] S.K. Dietrich, C.M. Francis-Jimenez, M.D. Knibbs, I.L. Umali, M. Truglio-Londrigan, "Effectiveness of sleep education programs to improve sleep hygiene and/or sleep quality in college students: a systematic review." *JBI Database System Rev Implement Rep.*, 14(9) (2016)., pp. 108-134. doi: 10.11124/JBISRIR-2016-003088. PMID: 27755323.

Sleep deprivation is a substantial hidden factor in reducing the achievement of students. Many lecturers at NDA are aware that sleeping in class is a serious disruption during lectures such that lessons, sometimes, have to be dumbed down to accommodate sleep-deprived cadets. Researchers[4] have claimed that lack of sleep constitutes a serious physical barrier to learning, and sleepiness is a problem at all stages that are relevant to learning, memory and academic performance. Studies[5] have also shown that sleep disorders and brain function have a significant impact on memory and consolidating information. Sleeplessness causes the brain to struggle to absorb and retain ideas. People who are unable to concentrate or focus mentally are incapable of achieving the optimal level because their minds and body are in need of something more basic. Accordingly, sleep is extremely important in pedagogy and sleep deprivation affects students' ability to perform well in class, and this could impair their education.

The complexities of modern warfare and international policies required a new formulation of military officership and the training regime that fostered it. The quality and affordability of virtual, augmented and mixed reality technologies are now an essential element to military readiness. According to Zemin,[6] all aspects of the industrial-age army, including weapons and equipment, organisational structure, military theory, military training, and methods of ensuring logistics support constantly undergo a thorough transformation in this information age. Moreover, more technological breakthroughs in a number of new technologies such as nanotechnology, biotechnology, new materials technology, new energy technology, masking technology, and artificial intelligence (AI) necessitate changes in the education and mode of instruction military cadets receive during (and after) training. Consequently, training conditions such as managerial skills, civilian educational influences, and emergent social forces that are obtained in classroom teaching should be responsive to the conceptual and programmatic interpretation of modern military professionalism.

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[4] S. Coughlan, (2013). "Lack of sleep blights pupils' education." Available at: https://www.bbc.co.uk/news/business-22209818.

[5] W.E. Kelly, K.E. Kelly, and R.C. Clanton, "The Relationship Between Sleep Length and Grade-Point Average Among College Students," *College Student Journal*, 35(1), pp. 84-86(2001).

[6] J. Zemin, (2010). *On the Development of China's Information Technology Industry*, Academic Press. DOI: https://doi.org/10.1016/C2009-0-62816-6.

Against this background, this present study builds on existing literature to explore the features of a cadet training program and its peculiarities through two questions: (1) what are the key issues relating to sleep deficit among cadets in NDA (2) To what extent could cadets' academic pedagogy be enhanced without compromising military training and standards? The paper is organised into five parts; the first relates the conceptual analysis, the second explains the contextual background, the third describes the methodology, the fourth explicates the findings and analysis, and the fifth communicates the discussion, recommendations, and concluding remarks. Even though the NDA trained different categories of cadets, this study spotlights the Regular Course (RC) cohorts – the main motive for which the Academy was established.

Conceptual Framework

The institutional logic and symbolic boundary theoretical approaches are employed in this study. First, the institutional logics theory[7] maintains that individual and organisational behaviour are strongly determined by a few macro-level phenomena such as the state, organisation, religion, family, and community. Institutional logics are identified as "symbolic systems, way of ordering reality, and thereby rendering the experience of time and space meaningful."[8] Utilising the value of symbolic and concrete aspects of institutions, an institutional logic perspective will facilitate the detection of how specific practices and symbolic interfaces influence organisational practices.[9] Logics influence organisations both as prescriptions and demands, with most organisations facing institutional complexity as a result of their interactions with a range of

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[7] M. Orlitzky, "Institutional logics in the study of organizations: The social construction of the relationship between corporate social and financial performance." *Business Ethics Quarterly* 21 3 pp(2011):pp. 409-444; P.H. Thornton, W. Ocasio, and M. Lounsbury, *The institutional logics perspective*. Oxford: Oxford University Press, 2012.

[8] R. Friedland, and R.R. Alford, "Bringing society back in Symbols, practices, and institutional contradictions." In *The new institutionalism in organizational analysis* W.W. Powell, and P.J. DiMaggio, (Eds.), . (Chicago: The University of Chicago Press, 1991). pp. 232-263.

[9] P.H. Thornton, and W. Ocasio, "Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958–1990". *American Journal of Sociology*, 105 (1999): pp. 801–843.

stakeholders straddling multiple spheres.[10] The institutional logic perspective helps in understanding the interrelationships among institutions, organisations, and individuals.[11] Values, beliefs, and rules are components of the institutional logic by which people understand social reality.[12] Societies embrace multiple institutional orders that include unique organising principles.[13] These principles suggest what goals are acceptable and what are the authentic means of achieving goals according to a certain logic; for example, logic relating to state, religion, market, profession, corporation, family, or community.[14] Separately, each logic provides a set of procedures for action. The literature asserts that actors engage in multiple logic – family, community, religion, market, etc., and when actors engage with more than one logic, they face institutional complexity.[15]

Some researchers (e.g., Greenwood et al.)[16] have drawn attention to the notion of 'institutional complexity'. The term refers to the incompatible demands of different stakeholders, i.e., the contradictory instructions from multiple institutional logics (e.g., military induction and civilian education as a fitting example of incompatible logics).

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[10] H. Schildt, and M. Perkmann, "Organizational settlements: theorising how organizations respond to institutional complexity." *Journal of Management Inquiry*, 26(2) (2016)., DOI: 10.1177/1056492616670756.

[11] P.H. Thornton, W. Ocasio, and M. Lounsbury, *The institutional logics perspective*. Oxford: Oxford University Press, 2012.

[12] P.H. Thornton, and W. Ocasio, "Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958–1990." *American Journal of Sociology*, 105 (1999): pp. 801–843.

[13] , P.H. ThorntonW.Ocasio, and M. Lounsbury, *The institutional logics perspective*. (Oxford: Oxford University Press, 2012).

[14] P.H. Thornton, W. Ocasio, and M. Lounsbury, . *The institutional logics perspective*. (Oxford: Oxford University Press, 2012).

[15] M., Smets, P. Jarzabkowski, , G. Burkeand P. Spee, "Reinsurance trading in Lloyd's of London: balancing conflicting-yet-complementary logics in practice." *Academy of Management Journal* 58, 3 (2015): pp. 932–970.

[16] R. Greenwood, A.M. Diaz, S.X. Li, and , J.C. Lorente "The multiplicity of insti-tutional logics and the heterogeneity of organizational responses," *Organization Science* 21, 2, (2011): pp. 521–539; Jarzabkowski, P., Smets, M., Bednarek, R., Burke, G., and Spee, A.P. (2013). "Institutional ambidexterity: leveraging institutional complexity in practice." In M. Lounsbury and E. Boxenbaum (Eds.), *Institutional logics in action* (pp. 37–61). Bingley: Emerald; Peifer, J.L.,. "The institutional complexity of religious mutual funds: Appreciating the uniqueness of societal logics," *Research in the Sociology of Organizations*, 41(2014): pp. 339-368.

Institutional scholars[17] have acknowledged the co-existence of institutional logic, rather than the dominance of particular logic within the field. Moreover, recent studies[18] recognise that the multiplicity of logic within a field does not always cause institutional tensions and a challenge for the organisations, yet they may shape organisational structures and practices in the constellation. This, for instance, could take the form of opposing or conforming to dominant logic through avoiding identification with a single institutional logic.[19]

In the context of this research project, a military training logic tends to rely upon physical legitimacy while academic pedagogy relies on a different type of legitimacy - cognitive legitimacy. Thus, when applied to the NDA, the notion of institutional complexity tends to imply that the institutional logic of military training and academic pedagogy are incompatible, making it difficult to serve both *masters*. This insight problematizes the basic premise of military training and academic scholarship; that academic tuition easily permeates military training, resulting in a more rounded training program. At any rate, organisations encounter institutional complexity when they are exposed to demands from multiple and often mismatched logics.[20] Some researchers[21] have investigated how organisations respond internally to this complexity by making certain compromises. For instance, organisations remove complexity (i.e., reduce conflict

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[17] M.B. Dunn, and C. Jones, "Institutional logics and institutional pluralism: the contestation of care and science logics in medical education, 1967–2005," *Administrative Science Quarterly* 55, (2010): pp. 114–149; P. Jarzabkowski, M. Smets, R. Bednarek, G. Burke, and A.P. Spee, . "Institutional ambidexterity: leveraging institutional complexity in practice." In *Institutional logics in action* M. Lounsbury and E. Boxenbaum (Eds.), ((2013),pp. 37–61). Bingley: Emerald

[18] J. Pallas, M. Fredrikson, and L. Wedlin, "Translating institutional logics: when the media logic meets professions," *Organization Studies* 37, 11 (2016): pp. 1661–1684; S, H. childtand M. Perkmann, . "Organizational settlements: theorising how organizations respond to institutional complexity." *Journal of Management Inquiry* 26. 2 (2016), DOI: 10.1177/1056492616670756.

