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THE RELATIONSHIP BETWEEN NEUROTICISM AND STRESS

1. INTRODUCTION

Personality is referred to ways a person thinks, behaves, and feels that make them an individual. Stress is a feeling of pressure that can provide a physical, mental or emotional response. Neuroticism is defined as emotional instability, specifically an individual's distressful, threatening and overall negative view of the world. In addition, it is also an independent dimension of personality in terms of Hans Eysenck's research (1960's) where it is paired with stability, a term regarding to calmness and tranquility. Eysenck improved his previous theory with British psychologist, Sybil, referring to a description of an individual's personality depending on how they scored on the two personality factors: extraversion-introversion and emotional stability-instability. In the 1970's, he attached psychoticism to the existing dimensions and described it as 'recklessness or disregard for common sense' (Fletcher & Garton, 2017, p. 119).

Past research by Brittany E. Evans et al. (2016) examined neuroticism and extraversion in relation to physiological stress, using cortisol, heart rate, pre-ejection period and heart rate variability as assessment. As a result, they found a nonexistent relationship between personality and stress reactivity. However, low cortisol reactivity was displayed with adolescents with higher mean level scores on extraversion, whereas adolescents with higher mean levels of neuroticism displayed higher pre-ejection period. Another study by Catherine B. Stroud et al. (2015) found that personality did not predict vulnerability to acute stress.

The aim of this study is to identify the relationship between neuroticism and stress. It is hypothesized that Western Australian high school students who score highly in neuroticism would have an increased amount of stress level measured by a self-report stress level questionnaire, than those who score low on neuroticism.

2. METHOD

A. Participants

Two hundred Year 11 high school students from Joseph Banks Secondary College in Western Australia have been used in the study. Ages ranged from 15 to 17 years, with 40 female students and 40 male students. The sampling method used in this research will be Stratified sampling. This will involve separating the population into

groups based on characteristics they share. The groups they'll be divided into are according to their age (15, 16, and 17). After, they will be randomly selected from these groups 'in the same proportion that they appear in the population' (Kendall, 2015, p. 14).

B. Materials

To conduct this experiment, the following materials will be required:

supplies and equipment

- an online questionnaire with a rating scale consisting of 10 close ended questions regarding neuroticism, 10 close ended questions regarding stress [see appendix 1 attached]

personnel

- **questionnaire coordinator**, responsible for distribution and return of completed questionnaires
- **data entry/recording personnel**, responsible for entering/recording data, ensuring data entered/recorded is correct
- **technical survey manager**, responsible for data analysis and writing or speaking about the final report

C. Procedure

1. consent forms were distributed to the parents of the selected population
 2. consent forms are returned, allowing the study to begin
 3. participants are selected from Joseph Banks Secondary College through stratified sampling
 4. they are randomly allocated into their age groups (15, 16, and 17 years of age)
 5. an email containing the questionnaire is sent to the students at 5:50pm and is expected to be completed that same day at 6:00pm
 6. attached to the questionnaire is a sheet encouraging participants to complete the questionnaire alone, in a quiet room
 7. once the questionnaire is completed, the participants return their answered questionnaires to the questionnaire coordinator
 8. the data returned is then collected, analyzed, and interpreted
 9. the technical survey manager communicates the findings and writes/ speaks about a report
- ii. extraneous variables, their effect and their management will be discussed in the following:
- **standardized questionnaire**, having a non-standardized questionnaire might affect results if factors such as location can cause distractions,

therefore disrupting the participant's response to the questions. This can be controlled with a standardized questionnaire, where the questionnaire and its conditions in which they are taken in, are the same

- **artificiality**, participants may complete their questionnaire in an unnatural environment, thus affecting the results. This can be controlled by encouraging the participants to complete the questionnaire in a familiar room and answer the questions honestly to prevent answers aiming to please the researcher and/or society
 - **participant differences**, participants may have different abilities, some higher and some lower than others. this leads to different perceptions of the questions. To control this, students of equal intelligence, measured by their previous reports, will be sampled.
- iii. uncontrolled variables and justification will be discussed in the following:
- **mood**, this variable will be left uncontrolled to allow for more honest answers.
 - **time limit**, although they are expected to begin at 6:00pm, they are given hours to allow for critical thinking for the questions, resulting in thoughtful answers

3. DATA

The data collected is subjective which is based on one's point of view, feelings, perceptions etc. An advantage of this type of data is that it provides an understanding of a participant's opinions and beliefs, however it is often biased due to personal information required. In addition, it is a self-report which 'cannot be overly seen or measured' (Kendall, 2015, p. 18). This type of data collection once again allows for insight to an individual's behaviour and personality, however it is difficult to compare data between participants, which is similar to qualitative data. This data meets the qualitative data requirements such as expression of words describing the quality of behaviour. The data will be collected online through the return of the completed questionnaires and the results will be organized online to allow for easy access to the public. It is also more time efficient.

4. ETHICAL CONSIDERATIONS

The ethical considerations that need to be taken into account throughout the experiment include the following:

- **informed consent** will be addressed with a consent form that is distributed to the students. An information sheet will accompany the consent form, providing information regarding the study, its procedure, participant rights, and contacts of the research conductors, benefits of the study to society, and how long the subject is expected to participate. Due to their age (considered minors), they will require consent from their parents/ guardians to participate in this experiment.

