**Task Description:**

In this assessment, you will demonstrate your ability to perform descriptive and inferential statistical tests using the SPSS dataset provided. You will have access to this dataset at the beginning of Week 4.

**Background to the study:**

Nursing comprises the largest health workforce in Australia. However there is growing concern regarding the health of this population. Research has indicated that those in healthcare professions are at a high risk of developing symptoms of exhaustion and burnout as a result of high demands placed on them in their work roles.

Burnout and exhaustion can be a result of a myriad of factors including increased workloads, role diversity, changes to roles and responsibility, limited career progression opportunities, over-commitment, inadequate support internally and externally to the workplace, as well as unhealthy coping strategies. As there are so many external factors that can contribute to an individual’s burnout and exhaustion, researchers were interested to explore if any demographic factors could be indicators of exhaustion and burnout and whether nurses and midwives actually felt the services in place were adequate. The results of this research may identify groups at risk within the workforce and enable adequate interventions for these groups to be put in place prior to any exhaustion or burnout being experienced by employees.

A study was undertaken and the researchers recruited 90 nursing staff currently working in healthcare with a particular interest in investigating their levels of emotional exhaustion and burnout. All participants received a survey via email asking them their gender, origin country, age, their current employment (position, workplace context and employment type), their qualifications, and years worked in the nursing field. Participants were also required to rate their emotional exhaustion and burnout. The total score for emotional exhaustion is a number between 1-18, with scores of 1-6 indicating low level emotional exhaustion, scores of 7-12 indicating moderate emotional exhaustion and scores of 13-18 indicating high emotional exhaustion. Additionally, participants were asked whether they had accessed the mental health services within their workplace and if they were experiencing exhaustion or burnout whether they thought the services available to them would be helpful in managing these concerns.

**The survey below demonstrates data that was collected for this quantitative study. Note, that the values in RED align with the values set up in the SPSS dataset for this task:**

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*(You have one question in AT2A where you do need to demonstrate your ability to assess a frequency distribution for normality.*

*BUT……. After that….. Once you’ve done that question, then the directions for all of the rest of the questions, have bolded underlined directions that you can ASSUME NORMAL DISTRIBUTION for the remaining questions and tests…..for both the full sample and for each of the sub-groups within the full sample, that you may be asked to compare. You do NOT have to test for normality——you can instead just pretend we already have done so for you, and assume that every distribution is normal, for every variable, for the full sample, and for the sub-groups.)*

## Question 1 (Descriptive Statistics)

1. Use SPSS to run descriptive statistics to populate the following table showing some demographic information of the sample. (6 marks).

|  |  |  |  |
| --- | --- | --- | --- |
| **Characteristic** | | **Total** | |
|  |  | **n** | **% (valid)** |
| Age | 20-29 years |  |  |
|  | 30-39 years |  |  |
|  | 40-49 years |  |  |
|  | 50+ years |  |  |
|  | Missing (if applicable) |  |  |
| Gender | Male |  |  |
|  | Female |  |  |
|  | Missing (if applicable) |  |  |
| Employment basis | Full time |  |  |
|  | Part time |  |  |
|  | Casual |  |  |
|  | Missing (if applicable) |  |  |
| Work context | Public hospital |  |  |
|  | Private hospital |  |  |
|  | Private practice |  |  |
|  | Community health |  |  |
|  | Aged care |  |  |
|  | Missing (if applicable) |  |  |
| Years’ experience in nursing | 1-5 years |  |  |
|  | 6-10 years |  |  |
|  | 11-15 years |  |  |
|  | 16-20 years |  |  |
|  | 21+ years |  |  |
|  | Missing (if applicable) |  |  |
| Emotional exhaustion scores | Low level exhaustion level |  |  |
|  | Moderate exhaustion level |  |  |
|  | High exhaustion level |  |  |
|  | Missing (if applicable) |  |  |

**Include your SPSS output file**: Your submission for this question must include a copy of your output file, providing evidence of commands, statistical test results and any tables/graphs used to derive the results. Note: Failure to include your output files will result in an incomplete submission and a fail result for this assessment.

That “waiver” then saves you heaps of steps and streamlines the rest of the assignment for you. (Otherwise, technically, you would have to assess for normality in each question, if this were a real life research project.) So it’s a gift, unwrap it with glee :-)

Those remaining questions are about your ability to do inferential statistical testing, (because the first three questions have already given you the chance to describe the frequency distributions of your variables, by doing Descriptive statistics. You have shown us that skill, so you get to move onward to showing us the other skills you’ve learned.)