[19] J. Mair, J. Mayer, and E Lutz, "Navigating institutional plurality: organizational governance in hybrid organizations," *Organization Studies* 36 6 (2015):pp. 713–739.

[20] R. Greenwood, A.M. Diaz, S.X. Li, and J.C. Lorente, "The multiplicity of insti-tutional logics and the heterogeneity of organizational responses." *Organization Science* 21, 2 (2011): pp. 521–539

[21] M.S. Kraatz, and E. Block, "Organizational implications of institutional pluralism." In R. Greenwood, C. Oliver, K. Sahlin-Andersson, and R. Suddaby (Eds.), *The Sage Handbook of organizational institutionalism* pp. 234-275 (London: Sage, 2008).

among logic) by marginalising one logic to the advantage of the other. [22] Other organisations might choose to separate different logics and catalogue them within distinct and separate organisational structures.[23] Yet, some organisations combine and balance different logic[24] to create mixed hybrid structures[25] such as those obtained in the Academy.

Tensions between logics are apparent in the NDA, for example, whilst the military arm (G-branch) emphasizes brawn, the academic branch (A-branch) stresses the brain. Invariably, military training practices provide a cosmology, i.e., a general interpretation of how the world is organised and how its elements relate to one another. This cosmology acts as a system of classification and its elements are ordered according to a hierarchy (counterposing, for instance, the military training with the academic pedagogy). The principle invested in this *order of things* shapes cadets' training to the extent that it limits and facilitates their actions.

The symbolic boundary approach that accompanies the institutional complexity of cadets' military training and academic pedagogy is the other theoretical framework proposed for this research. According to Lamont and Molnar,[26] the symbolic boundaries or "distinctions made by social actors to categorize objects, people, practices…"(2002: 168) have become an important concept in cultural sociology. Symbolic boundary framework is of relative importance to this study as it is exhibited in the educational endogamy of the Academy. The framework is considered useful in analysing the ways military training planners engage in symbolic boundary work between military training and academic training. Terms such as boundary-building and boundary-blurring are germane in the application of this framework. Whilst boundary-building refers to a clean

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[22] A.C. Pache, and F. Santos, "Inside the hybrid organization: Selective coupling as a response to competing institutional logics," *Academy of Management Journal* 56 4 (2013): pp. 972–1001.

[23] R. Greenwood, , A.M. DiazS.X. Li, and , J.C. Lorente "The multiplicity of institutional logics and the heterogeneity of organizational responses," *Organization Science* 21 2 (2011): pp. 521–539.

[24] , M.SmetsP. Jarzabkowski, G. Burke, and P. Spee, "Reinsurance trading in Lloyd's of London: balancing conflicting-yet-complementary logics in practice," *Academy of Management Journal* 58, 3 (2015): pp. 932–970.

[25] A.A. Gümüsay, M. Smets, T. Morris, 'God at work': "Engaging central and incompatible institutional logics through elastic hybridity," *Academy of Management Journal* 63 (2020): pp. 124–154.

[26] M. Lamont, and V. Molnar, "The study of boundaries in the social sciences," *Annual Review of Sociology* 28 (2002): pp. 167-195.

separation or distinction of the institutions, boundary-blurring refers to joining them together.

Together, the two adopted frameworks (i.e., institutional logic and symbolic boundary) will help in interrogating the fluidity or dynamism between coexisting/contradictory logic (inherent in the military academy's training regime). Furthermore, the frameworks will assist in navigating the contested tensions between the symbolic logic of military training and academic tuition procedures. This is a creative adaptation of organisational forms to better fit a complex institutional environment such as obtained in the NDA training curricula.

Contextual Background

The Nigerian Defence Academy

The Nigerian Defence Academy (NDA), a joint defence service training institution of the Nigerian Armed Forces, is a leading tri-service academy in Africa. The institution was established in February 1964 with the objective of training and preparing young Nigerians to be commissioned into the Nigerian Armed Forces. Historically, NDA's structure/format has particular traction in the British military culture. During the colonial era, there was a deliberate effort to standardize the British imperial forces across the British Empire through uniformity in the system of educating regimental officers to achieve the purpose of imperial interoperability. Common military education made it easier for the forces of different nations in the British Empire to work together and the British imperial military colleges were heavily staffed by the British and Indian military instructors. [27] Accordingly, the NDA follows the pattern of similar National Defence Academy in India and its initial trainers were mostly officers in the Indian Army (NDA's first commandant was an Indian Army Brigadier, M.R Verma). [28] Yet, it is perhaps interesting that the NDA eventually departed from the British military academy approach (i.e., non-degree awarding like the Royal Military Academy Sandhurst) to

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[27] D.E. Delaney, and R.C. Engen, "Introduction," in *Military Education and the British Empire, 1815–1949* D.E. Delaney, R.C. Engen, and M. Fitzpatrick, (editors) (UBC Press, Vancouver, Toronto Canada, (2018), pp. 3-8.

[28] NDA, "Welcome," Available at: Headquarters Nigerian Defence Academy - Nigerian (2021)Defence Academy, Kaduna - Nigeria (nda.edu.ng).

adopting the French/American model of a degree-granting military academy. NDA became a degree-awarding institution in the Nigerian post-civil war period of professionalization and reform in the Nigerian military fuelled by the oil boom of the 1970s and early 1980s.

NDA's mission focuses on the tasks of educating, training, and inspiring cadets to become officers of good character, motivated to lead the Nigerian Armed Forces in service to the country. To achieve this mission, NDA provides cadets with both military training and a four-year university education similar to that offered at civilian universities. NDA is the most difficult university to teach and study in because of the two training programmes the cadets pursue simultaneously. The Academy has its own culture and is distinctive in its own ways. NDA cadets are unique in many ways as they are always occupied with one activity or the other. The cadets are constantly put under pressure so they are able to deal with the pressure of the armed forces. NDA began offering undergraduate programs to military personnel undergoing training in 1985 and presently offers MSc and PhD programs for both military and non-military personnel. In 2010, the institution began to admit females. Competition for a place in the NDA is very high, and only the very best candidates are admitted into the elite military university, acclaimed to be the best in West Africa and one of the best military schools in Africa.

There are two main types of courses in the Academy: The Regular Course (RC) and the Short Service Course (SSC). For the former, the duration of training at NDA is four years (at the Academy) for candidates who enrolled in the Air Force and Navy and five years for those recruited into the Army.[29] At graduation, the Regular Course cadets are awarded Bachelor's Degree just like it is done in other universities in the country. The SSC is a nine-month intensive military training for graduates (candidates) drawn from various disciplines to serve as officers in the Nigerian military service. While the Regular Courses are housed at NDA's permanent site in the Afaka campus, Kaduna, the SSC cadets are based at the old site in Ribadu Cantonment, Kaduna.

Training activities at NDA include academic teaching, physical training, swimming, horse riding, firing, drilling, tactics, navigation, etc. With a commitment to pushing physical, emotional and mental limits, trainees at NDA are pushed to develop

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[29] C. Udeh, "Nigerian Defence Academy (NDA) Cadets and Students Salary Structure," 2021. Available at: https://buzznigeria.com/nigerian-defence-academy-nda-cadet-and-student-salary-structure/

into highly disciplined, physically fit cadets. Both academic and military training programs at the NDA are regularly reviewed by relevant authorities, i.e., academic contents are reviewed by the Nigerian University Commission (NUC) and the military training contents by a team from the Defence Headquarters (DHQ).

At the apex of NDA's management is the Commandant, who is usually a senior Major General in the Nigerian Army, and supported by a deputy Commandant (usually an Air Vice Marshal), the Academy Provost (a Professor). These three top officers are followed by the Directors of Directorates. NDA's administration is made up of the Academic branch (A-branch) and eight directorates, namely: Directorate of Military Training; Directorate of Administration; Directorate of ICT; Directorate of Logistic; Cadet Brigade; Directorate of Coordination; Directorate of Finance; Directorate of General Studies.[30] All the directorates (except the Directorate of General Studies) are headed by military officers. The A-branch is headed by the Academy Provost (AP) who is a civilian Professor and oversees academic matters with the support of the Academy Registrar, who is usually a Brigadier General in the Army. The Academy Librarian, Deans of Faculties, Head of Departments (HODs), and Head of Centres (HOC) are the other principal officers in the A-branch.

