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## PSYCHOLOGY ATAR – YEAR 12 2024

### Unit 4

### Task 7: Sleep Validation

#### Syllabus points

- Applications of psychology to health
- Ethical guidelines and practices for psychological research
- Formulating research
- Methodology
- Data collection
- Drawing conclusions
- Evaluation of research

#### Conditions

Reading time: 5 minutes

Working time: 40 minutes

#### Task Weighting

- 7%

#### Structure of this paper

Section	Number of questions available	Number of questions to be attempted	Suggested working time (minutes)	Marks	Score
Section One: Short Answer	5	5	40	41	
Total				41	

Part B

(41 marks)

1. Identify the following variables in your study.

(3 marks)

Independent

Use of technology 30 mins before falling asleep

Dependent

Cognitive function, sleep length and quality

Controlled

days of the week,

2. The study you have conducted uses experimental design.

(a) Outline why it is considered experimental research.

(2 marks)

experimental research includes testing for results with no ~~change~~ ~~independent~~ use of independent variable then with the change of the independent variable.

Since the experiment tested the same variables ~~before~~ including and not including the independent variable (use of technology 30 mins before falling asleep)

(b) (i) Identify one feature of experimental research that is missing from this study. (1 mark)

~~Also~~ Sampling technique that isn't convenience sampling

(ii) Explain why experimental research should have this feature.

(2 marks)

Convenience sampling increases the risk of skewing data purely by being close (most likely from same school/workplace/social group). This decreases reliability.

3. Formulate an evidence-based conclusion that explains your findings using psychological theories and concepts.

(6 marks)

From this experiment it was gathered that use of technology thirty minutes before bedtime causes a decreased quality of sleep. This may be because the blue-light from phones confuses ~~human~~ the circadian rhythm (24 hour cycle to do with the release of sleeping hormones and cycle) of our body therefore, creating an inability for our brain to tell us subconsciously when to go to sleep.

4. The data was collected using a subjective quantitative measure.

(a) With reference to your study, outline a strength of this method of data collection. (2 marks)

With this method of collecting data a bar graph was able to be made since the data was quantitative. Allowing easier recognition of a relationship between variables

(b) Suggest how qualitative data could be collected in a future study. (4 marks)

Instead of using a likert scale a questionnaire could be filled out by participants in the morning and at the end of their day. Questionnaire with open ended questions about their sleep habits eg "How was your sleep?"

(c) Explain how qualitative data addresses a limitation of quantitative data. (2 marks)

Quantitative data leaves no room for different lies into the ability to provide reasons for answers for example "I only slept 3 hours last night, because I kept getting calls from private numbers"

(d) Assess the reliability and validity of the subjective quantitative measure you created. (4 marks)

Reliability: <sup>bed</sup> reliability is good because <sup>of small sample means</sup> answers with numbers are more likely to appear in two different studies rather than unique experiences by people in different locations or years.  
Validity: Validity is good because the experiment focuses on the difference of answers between using no technology 30 minutes before falling asleep

5. Imagine we were going to run this study again but with the feature identified in 2 (b) (i) and a larger sample with the target population being high school students in Western Australia.

(a) Assess which sampling technique would be most appropriate to get a representative sample of all students in Western Australia. (3 marks)

Stratified sampling method because of the ~~disse of~~  
~~diff~~ different ~~environments~~ sleeping environments and  
stressors the average would be more accurate  
also different hereditary backgrounds <sup>that</sup> routines ~~and~~  
and customs

(b) You have already written a standardised procedure in a report that could be used in the future study. Explain the purpose of having these in the study. (3 marks)

The purpose of this is to test reliability or to see  
if results would change in the future ultimately  
leading to a different cause in a relationship between  
the variables. So others can also conduct the  
experiment

(c) Suggest how you would minimise the effects of extraneous and confounding variables other than having a standardised procedure. (3 marks)

providing participants with the same meal time and  
restricting the use of drugs which could skew results  
of the study as e.g. a caffeine is a stimulant so  
it will keep someone awake.

(d) Explain how you would address two ethical considerations.

(6 marks)

One: Informed ~~consent~~ consent. I would provide potential participants with a <sup>consent</sup> form explaining the procedure, limits and reasons for conducting the experiment. ~~with~~ Before ~~comp~~ as step 1 of the procedure

Two: Right to withdraw from experiment. Verbally informing participants that at any time of the study they can decide to withdraw from the study and assuring the participants they will not be coerced into staying in the study.