## Question 2 (Descriptive Statistics)

Use SPSS to answer these additional questions relating to the sample. Provide a copy of your **SPSS output file** as evidence of the statistical tests applied for all questions. (5 marks)

1. What is the age range of participants?(1 mark)
2. What percentage of participants have postgraduate qualifications (Graduate certificate, graduate diploma, Master’s degree or PhD)?(1 mark)
3. What is the mean (and standard deviation) emotional exhaustion score for female participants?(1 mark)
4. What is the mean (and standard deviation) emotional exhaustion score for male participants? (1 mark)

1. Create a histogram to display data about the current position of participants.(1 mark)

**Provide SPSS output as evidence of the statistical testing applied for all questions.**

##### Note: Failure to include your output files for every question will result in an incomplete submission and a fail result for this assessment.

## Question 3 (Normality Testing)

1. A researcher was deciding whether to run parametric or non-parametric analyses for their data set. The variable of interest was Emotional Exhaustion/Burnout Scores. Run the appropriate tests to answer the following questions. (6 marks)
2. What does the skewness value tell us about the Emotional Exhaustion/Burnout Score variable distribution? (1 mark)
3. What could we say about the distribution of the data? I.e. is it normally distributed or non-normally distributed?(1 mark)
4. What type of analyses (parametric or non-parametric) would you recommend the researcher use and why?(3 marks)

Provide **SPSS output** as evidence of the statistical testing you have conducted.

1. The researcher is still interested in the Emotional Exhaustion/Burnout Score variable, however thinks there may be a difference between male and females scores. Manipulate the data in the appropriate manner and run the appropriate tests to answer the questions below.
2. What could we say about the distribution of the data for each group? I.e. is it normally distributed or non-normally distributed?(1 mark)

Provide SPSS output as evidence of the statistical testing you have conducted.

## Question 4 (Inferential Statistics)

***Background:***

* Below you are presented with four scenarios. For each scenario, there are a series of questions pertaining only to that particular scenario.
* It is essential that you **include any SPSS output** in your submission to evidence commands, statistical test results and any tables/graphs.

**Note: Failure to include your output files will result in an incomplete submission and a fail result for this assessment**.

* **No tests of normality need to be conducted (these will not be marked)** – therefore, just go ahead and run the appropriate tests according to the variables of interest. Given the small data set and the hypothetical ‘real world scenario’ used, it is unlikely the data is normally distributed, however for the purpose of this assessment, let’s just assume the sample is normally distributed.

### Scenario A (8 marks)

The researchers were interested in the relationship between participant age (in years) and scores of exhaustion/burnout (between 1 and 18).

1. Name the two variables of interest.(1 mark)
2. Name the level of measurement for EACH variable.(1 mark)
3. What is the appropriate statistical test?(1 mark)
4. Run the appropriate statistical test in SPSS and present the findings in the appropriate format.(5 marks)

Provide **SPSS output** as evidence of the statistical testing you have conducted.

### Scenario B (9 marks)

The researchers were interested in whether there was a difference in years of experience in nursing between males and females. It is expected that females would have more nursing experience than males given nursing is a female dominant profession. Answer the questions below to determine whether this hypothesis is correct.

* 1. Name the variables of interest. (1 mark)
  2. What is the independent variable (IV)? How many categories does it have?(1 mark)
  3. What is the dependent variable (DV)? What level of measurement is it?(1 mark)
  4. What is the appropriate statistical test? (1 mark)
  5. Run the appropriate statistical test in SPSS and present the findings in the appropriate format.(5 marks)

Provide SPSS output as evidence of the statistical testing you have conducted.

### Scenario C (8 marks)

The researchers were interested in whether there is an association between participants who have accessed mental health services and them perceiving the services as adequate for the workplace. It is assumed that those who had access to the services would also think they were adequate, as they know exactly what type of assistance is available. Below is the number of people in each group. Answer the questions below to determine whether the hypothesis is correct.

|  |  |  |
| --- | --- | --- |
| **Accessed Mental**  **Health Services** | **Perceived adequacy** | |
|  | Yes | No |
| Yes | 26 | 15 |
| No | 30 | 19 |

1. Name the variables of interest.(1 mark)
2. Name the level of measurement for EACH variable. (1 mark)
3. What is the appropriate statistical test?(1 mark)
4. Run the appropriate statistical test in SPSS and present the findings in the appropriate format.(5 marks)

Provide **SPSS output** as evidence of the statistical testing you have conducted.

### Scenario D (8 marks)

The researchers were interested in testing the relationship between years of experience nursing and scores of emotional exhaustion/burnout (between 1 and 18). It is expected that those with more years’ experience were more likely to experience higher emotional exhaustion/burnout scores. Answer the questions below to determine whether the hypothesis is correct.

1. Name the variables of interest.(1 mark)
2. Name the level of measurement for EACH variable.(1 mark)
3. What is the appropriate statistical test?(1 mark)
4. Run the appropriate statistical test in SPSS and present the findings in the appropriate format.(5 marks)

Provide **SPSS output** as evidence of the statistical testing you have conducted.