Sleep and Sleep Deprivation

Sleep is an important biological necessity that everyone needs to maintain a healthy lifestyle. Adequate sleep allows people to function well and think properly, so much so that the lack of sleep adversely affects the ability to perform cognitive tasks.[31] Basically, sleep helps people perform at optimal levels and is critical for brain functioning. It also helps with all the cognitive functions such as learning, memory, critical thinking, and decision-making. Besides, studies [32] have shown that sleep is

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[30] NDA "Home - Nigerian Defence Academy," 2022. Kaduna - Nigeria (nda.edu.ng). Available at: https://nda.edu.ng/

[31] R. Ratcliff, and Van , H.P.A. Dongen "The Effects of Sleep Deprivation on Item and Associative Recognition Memory," *Journal of Experimental Psychology: Learning, Memory, and Cognition* 44, 2 (2018): pp. 193-208.

[32] A.M. Watson, "Sleep and Athletic Performance," *Current Sports Medicine Reports*, 16, 6 (2017): pp. 413-418, doi: 10.1249/JSR.0000000000000418.

essential for maintaining peak athletic performance and quick reaction times [33]. Researchers (e.g., Bramoweth & Germain)[34] insist that getting adequate sleep is vital for good health management, and lack of sleep is reliably and prospectively linked to a host of adverse mental and physical health outcomes, including an increased risk of depression, suicide, accidents and injuries, cardiovascular morbidity, and allostatic overload. Allostatic overload occurs when an imbalance is present in the body, disrupting allostasis. According to McEwen[35], allostasis is the "active process that the body uses to establish and maintain equilibrium (homeostasis)." Furthermore, chronic insufficient sleep and circadian rhythm disorders have been associated with other sleep disorders such as insomnia, obstructive sleep apnea, and parasomnias. [36] This makes sleep extremely important for academic/non-academic performance.

Nevertheless, several studies (e.g., Coughlan, Kelly et al.)[37] have shown that not everybody is getting enough sleep to function properly, particularly students. Researchers have claimed that sleep deprivation triggers students' poor academic performance. For example, Sahin et al. [38] observe that sleep quality and daytime sleepiness trigger decreasing academic performance. However, researchers (e.g., Patrick et al.)[39] found that acute sleep deprivation can have an impact on physical but not cognitive ability in young healthy university students.

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[33] H., Michael, , 1, Bonnetand D.L. Arand, "Clinical effects of sleep fragmentation versus sleep deprivation," *Sleep Medicine Reviews* 7, 4 (2003): pp. 297-310, doi: 10.1053/smrv.2001.0245.

[34] A.D. Bramoweth, and A. Germain, "Deployment-Related Insomnia in Military Personnel and Veterans," *Current Psychiatry Reports* 15 10 (2013):p. 401

[35] B. S. McEwen, "Sleep deprivation as a neurobiologic and physiologic stressor: Allostasis and allostatic load," Metabolism: *Clinical and Experimental*, 55(suppl. 2), (2006): pp. S20-S23. doi:10.1016/j.metabol.2006.07.008

[36] C.H. Good, A.J. Brager, V.F.Capaldi, and V. Mysliwiec, "Sleep in the United States Military," *Neuropsychopharmacology* 45 1 (2020): pp. 176-191. Doi: 10.1038/s41386-019-0431-7.

[37] S. Coughlan, "Lack of sleep blights pupils' education," (2013). Available at: https://www.bbc.co.uk/news/business-22209818

[37] W.E. Kelly, K.E. Kelly, and R.C. Clanton, "The Relationship Between Sleep Length and Grade-Point Average Among College Students," *College Student Journal* 35, 1 (2001): pp. 84-86.

[38] E.M. Sahin, L. Ozturk, D.G. Oyekcin, and A. Uludag, "Effects of Sleep Hygiene Education on Subjective Sleep Quality and Academic Performance," *Journal of Clinical Analytical Medicine* 7, 3 (2016): pp. 304-8.

[39] Y. Patrick,A. Lee, O. Raha, K. Pillai, S. Gupta, S. Sethi, F. Mukeshimana, L. Gerard, M.U. Moghal, S.N. Saleh, S.F. Smith, M.J. Morrell, and J. Moss, "Effects of sleep deprivation on cognitive and physical performance in university students," *Sleep and Biological Rhythms* 15,3 (2017): pp. 1-9. DOI: 10.1007/s41105-017-0099-5.

The positive relationship between learning and sleep, particularly in terms of memory consolidation, has been established in the literature. Several researches[40] have shown that remembering new information (especially among young adults in academic environments) is enhanced by sufficient amounts of sleep. Even short 15- to 30-minute quick naps can generate an extra burst of energy and alertness, but longer naps are even shown to benefit learning, memory, and cognitive function. Axelsson and Sundelin[41] explicate that the many complex neural processes that take place while people nap are largely responsible for helping their brains stay in good shape. However, the sleep patterns of cadets are continually disrupted with reduced sleep periods and inflexibility in opportunities for restorative sleep when they are subjected to academic rigour and physical demands of military training regimes such as those obtained in military academies.[42] Invariably, cadets may have limited knowledge about sleep hygiene and the behaviours that support sleep health, which could lead to poor sleep hygiene behaviour.[43] Similarly, sleep deprivation is widespread among university students because they live in a culture that largely promotes minimal sleep. The burden of academic work and social pastimes such as alcohol and caffeine intake, stimulants, and technology prevent students from achieving sufficient sleep time causing poor sleep hygiene.[44] For instance, a cross-sectional survey discovered that 71 percent of students did not achieve the recommended eight hours of sleep, with 60 percent categorised as poor sleepers.[45]

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[40] N.L. Miller, P. Matsangas, and Shattuck, L.G. ("Fatigue and its effect on performance in military environments," In *Performance under stress* P. A. Hancock and J.L. Szalma (Eds.), (Burlington, VT: Ashgate Publications, 2008), pp. 231– 259.

[41] J. Axelsson, and T. Sundelin, "Give it a rest: why afternoon naps can improve memory and alertness," (2021). Available at: https://www.independent.co.uk/health_and_wellbeing/afternoon-nap-benefits-good-bad-b1812999.html

[42] N.L. Miller, L.G. Shattuck, P. Matsangas, and J. Dyche, "Sleep and Academic Performance in U.S. Military Training and Education Programs," *International Mind, Brain, and Education Society* 2, 1 (2008a): pp. 29-33.

[43] Dietrich, S.K., Francis-Jimenez, C.M., Knibbs, M.D., Umali, I.L., Truglio-Londrigan, M "Effectiveness of sleep education programs to improve sleep hygiene and/or sleep quality in college students: a systematic review," *JBI Database System Rev Implement Rep*. 14 9 (2016): pp. 108-134. doi: 10.11124/JBISRIR-2016-003088. PMID: 27755323.

[44] S.D. Hershner, and R.D. Chervin, "Causes and consequences of sleepiness among college students," *Nat Sci Sleep*, 6 (2014): pp. 73–84.

[45] H.G. Lund, B.D. Reider, A.B. Whiting, and, J.R. Prichard "Sleep patterns and predictors of disturbed sleep in a large population of college students," *Journal of Adolescence Health* 46 2 (2010): pp. 124–32.

Sleep Deprivation in the Military

Research has shown that sleep problems are prevalent in the military populations. [46] For instance, Good et al. [47] argue that it is often difficult for service members to get revitalising sleep in these stressful environments due to the gruelling military routine, whether in training or deployment environments, they endured. The authors further contend that inadequate or lack of sleep causes significant mental and physical health issues, which could lead to compromises in personal safety, mission success, and even national security. Thus, quality sleep is critical for mental and physical health, and prioritising sleep among members of the military is a matter of both safety and national security. For instance, although the US military recognises that sleep deprivation is unavoidable, the importance of sleep is emphasised in the new update to the Army's training field manual. [48] Three strategies for sleep readiness were laid out in this manual. These include creating environments that promote healthy sleep, defining the role of leadership in prioritising sleep, and planning for periods of insufficient sleep. The importance of adequate sleep for a member of the military, getting the right amount of sleep can mean the difference between life and death. A Pentagon study finds that combat fatalities are reduced by 20 percent when soldiers get enough sleep prior to their mission. [49] By and large, sleep deprivation is very common in military life, particularly during training, demanding manoeuvres activities, and combat. [50] In military training and education settings, the schedule of events is both painstaking and firmly enforced. In the face of particularly limited opportunities for sleep, the typical schedule of events often leads to sleep deprivation and enforced circadian desynchrony. [51] It is the case that many

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[46] W.M. Troxel, R.A. Shih, E. Pedersen, L. Geyer, M.P. Fisher, B.A. Griffin, A.C. Haas, J.R. Kurz, and, P.S., Steinberg *Sleep in the Military: Promoting Healthy Sleep Among U.S. Servicemembers*. (RAND Corporation, Santa Monica, California 2015). ISBN: 978-0-8330-8851-2.

