

RESEARCH PROPOSAL TEMPLATE

Student Details

Institution/Centre of Study	UWTSD
Student Family / Surname:	
Student Given / First name:	
Student Number	
Faculty and School	

Proposed Research

Current Proposed Title (20 / 30 words)
To study the bidirectional relationship between perceived stress levels and engagement in exercise or physical activity in college students.
Background & Context – Rationale and Literature Review (approx. 500 words)
There exists an abundance of research demonstrating the well-established health benefits between exercise or physical activity and stress (Blair <i>et al.</i>, 1989). Individuals who exercise or participate in regular physical activity are at lower risk of coronary events and cardiovascular disease (Warburton <i>et al.</i>, 2006). Research suggests a substantial inverse relationship between obesity and diabetes and exercise (Colberg <i>et al.</i>, 2016). Studies have also indicated that in those individuals who do exercise, there are fewer incidents of certain types of cancers, and they maintain a stronger immune system and see a reduction in general physical health problems (Hojman 2017). The positive health benefits of exercise are also seen with regard to mental health. Individuals who participate in exercise appear to suffer with lower rates of anxiety, depression and cognitive confusion. Although the physical and mental health benefits of exercise are well known adherence rates remain low across population groups (Northey <i>et al.</i>, 2018). Stress, a response to any demand that exceeds the individual's ability to cope, is not only psychological, because biology plays an important role in the body's ability to respond and recover from periods of stress. When homeostasis is threatened the body initiates counteractive physiological, neurochemical and cognitive behavioural responses in order to restore homeostasis (Beck and Bredemeier 2016). Individuals with high levels of stress are at increased risk of cardiac events (,Mommersteega <i>et a.</i>, 20160) low functioning immune systems, and are at greater risk of developing infections (Cohen <i>et al.</i>,1991). Stress is also associated with mental health disorders such as, dementia, depression and reduced cognitive function. Studies have shown that these factors may impact on the individual's health, leading to poor health and lifestyle behaviour choices, such as disengagement from, or reduced levels of, exercise and physical activity. Therefore,

stressed individuals are more likely to engage in sedentary behaviour (Hamer 2012). Stress tends to build up over a period and the accumulative effect of sustained stress has an acute impact on the individual's health.

Research into the association between stress and exercise, centres around the positive effects of exercise on stress levels (previously stated). However, a body of research has determined that the association between stress and exercise is bidirectional. A review of the literature concluded that an inverse (negative) association existed in a majority of the studies (Stults-Kolehmainen and Sinha 2014). This may suggest that stress negatively influences health behaviour such as alcohol, drug and smoking abuse, and stress impedes the ability of an individual to take part in exercise or become more physically active.

This study aims to add to the current literature by evaluating the association between stress and exercise in university students. The transition to university has many challenges and stress is not uncommon on university campuses and this can be detrimental to health. If the lack of physical activity or engagement in exercise can predict stress in an individual, then strategies could be directed at the causes of the stress. Maintaining lower stress levels through exercise and physical activity may prove more effective once the underlying causes of stress have been addressed.

Reference list

Blair., S, PED; Kohl III., H, MSPH; Paffenbarger., R, Clark., G, Cooper., K. and Gibbons., L, (1989) "Physical Fitness and All-Cause Mortality A Prospective Study of Healthy Men and Women", *JAMA*, 262 (17), pp. 2395-2401.

Warburton., D., Nicol ., C. and Bredin., S, (2006) "Health benefits of physical activity: the evidence", *The Canadian Medical Association Journal*, 176 (6), pp. 801-809.

Colberg., S, Sigal., R and Yardley., J, (2016) "Physical Activity/Exercise and Diabetes: A Position Statement of the American Diabetes Association", *American Diabetes's Care*, 39 (11), pp. 2065-2079.

Hojman., P, (2017) "Exercise protects from cancer through regulation of immune function and inflammation", *Biochemical Society Transactions*, 45 (4), pp. 905-911.

Northey.,J, Cherbuin., N, Pumpa., K, Smee., D and. Rattray., B, (2018) "Exercise interventions for cognitive function in adults older than 50: a systematic review with meta-analysis", *The British Journal of Sports Medicine*, 52(3), pp.154-160.

