Candidate 3 evidence

National 5 psychology assignment
Sleep and dream – the effect of the blue light on sleep.

Section A
Sleep is essential for a human beings health and wellbeing. Ensuring you get enough sleep can help protect your mental and physical health along with your quality of life and safety. During sleep your body is working to support healthy brain function and maintain your physical health.
The damage from sleep deficiency can happen in an instant i.e. - a car crash, it can also harm you over time. Ongoing sleep deficiency can raise your risk of chronic health problems. It also affects how well you think, react, work and learn.

Section B
Richard Wiseman carried out a survey back in 2014 about the effects of not getting enough sleep. His study suggests that not getting enough sleep massively affects your success rates in life. He asked 1000 people to compare both the quality of their sleep and how successful they were at achieving their goals. 60 percent of people who slept well said they were able to achieve their goals, compared with just 44 percent who slept poorly. These findings back up previous findings that sleep deprivation disrupts self-control and will power. One of the points he made about getting better sleep was to avoid light towards the blue end of the spectrum as this is especially effective at keeping you awake as it disrupts the production of the Sleep hormone melatonin. Smartphones computer screens and tablets all emit large amounts of blue light. He recommends avoiding these or an hour or so before bed but if they must be used then to turn down the brightness in your screen.

Brigham and Woman's Hospital also done research on the effects of blue light in the evenings. Their study ran for two weeks and included 12 participants who read on an iPad for 4 hours before bed for five days straight, a process that was repeated with printed books. For some the process was reversed and they started with printed books and then moved to iPads. The research proved that iPad readers took longer to fall asleep, felt less sleepy at night and had shorter REM sleep compared to the book readers. The iPad readers secreted less melatonin, which helps regulate your sleep. They were also more tired the following day even if they got a full 8 hours sleep. This new research supports conclusions from older studies that also found that screen time before bed can be detrimental.

Section C
My aim for research on this topic is to find out if the use of blue light devices in the evening will make people less alert the following morning.

Section D
My hypothesis for this study is that the participants who used blue light devices in the evening will be less alert the following day than those who did not and score less on the Epworth sleepiness scale.

Section E

The method I'm going to be using in my experiment is a questionnaire. This is a field experiment as this will be carried out in the participant's natural environment. I'm going to use a sample of 40 participants, 20 of them female and 20 of them male to eliminate a gender imbalance. I will have ten men and ten woman all using a blue light device before bed and another ten men and ten woman all not using any blue light device before bed. My participants will be chosen at random to eliminate my own bias as I will have no control over age or lifestyle of participants. The independent variable in my study is the blue light device. The dependable variable in my study is whether or not the blue light device will have an effect on the alertness of participants the following day. The extraneous variables in this study are that some of the participants may consume caffeine before doing the questionnaire or some may have young children keeping them awake throughout the night also impacting their score on the questionnaire.

Section F

Whilst carrying out research on people researchers must follow a set of moral principles known as a code of ethics that states what is and is not acceptable in research. Some of the key ethical principles are as follows –

- Consent and deception – at the outset of the study participants should give their consent to take part. People should be in full knowledge of what they are agreeing to do. Participants should never be about the nature of the research task.
- Briefing and debriefing – this is the explanation on what the the study will entail giving participants a summary of what the experiment involves and what to expect and instructions on what they are to do.
- Avoiding harm – the most important and universal rule of research ethics is to avoid harm (or the risk of harm) during the research procedure or as a result of them physically or psychologically.
- Research on children – Student researchers must not carry out experiments on children at all, and professional researchers take particular care to avoid any distress to child participants. Children must be willing to take part showing willingness and their parents must give written informed consent. This is because under-16s are vulnerable and may not fully understand what they are consenting too.

Section G

Websites

http://www.huffingtonpost.co.uk/entry/reading-before-bed_n_6372828

https://www.theguardian.com/commentisfree/2015/jan/01/sleep-new-years-resolution-success

Other references

- Notes from classes
- N5 & CfE Higher Psychology Book