[47] C.H. Good, A.J. Brager, V.F. Capaldi, and V. Mysliwiec, "Sleep in the United States Military," *Neuropsychopharmacology*, 45 1 (2020): pp. 176-191. Doi: 10.1038/s41386-019-0431-7.

[48] US Army "Holistic Health and Fitness, Field Manual No. 7-22," Headquarters Department of the Army Washington, D.C., (2020). Available at: https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN30714-FM_7-22-000-WEB-1.pdf

[49] Jason (2008). "Human Performance. Jason the Mitre Corporation," Virginia. Available at: https://fas.org/irp/agency/dod/jason/human.pdf

[50] N.L. Miller, L.G. Shattuck, and , P. Matsangas "Sleep and fatigue issues in continuous operations a survey of U.S. Army Officers," *Behavioral Sleep Medicine* 9,1 (2011): pp. pp. 53-65. doi: 10.1080/15402002.2011.533994.

[51] N.L Miller, and L.G. Shattuck, "Sleep patterns of young men and women enrolled at the United States Military Academy: results from year 1 of a 4-year longitudinal study," *Sleep* 28, 7 (2005): pp. 837-41.

members of the military view sleep as an indulgence, and sleep deprivation in the interest of duty is much valued.[52]

It is expedient to note that cadets sleeping in class is not a new knowledge and the incidences of sleeping cadets in class are not exclusive to the NDA, Kaduna as similar experience abounds in other military training institutions around the world. For instance, Kulkarni[53] reported the same problem in the Indian National Defence Academy, this could perhaps be alluded to similar inherited British colonial military culture by Nigeria and India's NDAs. Miller et al.[54] also claim that on average, over the 4 years' training period, cadets slept less than 5.5 hours on school nights. Cadets napped extensively, perhaps in an attempt to compensate for chronic sleep deficiency. Many authors (e.g., Williams et al.)[55] have concluded that military cadets have a chronic sleep debt and are inculcated into a cultural norm of sleep deprivation. Cadets undertake a rigorous schedule full of competing demands such as military drills, and athletic, and other physical exercises. Hence, sleep may be forfeited to accommodate increasing time allotted for competing activities. These activities necessitate long hours, stressful environments, and high rates of conditions like post-traumatic stress disorder that contribute to high rates of sleep issues at the NDA and similar military institutions. Arguably, other sources of post-traumatic stress disorder stem from the general insecurity environment in Nigeria. For instance, NDA is located in Kaduna State, North-west Nigeria - a region notorious for considerable insecurity and violence, which have only gotten worse in recent years. The NDA (Afaka Campus) itself was attacked by bandits in 2021.[56] Largely, the Nigerian Armed Forces are constantly embroiled in counterinsurgency operations mostly in the north-east vs Jihadists but also the rest of the north vs *bandits* (who sometimes cooperate with Jihadists), the south-east vs neo-Biafran separatists and the

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[52] J. Shay "Ethical standing for commander self-care: the need for sleep," *Parameters,* 28(1998): pp. 93–105.

[53] P. Kulkarni, *NDA cadets will now get six hours sleep at night*. (2013). Available at: http://archive.indianexpress.com/news/nda-cadets-will-now-get-six-hours-sleep-at-night/1108225/

[54] N.L. Miller, L.G. Shattuck, and P. Matsangas, "Longitudinal study of sleep patterns of United States Military Academy cadets," *Sleep* 33. 12 (2010): pp. 1623-31. doi: 10.1093/sleep/33.12.1623. PMID: 21120124; PMCID: PMC2982732.

[55] S.G. Williams, J. Collen, E. Wickwire, C.J. Lettieri, and V. Mysliwiec, "The Impact of Sleep on Soldier Performance," *Current Psychiatry Reports,* 16(2014): p. 459. DOI 10.1007/s11920-014-0459-7.

[56] K. Omonobi, D. Akinrefon, E. Usman, & I. Hassan, Attack on NDA: No where is safe any more in Nigeria, bandits are in total control — Retd AVM Ararile(2021). Available at: Attack on NDA: No where is safe any more in Nigeria, bandits are in total control — Retd AVM Ararile (vanguardngr.com)

south-south vs Niger Delta militants. Many of the cadets come from these areas and have experienced insecurity in their growing up, and military instructors know that the cadets will later serve in these *trauma-induced* operations.

Methodology

A qualitative approach was used in a two-phase methodology in this study. The methodology applied is thus a combination of two different qualitative approaches: (a) direct observation and (b) in-depth interviews – both recommended as an effective way to study 'hidden' populations.[57]

Direct Observations

Observation as a research tool is said to be "the fundamental base of all research methods"(1994: 389).[58] Observation in this study serves as a process through which research subjects, interacting in their natural settings, are studied so that their conduct and expressions can be situated into their proper context. This helps to capture the essential flow of participants' everyday experience, and detection of patterns, concepts, trends, and categories in the course of the fieldwork. Fieldworks were carried out between November 2021 and May 2022 in the Afaka campus of the NDA, Kaduna. The researcher unobtrusively observed several cadets' classes at different lecture periods from different course levels (i.e., year 1 to year 4). Also, the teaching and learning infrastructure at different departments/faculties' classrooms and lecture theatres were surveyed and the conditions of these facilities were recorded. Furthermore, observations were equally made at forums where policy and strategic pronouncements concerning training quality, welfare, and well-being of cadets were made. Such meetings include the Academic Board Meetings, and Commandant's Durbar (i.e., general assembly), at which

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[57] S. Sifaneck, and A. Neaigus, "The Ethnographic Accessing, Sampling and Screening of Hidden Populations: Heroin Sniffers in New York City," *Addiction Research and Theory*, 9, (2009): pp. 519-543. 10.3109/16066350109141130.

[58] P.A. Adler, and Adler, P. "Observational Techniques." in N.K Denzin, *Handbook of Qualitative Research* and Y.S. Lincoln, (eds.), , Thousand Oaks, CA: Sage Publications, 1994, pp. 377-392.

the Academy Commandant bares his mind and articulates policy decisions and strategic interventions in all aspects of the Academy life.

In order to enhance external validity, situation sampling [59] which involves observing the situation in more than one condition in different locations, and under different circumstances and conditions was adopted. Hence, separate observations were carried out at different times, in different classes, and in different year cohorts. Notes and accounts were compared on a regular basis, which aside from helping in coordination also enhanced fieldwork activities.

In-depth Interviews

A general interview guide approach was adopted; this helped in designing a list of open-ended questions, themes and issues for discussion with participants. This approach ensures key points revolving around the academic pedagogy, military training/drills, culture, and relationships, were stimulated in discussions. Hence, preliminary context-free questions were asked; including (1) sleep routine (2) military and academic schedules (3) indoctrination process (4) availability and condition of relevant teaching and learning infrastructure. Subsequently, an interpretive scheme is generated to articulate the knowledge, beliefs and values underpinning academic pedagogy in NDA. The participants (25) are carefully selected from different faculties of the academy (see Table 1) and also from the instructor cadre. The ten lecturers consist of three Professors, three Senior lecturers, and four junior lecturers. There are ten cadets from different departments in the Academy's five faculties (Faculty of Arts and Social Sciences, Faculty of Management Sciences, Faculty of Science, Faculty of Engineering and Technology, Faculty of Military Science and Cyber security).

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[59] J.J. Zechmeister, E.B. Shaughnessy, and J.S. Zechmeister, *Research methods in psychology* (8th edn.). Boston: McGraw-Hill, 2009).