Beck., A. and Bredemeier., (2016) "A Unified Model of Depression: Integrating Clinical, Cognitive, Biological, and Evolutionary Perspectives" *Clinical Psychology Science*, 4 (4), pp. 85-92.

Mommersteega., P, Schoemaker., R, Ulrich., N, Eiselblngrid., L, Casper., S, Westerhuisg., B. and Denolleta., J, (2016) "Depression and markers of inflammation as predictors of all-cause mortality in heart failure" *Brain, Behavior, and Immunity*, 57 (1), pp. 144-150.

Cohen., S, Tyrrell., D, Smith., A, (1991) "Psychological stress and susceptibility to the common cold", *New England Journal of Medicine*, 12(1), pp. 325-606.

Hamer., M, (2012) "Psychosocial stress and cardiovascular disease risk: the role of physical activity", *Psychosomatic Medicine*, 74(9), pp. 896–903.

Miller., G, Chen., E and Cole, (2009) "Health psychology: developing biologically plausible models linking the social world and physical health", *Annual Review of Psychology*, 60(1), pp. 501-524.

Stults-Kolehmainen., M. and Sinha., R, (2014) "The Effects of Stress on Physical Activity and Exercise" *Sports Medicine*, 44 (1), pp. 81-121.

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Aims and Objectives (approx. 150 words)

The aims of this study are to identify any relationship between perceived stress levels and levels of physical activity within this university cohort. As previously mentioned, increased stress level is a predictor for negative health outcomes and disruptive behaviour. Physiological factors induced by high levels of, or long exposure to, stress prevent individuals from participating in exercise. Identifying a negative association to exercise in stressed individuals may provide an opportunity to implement interventions directly addressing the causes of their stress. Reducing stress levels in individuals may enable them to start engaging in physical activity. This participation may then be used as a tool to manage and even reduce their perceived levels of stress. Furthermore, it may also be possible to identify stressed students due to their lack of interest and participation in any form of exercise or physical activity. Levels of stress in younger people tend to follow them into adulthood so if strategies can be implemented to manage stress levels the individual would benefit from more positive health outcomes.

Proposed Methodology Including Data Analysis (approx. 500 words):

Participants

Participants would be recruited from UWTSD campus following the university protocols and guidance. This would include short personal pre-lecture recruitment presentations (with prior permission from lecturer). Information posters displayed where allowed, such as general notice board and students union. Pre-arranged presentations for groups of students on campus. The information given would include a brief description about my course of study and why I want to carry out this research. $n = \geq 100$

Method

Once recruited the potential participants will be sent via email a detailed information sheet, which would include:

1. Researcher's contact details and information about what the questionnaires are designed to identify.
2. Information regarding the questionnaires, including how to fill them in and when to return.

3. Contact details of support staff if any concerns are developed for the individual participant whilst completing the questionnaires.
4. The participant will be given the option to opt out at any time during the data gathering process.
5. Information about what, when and how the collected information will be destroyed.
6. The assurance that the all information collected in this study will be processed in accordance with the data protection act 2018 and will remain confidential.
7. The consent form, no further action is possible without a signed consent form.

On receipt of the signed consent forms, the cohort will be sent both questionnaires via email along with any information of how to fill and return the questionnaires.

1. Perceived stress score 10 (PSS-10)
2. International Physical Activity Questionnaire short form (IPAQ-SF)

On receipt of all the completed questionnaires, incorrectly filled out questionnaires will be rejected, and validated scoring criteria applied to the remainder. The data would be analysed and assessed against known research results in this field of research.

Facilities and resources available for the investigation (e.g. dietary analysis software / laboratory equipment): please indicate if you expect to need any special resources

Pre-arranged lecture rooms for participant recruitment presentation.

Private rooms for group participant recruitment presentation.

Introductory Bibliography

Cohen, S., Kamarck, T., Mermelstein, R. (1986). A global measure of perceived stress. *Journal of Health and Social Behavior*. 24 (1), pp. 385-396. PSS 10