- **withdrawal rights** will be addressed with written (evident to sheet attached to consent form) and verbal brief given before the study commences. It will inform the participants of their right to leave the study any time they please. This results in their right to withdraw data if pleased.
- **confidentiality** will be addressed by not disclosing the data collected or any personal information unless consent is obtained
- **voluntary participation** will be addressed by ensuring the subjects participate willingly, without any pressure, threats or coercion.
- **deception** will be addressed by not disclosing information about the research to avoid change in behaviour of the participants which impacts the accuracy of the results
- **debriefing** will be addressed by informing the participants the purpose of the study. The researchers will provide access to data, information about the study and counselling if necessary, to participants

5. RELIABILITY AND VALIDITY

Reliability is defined as consistent measures “within themselves and across time” (Fletcher & Garton, 2017, p. 178). This will be ensured by the following:

- researchers will follow the test-retest method which refers to comparison between the performance/results of participants at one time to their performance/results at a later period
- researchers will use researchers that are unaware of the true aim of the study to make observations on the participants to decrease effects of experimenter bias
- researchers will use a standardized questionnaire

Validity refers to research measuring what it claims to measure. This will be ensured including the following:

- researchers will control the extraneous variables identified earlier
- researchers will not disclose information about the study to participants or the fact that they are in a study to prevent the Hawthorne effect, this also decreases the risk of the placebo effect as the participant’s behaviour will not be altered due to their expectation of the study.
- researchers will ensure the population is not bias and represents the larger population

6. CONCLUSION

To conclude, limitations will be discussed in the following:

- **subjective data**, this type of data resulted in bias
- **closed ended questions**, because of this, specific and detailed responses were not obtained
- **time consuming**, participants are given sufficient time to complete the questionnaire

- **different perceptions**, different students have different perceptions of the questions, some may have overthought it.

The results of the experiment could be generalized to the Year 11 population from students in Joseph Banks Secondary College due to the use of random allocation. By using the matched-participants design, participant differences were eliminated, allowing for equal shares of characteristics between the groups. The results of this experiment would be relevant to the research population as it provides a useful questionnaire that can be improved upon for further research. As for psychological research, this study has explored relationship between neuroticism and stress as support for the continuous research into personality traits and stress.

7. REFERENCES

- (2020). Retrieved 6 August 2020, from <https://student.jbsc.wa.edu.au/seqta/student/load/file?type=message&file=03b50972-3423-4139-b652-e8bf7ebb7001>.
- (2020). Retrieved 5 August 2020, from <https://student.jbsc.wa.edu.au/seqta/student/load/file?type=message&file=a5ed492f-7a24-4ac2-b5a6-98ea1e9f7288>.
- Do You Have A Neurotic Personality? Take The Neuroticism Test.* Psychologistworld.com. (2020). Retrieved 7 August 2020, from <https://www.psychologistworld.com/influence-personality/five-factor-test/neuroticism-quiz>.
- Fletcher, J., & Garton, A. Psychology WA Atar: Self & others Units 1 & 2 Workbook (3rd ed., pp. (pp. 40-46). Julie McArthur and Lizzie Allmand.
- Health.qld.gov.au. (2020). Retrieved 4 August 2020, from https://www.health.qld.gov.au/_data/assets/pdf_file/0031/425929/33345.pdf.
- Kendall, K. (2011). *VCE psychology research methods* (2nd ed., pp. 14, 18,). Nelson Cengage Learning.
- Mcleod, S. (2020). *Psychology Research Ethics / Simply Psychology*. Simplypsychology.org. Retrieved 3 August 2020, from <https://www.simplypsychology.org/Ethics.html>.
- Pros and Cons of Objective Tests vs Subjective Tests - CalyxPod / Blogs.* CalyxPod | Blogs. (2020). Retrieved 4 August 2020, from <https://calyxpod.com/blogs/pros-and-cons-of-objective-tests-vs-subjective-tests>.
- Similarminds.com. (2020). Retrieved 2 August 2020, from <http://similarminds.com/cgi-bin/eysenck.pl>.

8. APPENDIX 1

THE PERSONALITY QUIZ LINKED IN THE REFERENCES ABOVE (LAST REFERENCE) PROVIDES A USEFUL QUESTIONNAIRE GREATLY INFLUENCED BY EYSENCK

1. I panic easily
 - ☐ Very inaccurate
 - ☐ Moderately inaccurate e
 - ☐ Neither inaccurate nor accurate
 - ☐ Moderately accurate
 - ☐ Very accurate
2. I rarely get irritated
 - ☐ Very inaccurate
 - ☐ Moderately inaccurate e
 - ☐ Neither inaccurate nor accurate
 - ☐ Moderately accurate
 - ☐ Very accurate
3. I remain calm under pressure
 - ☐ Very inaccurate
 - ☐ Moderately inaccurate e
 - ☐ Neither inaccurate nor accurate
 - ☐ Moderately accurate
 - ☐ Very accurate
4. I often worry about the future
 - ☐ Very inaccurate
 - ☐ Moderately inaccurate e
 - ☐ Neither inaccurate nor accurate
 - ☐ Moderately accurate
 - ☐ Very accurate
5. I often respond well to stress
 - ☐ Very inaccurate

- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

6. I am often troubled by negative thoughts

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

7. My moods often change easily

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

8. I feel extremely sad without a reason for long periods of time

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

9. I see myself as someone that is overly critical

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

10. I see myself as someone that often fears for the worst

- 11. Very inaccurate
- 12. Moderately inaccurate e
- 13. Neither inaccurate nor accurate
- 14. Moderately accurate
- 15. Very accurate

1. I have little to no control of my emotions when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

2. I engage in conversations with strangers without stress

- Very inaccurate

- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

3. I dwell on past mistakes

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

4. I feel stressed when thinking about embarrassing situations

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

5. I find it difficult to calm myself down when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

6. I find it difficult to sleep when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

7. I find it difficult to ask to for help when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

8. I become restless when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

9. My hands tremble when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate
- Moderately accurate
- Very accurate

10. My body sweats a lot when I am stressed

- Very inaccurate
- Moderately inaccurate e
- Neither inaccurate nor accurate

- Moderately accurate
- Very accurate