Table 1: Participants' Data

Nos.	Category	Faculty/Unit	Gender	Years in the Academy
1	Cadet	Military Science	Male	1
2	Cadet	Military Science	Male	1
3	Cadet	Management Sciences	Male	2
4	Cadet	Management Sciences	Male	2
5	Cadet	Arts and Social Sciences	Female	3
6	Cadet	Arts and Social Sciences	Female	3
7	Cadet	Science	Male	3
8	Cadet	Science	Male	4
9	Cadet	Engineering & Technology	Female	4
10	Cadet	Engineering & Technology	Female	4
11	Lecturer	Arts and Social Sciences	Female	15
12	Lecturer	Arts and Social Sciences	Male	20
13	Lecturer	Engineering & Technology	Male	32
14	Lecturer	Engineering & Technology	Male	23
15	Lecturer	Science	Male	18
16	Lecturer	Science	Female	17
17	Lecturer	Management Sciences	Female	10
18	Lecturer	Management Sciences	Female	5
19	Lecturer	Military Science	Male	11
20	Lecturer	Military Science	Male	6
21	Instructor	Physical Training	Male	5

22	Instructor	Physical Training	Female	8
23	Instructor	Weapon Training	Male	11
24	Instructor	Drill	Male	14
25	Instructor	Tactics	Male	3

Source: Fieldwork

Data Organisation

Participants' responses were collected, collated and analysed. The researcher referred back to the respondents if the reasons were not clear or if a reason had emerged that the researcher was unaware of its existence.[60] Therefore, strategies such as respondent validation,[61] where the interpreted data was shared with the respondents to check its accuracy and its resonance with their views and experiences, were employed.

Collected data were ascribed open codes as suggested by Dey[62] to represent major/minor issues, context data or phenomenon-specific data, supporting or contrasting facts. This was followed by axial coding, which involved the re-grouping of open codes and/or merging sub-codes systematically. This, as endorsed by Richard,[63] was planned to enhance interpretations and reflections in meaning formations. Next, categories of meanings were created to begin acquiring themes which were consequently organised and ordered on importance, significance, credibility, and uniqueness relative to the research topics. Similarities (convergence) and differences (divergence) in sets of data and themes produced were detected, and divergences and conflicting evidence were subjected to further scrutiny for clarification and explanation. A team of three experts was used to perform independent assessments on some of the data and individual interpretations were synchronised and matched in later meetings. The team served as a peer review panel to resolve controversial issues and advance valuable insight. Thus, the

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[60] M., Saunders, P. Lewis, and A.Thornhill, *Research Methods for Business Students*. (Pearson Education Ltd., Harlow.,2012.

[61] L. Birt, S. Scott, , D. CaversC. Campbell, and F. Walter, "A Tool to Enhance Trustworthiness or Merely a Nod to Validation?" *Qualitative Health Research* 26, 13 (2016): pp. 1802-1811.

[62] I. Dey, (1993). *Qualitative Data Analysis*. London: Sage. DOI: https://doi.org/10.4324/9780203412497

[63] , L Richards (2005). *Handling Qualitative Data: A Practical Guide*. London: Sage Publications.

team served as a reflexive instrument to steer and arbitrate the researchers' possible taken-for-granted inferences.

Findings And Analysis

Three main themes that encapsulate the thrust of this study were obtained from the data. These themes are the training and sleep routines, cultural tensions, and infrastructure deficit. Verbatim citations are amply employed to buttress and authenticate the themes as a means of understanding what is needed to improve cadets' academic education in the Academy.

Training and Sleep Routines

Rigorous and sustained military physical exercises are a reality in the NDA. These are done under pressure from instructors, officers, and senior cadets, ensuring that cadets meet the very exacting standards of discipline in the academy. The established military culture encourages cadets to appear *superhuman* in their abilities to perform optimally, even on only a few hours of sleep per night. They are expected to be tough, not only on themselves, but also on their subordinates, and unmindful that they are operating with a lowered cognitive function. Invariably, sleep deprivation is widespread amongst cadets in NDA because they live in a system that largely promotes minimal sleep. The burden of physical exercises and academic work prevents cadets from achieving sufficient sleep time causing poor sleep hygiene. This finding is similar to Hershner and Chervin's[64] claim that academic work and technology-driven social activities cause sleep deprivation among university students.

Findings indicate that most of the cadets do not get the recommended minimum sleep in the Academy. In theory, in the cadets' basic training programs, bedtime is usually 2300 hrs, or 11 p.m., except during times of special events, such as night exercises (see Table 2 for schedules). During cadets' training, lights out signifies bedtime and no one is allowed to do any other activity but sleep. Falling asleep at night is not a problem given

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[64] S.D. Hershner, and R.D. Chervin, "Causes and consequences of sleepiness among college students," *Nat Sci Sleep* 6 (2014): pp. 73–84.

the strenuous activities of the day. However, in practice, it is very difficult for cadets to be alert and not fall asleep during class time. In the words of an instructor: "Certainly, cadets are having less than the recommended hours of sleep per night. Persistent sleep deprivation may hinder their chance of thriving in their academic pursuits." Along a similar line of thought, a senior Professor declared: "In order to be able to fully flourish under the education and training programs at NDA, a cadet needs adequate sleep." Adults need seven to nine hours of sleep, and people with physically demanding lifestyles such as military personnel and athletes may need more.[65] However, a minimum of six hours of sleep at night is suggested to be good for cadets.[66]

The problem of sleeping during academic lectures spawned by the intensity of military drills and exercises confounds many lecturers in NDA. A lecturer confirmed that he tried all manner of tricks and innovations to keep cadets awake during lectures. According to him, following suggestions from a set of cadets, he distributed mint sweets to cadets during lectures to stimulate alertness but to no success. He said: "They all go to sleep as soon as they finished licking the sweet….some were even sleeping while licking the sweet!" Another lecturer said that she is sometimes pressed to call in passers-by senior cadets to dissuade cadets from sleeping in her class. Furthermore, several lecturers agreed with the suggestion that sleep deprivation is largely responsible for the perceived poor academic performance among cadets. A senior academic rhetorically pontificated: "How do you expect cadets to perform well in their studies when all they do is sleep in class during lectures?"

The positive relationship between learning and sleep, particularly in terms of memory consolidation has been established in the literature. Several researches have shown that remembering new information (especially among young adults in academic environments) is enhanced by sufficient amounts of sleep.[67] The sleep patterns of cadets are continually disrupted with reduced sleep periods and inflexibility in opportunities

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[65] A.M. Watson, "Sleep and Athletic Performance," *Current Sports Medicine Reports* 16, 6 (2017): pp. 413-418, doi: 10.1249/JSR.0000000000000418.

[66] P. Kulkarni, "NDA cadets will now get six hours of sleep at night," (2013). Available at: http://archive.indianexpress.com/news/nda-cadets-will-now-get-six-hours-sleep-at-night/1108225/

[67] N.L. Miller, L.G. Shattuck, , P. Matsangasand J. Dyche, (2008a). "Sleep and Academic Performance in U.S. Military Training and Education Programs," *International Mind, Brain, and Education Society* 2, 1, pp. 29-33.

for restorative sleep when they are subjected to academic rigour and physical demands of military training regimes such as those obtained in military academies. [68] Many lecturers attested that on various occasions when a cadet is woken from his/her napping in class, sleep inertia sets in. Sleep inertia refers to the period after an individual when awoke feels confused, sluggish, disoriented, and/or not motivated. It has been recognised that there is considerable performance impairment in cognitive tasks during sleep inertia[69]. Sleep inertia following a nap can pose a short-term problem for performance. Naitoh et al.[70] found sleep inertia to worsen in proportion to the cumulative sleep debt. Historically, many members of the military view sleep as an indulgence; sleep deprivation in the interest of duty is much valued.[71] Sleep deprivation is very common in military life, particularly during training, demanding manoeuvre periods, and combat.[72]

Many studies in the past have shown that sleep deprivation does correlate with poor academic performance because of lower cognitive abilities in cognition as a result of poor sleep quality. For instance, Kelly et al.[73] found that sleep deprivation affects a student's ability to perform well in his/her classes. Gilbert and Weaver[74] also found that sleeplessness interferes with a student's academic, extracurricular and vocational activities just as Sahin et al.[75] observed that sleep quality and daytime sleepiness produce

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[68] N.L. Miller, L.G. Shattuck, , P. Matsangasand J. Dyche, (2008a). "Sleep and Academic Performance in U.S. Military Training and Education Programs," *International Mind, Brain, and Education Society* 2, 1, pp. 29-33.

[69] D.F. Dinges, and N.B., Kribbs, *Performing while sleepy: effects of experimentally-induced sleepiness. Sleep Sleepiness and Performance*, Timothy H. Monk. John Wiley and Sons Ltd 1991: pp. 97-128.

[70] P Naitoh, T. Kelly, and H. Babkoff, "Sleep inertia: Is there a worst time to wake up*?" Naval Health Research Center Technical Report*(1991). pp. 91-45, San Diego.

[71] J. Shay . : Ethical standing for commander self-care: the need for sleep," *Parameters,* 28, (1998): pp. 93–105.

[72] N.L. Miller, L.G. Shattuck, and P. Matsangas, . "Sleep and fatigue issues in continuous operations a survey of U.S. Army Officers," *Behavioral Sleep Medicine* 9, 1 (2011): pp. 53-65. doi: 10.1080/15402002.2011.533994.

[73] W.E. Kelly, K.E. Kelly, and R.C. Clanton, "The Relationship Between Sleep Length and Grade-Point Average Among College Students," *College Student Journal* 35, 1 (2001): pp. 84-86.

[74] S.P. Gilbert, and C.C. Weaver, "Sleep quality and academic performance in university students: A wake-up call for college psychologists." *Journal of College Student Psychotherapy* 24, 4 (2010)., pp. 295–306.

[75] E.M. Sahin, L. Ozturk, D.G. Oyekcin, and A. Uludag, "Effects of Sleep Hygiene Education on Subjective Sleep Quality and Academic Performance," *Journal of Clinical Analytical Medicine* 7, 3 (2016): pp. 304-8.

decreasing academic performance. Likewise, Medeiros et al. [76] found a connection between sleep deprivation and poor academic performance. In the words of a lecturer: "I constantly struggled to keep cadets awake in my class, which explains why they barely pass my course….I have not had cadets scoring 70 percent in many years of teaching at the Academy". Grades and other performance measures suffer when adolescents and young adults experience restricted sleep schedules.[77] Essentially, it is well-documented that sleep deprivation leads to performance degradation (e.g., Belenky et al.[78]). Studies have also indicated that chronic sleep deprivation is a major problem in the Military Academies and environment.[79]

Table 2: NDA Cadets' Daily Time-Table of Events

S/N	TIME	ACTIVITY
1	04:00 – 05:00	Muster Parade
2	05:00 – 07:30	First Period
3	08:00 – 14:00	A-branch (i.e., lecture periods)
4	14:00 – 15:00	Lunch
5	16:00 – 18:00	Games
6	18:00 – 20:00	Prayers
7	20:00 – 22:00	Prep
8	22:30 – 23:00	Checking
9	23:00 – 03:00	Light Out
10	03:00 – 04:00	Housekeeping ("Jikapa")

Source: Fieldwork

[76] A. Medeiros, D. Mendes, and J. Araujo, "The Relationships between Sleep-Wake Cycle and Academic Performance in Medical Students," Biological Rhythm Research - BIOL RHYTHM RES. 32. (2003). pp. 263-270. 10.1076/brhm.32.2.263.1359.

[77] N.L. Miller, , L.G. Shattuckand P. Matsangas, "Longitudinal study of sleep patterns of United States Military Academy cadets," *Sleep* 33. 12 (2010): pp. pp, 1623-31. doi: 10.1093/sleep/33.12.1623. PMID: 21120124; PMCID: PMC2982732.

[78] G.Belenky, N. J. Wesensten, D. R. Thorne, M. L. Thomas, H. C. Sing, D. P. Redmond, et al. "Patterns of performance degradation and restoration during sleep restriction and subsequent recovery: a sleep dose-response study," *Journal of Sleep Research*, 12, 1-12; H.P.A. Van Dongen, G. Maislin, J.M. Mullington, and D.F. Dinges, The Cumulative Cost of Additional Wakefulness: Dose-response effects on Neurobehavioral functions and sleep physiology from chronic sleep restriction and total sleep deprivation, *Sleep*, 26, 2(2003).

[79] N.L. Miller, P. Matsangas, and L.G. Shattuck, "Fatigue and its effect on performance in military environments," In *Performance under stress.* P. A. Hancock and J.L. Szalma (Eds.), ((Burlington, VT: Ashgate Publications, 2008), pp. 231– 259.

Military Culture and Cultural Pressures

Generally, NDA offers a regimented daily schedule to help cadets focus by limiting distractions and free time. Cadets are mandated to follow established rules and regulations. Stern punishments are meted out for infractions. The typical breaches committed by cadets are largely not any more severe than what may be obtained in other military academic settings. The most common violations of NDA's regulations include such minor issues as (a) failing to keep one's dormitory to the required level of orderliness and cleanliness (b) failing to present a uniform that meets the standard requirements for being neat and orderly (c) failing to be prepared for training, drills, and classes. Year one cadets, commonly referred to as *clowns*, are the typical *beast of burden*, i.e., they are at the bottom rung of the encumbrance chain. This cohort (aged between 16 and 19), fresh from *Civvy Street*, always struggled to fit into a new life at the Academy. Since they are the most junior in the hierarchy, they bear the burden of chores and demanding routines. An instructor said: "Clowns are regarded as subservience and at the beck and call of everyone at the Academy." Junior cadets are particularly vulnerable to gruelling schedules, for instance, they are expected to take care (e.g., washing & ironing) of their seniors' uniforms and carry out other chores assigned to them by their seniors. Cases of more serious violations of the Academy's codes attract more impactful reprimand actions. For instance, higher-level infractions such as violations of academic honesty and integrity, which include examination malpractices, dishonestly, or excessive cruelty (against a junior cadet) may lead to dismissal. Senior cadets are allowed to reinforce the Academy's code of conduct by making on-spot corrections if they observe a cadet diverting from the policy. The order of seniority is strictly observed and junior cadets are in awe in the presence of their seniors. According to a lecturer: "senior cadets do put the fear of God into junior cadets and I regularly employed the services of the senior cadets to discipline unruly cadets in my classroom."

Table 3: Cadets' Lingo

0	TERMINOLOGY	DESCRIPTION/MEANING
1	"CUT FIVE"	Unauthorised sleeping (especially during lectures)
2	"JIKAPA"	Cleaning (rooms & environment)

3	"MAMSA"	Stealing
4	"TIN OUT"	Leave without telling anyone (surreptitious absconding)
5	"OFE"	Unauthorised parade
6	"WAWA YOURSELF"	Respect yourself and behave appropriately
7	"AS PER CHAP"	Looking out rightly okay/decent
8	"RPG"	Way of alerting mates against trouble
9	"WHO OFF LIGHT"	Conceal all contraband items
10	"CLOWNS"	First year cadets
11	"COALITOS"	Short Service cadets

Source: Fieldwork

An important tradition in the induction process of new intakes is prepping. This is a process of orientation of the new intakes in which they are introduced and sensitized to the culture and mores of the Academy. Prepping is an impactful culture in NDA such that new cadets get familiar with and inculcate into the ethos of activities in the Academy. Thus, the act of prepping is fostered to prepare first-year cadets (i.e., clowns) for life in the academy. A year four cadet respondent said: "It is during the prepping period 'clowns' are indoctrinated and instilled with what to do and not to do. For example, new cadets are advised to take the G-branch activities (i.e., military training and drills) more seriously than the A-branch activities (i.e., academic lectures)". A year two cadet added: "Our seniors largely apprised us about the customs at NDA in our first year…... I and my mates are doing the same to the 'clowns'. Another senior cadet said: "The A-branch offers a valuable escape channel from the rigours of the G-branch, thus, cadets (junior or senior) have come to regard the academic session as an arena to rest, relax, and sleep." It is then not surprising that cadets see the lecture rooms as valuable respite, not only from the stresses of military exercises, but also from the penal clutches of instructors, officers, and senior cadets. The lecturers (mostly civilians) seem unable to stop or curtail sleeping in the classroom. A lecturer admitted: "Fifty percent of my allotted teaching time was usually spent trying to wake sleeping cadets". Even when I ask them to stand up to curb

sleeping, they still sleep while standing". An officer corroborated by saying: "A well-trained cadet/soldier must be able to nap or sleep on his/her feet. So asking cadets to stand up during lectures, as a form of punishment, does not necessarily stop them from sleeping."

The belief that the G-branch is superior to the A-branch is constantly reinforced by the top echelon of the Academy. For instance, the Commandant has, on many occasions, demonstrated that military training is more important than academic undertakings. In an address to the cadets during a sporting competition among cadets, the Commandant said: "You must realise that even if your GPA (Grade Point Average) score is 99.9 percent, you cannot graduate if you fail to achieve the minimum standard in your military exercises". Of course, the Commandant is right to emphasise the importance of military training, but not at the expense of academic tuition. After all, cadets cannot also graduate if they failed to pass their examinations. Cadets appear to take the Commandant's injunction to mind; for example, a first-year cadet remarked: "We have been told that military training is all you need to focus on to be successful at the Academy." In apparent corroboration, a fourth termer (year four) said: "Most of us concentrate more on the military exercise and barely pay attention to academic work……..getting the minimum score to get by is all we struggled to achieve." A senior Professor said: "The management of NDA believes that the ratio between the military training component and academic studies should be 60/40….I have heard one Commandant even saying the ratio must be 70/30 in favour of military training."

The military, and by extension NDA, loves to maintain its traditions and rarely change. The mode and methods of cadets' training hardly changed since the inception of the NDA. For example, an instructor observed: "Everybody at NDA knows why cadets sleep in class…..cadets will continue to sleep in class given the mentality of officers at NDA. Officers tend to be dogmatic and immune to innovation in approach. Most of them resist change and tend to have the attitude that "We all did it, what's wrong if he (cadet) does it?"

Another military culture that permeates the Academy is in military deployment/posting. Military personnel are routinely posted out after two to three years to other military formations. However, the civilian staff, headed by the Academy Provost (AP), have a more secured tenure at the NDA. For instance, many Professors and non-

teaching staff have spent more than thirty years at the Academy. Whereas, military personnel (e.g., Commandants) are generally redeployed after two years in the Academy. Due to the transience of their tenure, policies and strategies are constantly changing – depending on the incumbent Commandant's whims and caprices. According to a senior academic: "There is no consistency in policy formulation or execution at NDA due to constant change in the military echelon at NDA. In the parlance of a senior instructor: "Commandant comes Commandant goes, NDA remains." In the view of an instructor: "The NDA acronym is apt as it stands for 'No Definite Arrangement.'" Invariably, the incessant change of Commandant does not allow for continuity in policy and process implementations.

Infrastructural Decay and Deficit

Teaching and learning infrastructure decay and deficit are sources of concern for both lecturers and cadets at NDA. The state of teaching and learning facilities at the Academy is below the optimum level. Inadequate contemporary teaching aids, outdated textbooks, and broken classroom furniture are just a few of the manifestations of an infrastructure deficit that is undermining teaching and learning efficiency and subsequently lowering the quality of pedagogy in NDA lecture halls/rooms. Erstwhile operational teaching equipment such as electronic lecture lectern and interactive whiteboard are broken and in a state of disrepair. Modern lecture halls/rooms should contain (a) classroom equipment including presentation equipment, e.g., interactive whiteboard and projectors, or other interactive display system with software and accessories; (b) instructional materials, e.g., teacher textbook edition and resources, student textbooks, lesson plan and subject workbooks; (c) lesson development and curriculum software package; (d) program equipment, e.g., student computer, modification equipment such as hearing, vision, mobile devices.

During the observation stage of this study, the researcher undertook an audit of learning and teaching facilities and discovered that only twenty-five lecture halls/classrooms (out of seventy-two) have functioning projectors, thus, the majority of lectures are delivered through note dictation to cadets. Other teaching aids such as computers, and textbooks, are in short supply or mostly unavailable. Facilities like electric sockets, lights, fans and air conditioning, WiFi connections, etc., are deficient

and/or in a state of disrepair. The chairs in many of the classrooms and halls are in poor shape and very uncomfortable. On many occasions, lecturers are unable to capture the attention of the cadets long enough to enable quality pedagogy. The chairs and tables in the classrooms are Spartan and, in the view of a lecturer: "The chairs and tables are not comfy or relaxing for cadets to assimilate lectures." However, in the opinion of an instructor, furniture, structures, schedules, and discipline are not supposed to make life comfortable for cadets. Cadets, according to him, must rise to the demands and high expectations of the military training environment.

Proper infrastructure also motivates teachers. Apart from creating the right environment for students, teachers also need a motivating atmosphere to impart knowledge to the students. Creative classrooms, interactive boards, availability of natural lighting and proper ventilation ensure good comfort for teachers to impart knowledge and for students to learn. A clearly exasperated lecturer informed the researcher of his frustration in the classroom: "Cadets are so passive in the classroom even when not asleep they are not active.....they hardly pay attention or respond to questions." This sentiment, also expressed by other respondent-lecturers, seems to point to the fact that many lecturers find cadets' classes monotonous and tedious. According to Lazuardi et al. [80], paying attention to the explanation from the teacher, answering questions contextually, following the class discussion actively, and interacting with the teacher and other students are some of the indicators of active student learning. Active student learning could be facilitated by technology as a part of the ecosystem via smart classrooms and other IT infrastructural developments, which are lacking in the Academy's lecture rooms and theatres. A cadet, who claimed to have spent one year at a private university in Nigeria before getting admission to NDA said: "I found it strange that most lecturers dictate notes and PowerPoint presentation was not available to instruct cadets unlike in my previous institution." Upgrading and maintenance of class/lecture rooms facilities are needed towards improving educational teaching and learning at the NDA. A study by Evwiekpaefe and Lawi[81] indicated that educational

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[80] M.A. Lazuardi, S. Titik, and Agustiningsih. "Penerapan pendekatan pembelajaran matematika realistik untuk meningiatan aktivitas dan hasil belajar siswa pada materi trapesium dan layang-layang," *Jurnal Edukasi*, 3, (2017): pp. 15-19.

[81] A. Evwiekpaefe, and V.P. Lawi, "The Effect of Educational Technology on Cadets' Academic Performance in a Military University," *The IUP Journal of Information Technology*, Vol. XVI, No. 4, December 2020, pp. 26-41, Available at SSRN: https://ssrn.com/abstract=3818014.

technology usage has a positive effect on performance expectancy, effort expectancy, behavioural intention, and teaching effectiveness on cadets' academic performance.

Discussion

Similar to others (e.g., Belenky et al.; Van Dongen et al.).[82] this study reveals that sleep deficit may lead to educational performance degradation among cadets. Studies have also indicated that soldiers' effectiveness in combat is reduced by 15 percent to 25 percent when they get fewer than four hours of sleep per night.[83] Likewise, studies of the US Army Rangers show that their testosterone levels are lower after the sleep deprivation they suffer during training, at a time when they need it most for muscle repair and recovery.[84] Whereas, with adequate sleep, cadets are likely to show a higher propensity towards high educational achievement. For instance, Moon and Twigg[85] established a positive relationship between adequate sleep and cadet force training and a range of outcomes, including personal and social development, key skills, and employability. Sleep deficit in the Academy has been traced to the demanding nature of military training coupled with the stern disciplinary environment of the Academy.

However, cadets' poor educational performance is not fostered by sleep deficit alone. Evidence from the data suggests lack of requisite teaching/learning facilities is also a factor. Most of the available teaching aids/facilities are not maintained.

[82] G. Belenky, N. J. Wesensten, D. R. Thorne, M. L. Thomas, H. C. Sing, D. P. Redmond, et al. "Patterns of performance degradation and restoration during sleep restriction and subsequent recovery: a sleep dose-response study," *Journal of Sleep Research*, 12(2003): pp. 1-12; H.P.A. Van Dongen, N.L. Rogers and D.F. Dinges, Sleep debt: "Theoretical and empirical issues," *Sleep and Biological Rhythms,* 1(2003): pp. 5-13.

[83] T. Ryan, *Sleep in the Military*. (2022). Available at: https://www.sleepfoundation.org/sleep-in-the-military#:~:text=While%20there%20is%20a%20growing%20awareness%20of%20the,and%20tend%20to%20view%20needing%20sleep%20as%20%E2%80%9Cweak.%E2%80%9D
 (Accessed on 5 March 2021).

[84] T. Ryan,). *Sleep in the Military.* (2022Available at: https://www.sleepfoundation.org/sleep-in-the-military#:~:text=While%20there%20is%20a%20growing%20awareness%20of%20the,and%20tend%20to%20view%20needing%20sleep%20as%20%E2%80%9Cweak.%E2%80%9D
 (Accessed on 5 March 2021).

[85] G. Moon, L. Twigg, and J. Horwood, "The Societal Impact of Cadet Forces," (2010). A Report Prepared for the Council for Reserve Forces' and Cadets' Associations. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/28107/FinalreportNovember08th.PDF.

Notwithstanding, the issue of deteriorating educational infrastructure is not confined to NDA but all of Nigeria's public universities (which are by far the biggest ones in the country – private universities are numerous but tend to be small). Nigerian public universities are chronically underfunded and plagued by labour unrest.[86] NDA is actually better than most of them in many ways.

Equally germane is the culture that tends to prioritise military training over academic training and the indoctrination (through prepping) of cadets to see the A-branch as a site of refuge from the punishing military training milieu of the G-branch. The symbolic boundary between the two branches is distinctively marked. Essentially, the institutional complexities appear to play a major role in military training and academic learning in the Academy. The separate logic of the G-branch and the A-branch provide different sets of procedures for action. Thus, cadets tend not to take academic learning as seriously as military training. As established in the literature, actors (e.g., cadets) engage in multiple logics (e.g., A-branch and G-branch) and face institutional complexity and its accompanying tension (e.g., Smets et al.).[87]

Recommendations

Cadets are expected to become officers in the military after graduation and as such will be responsible for the overall well-being (e.g., physical, emotional, and spiritual) of the soldiers under their command. It behooves designers of military training curricula to understand that, as potential officers, the cadets and their soldiers' physical well-being is easily endangered by insufficient sleep. Recommendations to improve sleep hygiene and improved pedagogy/learning at NDA include the following:

> 1. Ensuring the published time schedule for light-out is strictly observed and enforced; duty officers should be deployed to patrol cadets' dormitories to guard against rule-breaking. Seniors are known to keep

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[86] T. Ogundare, "Nigerian universities are grossly underfunded — SSANU," (2024). Available at: Nigerian universities are grossly underfunded — SSANU (zawya.com).

[87] M. Smets, P. Jarzabkowski, G. Burke, and P. Spee, "Reinsurance trading in Lloyd's of London: balancing conflicting-yet-complementary logics in practice," *Academy of Management Journal* 58, 3 (2015): pp. 932–970.

junior cadets awake for all sorts of pretexts. CCTVs may also be fitted in the dormitories to ensure sleep time directives are strictly adhered to.

2.   A thirty-minute break for the siesta could be incorporated into the A-branch timetable, i.e., cadets could be allowed to take a short nap between lecture periods. Research has shown that short 15- to 30-minute quick naps can generate extra bursts of energy and alertness, but longer naps are even shown to benefit learning, memory, and cognitive function.[88] Axelsson and Sundelin[89] explicate that the many complex neural processes that take place while people nap are largely responsible for helping their brains stay in good shape. However, napping can also be harmful as it can interfere with the ability to fall asleep at bedtime (though not really applicable to cadets).

3.   Lecturers need to be proactive in their delivery and organisation of lectures. Cadets can be kept awake and engaged with physical movement and mentally stimulating activities in a well-lit classroom. A refresher course or training in classroom management for lecturers will also help. Lecturers should be able to fashion and adopt innovative methods to engage the attention of cadets during classroom activities.

4.   The provision of facilities such as a water cooler, interactive teaching boards, adequate lighting, etc., will help to foster stimulating teaching and learning activities for both lecturers and cadets. Many of the dilapidating classrooms' teaching and learning facilities should be renewed and updated.

5.   An unambiguous message about the importance of academic performance should be communicated to cadets just as the importance of military training is constantly emphasised. Thus, a standard codified message arranged in a systematic way, and approved by the NDA governing board (or similar body) on the significance of academic training

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[88] A. Fry, "Napping," (2022). Available at: https://www.sleepfoundation.org/sleep-hygiene/napping

[89] J. Axelsson, and T. Sundelin, "Give it a rest: why afternoon naps can improve memory and alertness," (2021). Available at: https://www.independent.co.uk/health_and_wellbeing/afternoon-nap-benefits-good-bad-b1812999.html

must be instituted for subsequent Commandants to reiterate to cadets as required. This will forestall deviations and aid consistency in policy enactment and implementation.

6.   Military instructors and officers must develop new outlooks and perspectives in developing innovative training regimens for cadets at NDA. There is a need to make military/physical training more scientific and less stressful without losing efficiency. Officers and instructors should embrace change and adopt modern views in cadet training and education. Seminars and development programs designed to alert military trainers to global best practices should be encouraged.

7.   Perhaps in a radical move, military training and academic programs at NDA could be reorganized such that both programs will not be simultaneously conducted. For instance, military training could be alternated with academy learning on a six-monthly rota basis so that each will be conducted uninterrupted at intervals (could be quarterly, or bi-annually). This recommendation will appear to be a throwback to the pre-reform professionalization era of the 60s before the introduction of degree programs and cadets have only the military training to contend with. On reflection, the question could be asked: Did professionalization of the 70s/80s go too far and combine things that should not be combined? This question sign-posts further research work on the subject.

Concluding Remarks

Despite an increasing interest in the specific manifestation of sleep on students' activities and performance, the literature is still confronted with a black box approach, which is capable of describing the effects of sleep deprivation on people in different contexts, but has difficulties demonstrating the link between sleep deprivation and cadet

poor academic assimilation and performance. This study addresses this knowledge gap, attempting to provide a factual basis for the Nigerian Defence Academy's administrative discussion of policy options that may be implemented in order to optimise cadet sleep. The importance of adequate sleep for a member of the military, getting the right amount of sleep can mean the difference between life and death. For instance, a Pentagon study finds that combat fatalities are reduced by 20 percent when soldiers get enough sleep prior to their mission.[90] Furthermore, it is important to note that senior officers in the Nigerian military are required to engage in higher level academic education including obtaining post-graduate degrees (Masters's and Doctoral level) and attending institutions like the Armed Forces Command and Staff College, Jaji and the National Defence College (NDC) in Abuja. As such, they need a strong academic foundation which they might not be getting as sleep-deprived cadets doing their undergrad studies at NDA. These findings represent an original contribution to the literature focused on the relationship between sleep deprivation and academic performance in military training institutions, as it demonstrates the existence of a complex feedback loop, in which military training,

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[90] Jason, Human Performance, Jason the Mitre Corporation, Virginia. (2008)Available at: https://fas.org/irp/agency/dod/jason/human.pdf,

culture and infrastructural deficit may impede the quality of academic pedagogy and performance (see Figure 1).
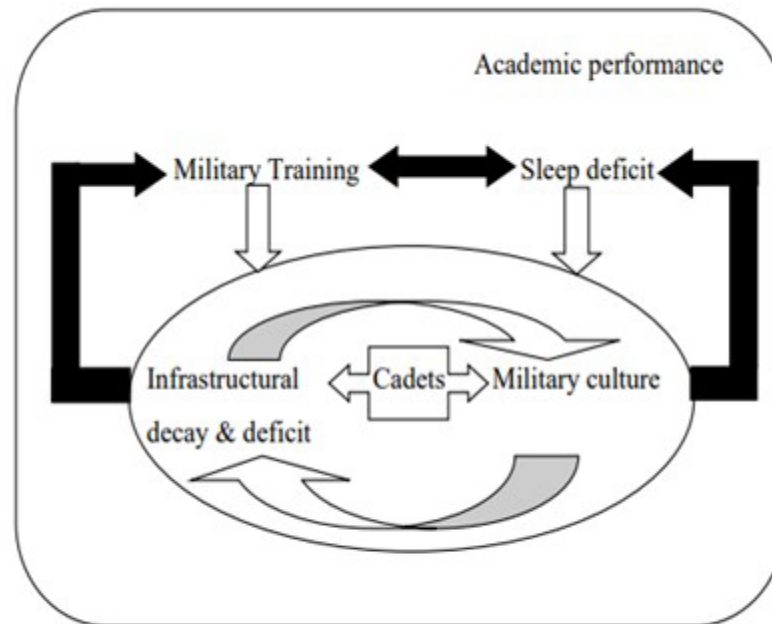

Figure 1. The general dynamics of the relationship between training and sleep routines, military culture and cultural pressures, infrastructural decay and deficit

Figure 1. The General Dynamics of the Relationship Between Training and Sleep Routines, Military Culture and Cultural Pressures, Infrastructural Decay and Deficit.

This research will help in the development of training course requirements for NDA's training program designers that would capture what they need to do to improve cadets' attention during classroom lectures and pedagogy. Developing an effective and implementable program of instruction for proficient cadets depends on balancing requirements for deep and broad knowledge gained in academic teaching, on the one hand, and desired core military training and practical considerations, on the other hand.

Finally, as part of both military training and academic pedagogy, NDA cadets can be exposed to protracted periods of sleep loss. Given the extent of physical and cognitive

performances considered as critical to successful cadetship performance, such sleep disruption may present reduced performance, especially, academic performance. Inadequate sleep appears to have a negative impact on cadets' concentration and academic performance of the cadets.

However, further studies are required to gauge, among other requirements, the specific volume of sleep that is optimal for cadets undergoing military training in the Academy. The difficulties of conducting well-designed and -controlled interventions in military populations are appreciated.