Statistics Assignment 2

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Statistics Assignment 2 - Correlation

General instructions

You must submit the following.

SPSS - Syntax file - Report in Word doc form with tables/figures cut and pasted from SPS output file

R - RMarkdown file - Knit report in HTML or PDF

Part 1

State a research question and state the independent and dependent variables

State a research question based on the data (should include 2 variables).

- You can select 2 variables from any of 4 main continuous variables included in the data set.
  - Potential choices are
    - Physical activity score
    - Motivation score
    - Barriers score
    - Age
- You will have 1 independent and 1 dependent variables.
  - Note: since this data is cross-sectional (i.e., collected at only one time) there is not really a predictor/independent or outcome/dependent variable. Rather you are exploring the relation between variables
- Both of your variables must be continuous variables.
- One of your variables must be a composite score (i.e., compute a summed score)
- State and describe the variables

Part 2 - Describe the sample

- Discuss the appropriate descriptive statistics (i.e., frequencies, mean, standard deviation, etc.) of socio-demographic variables.
  - Socio-demographic variables are
    - Sex = Sex
    - Birth Year = Year
    - Education Category - Educat
    - Marital Status = Marist
    - Income Category = Income
    - Employement Status = Employ

Part 3 - Explore the data

- Discuss the normality of the data .

- Must report and discuss the following for all main variables (IV & DV):
  - Histograms
  - Skewness & Kurtosis
- Identify and discuss any outliers by presenting boxplots for all main variables (IV & DV).

- Descriptive statistics for all main variables (IV & DV) (mean, standard deviation, and standard error).

Part 4 - Correlation

- Create a scatter plot of your independent and dependent variables. In 1-2 sentences discuss the scatter plot.

- Analyze, report and discuss the correlation between your independent and dependent variables.
- Make sure you report the type of correlation you conducted and provide a rationale (with a citation) for selecting that particular correlation.

- Discussion should include the direction, strength and statistical significance of the correlation.
- Make sure you not only report the statistics/numbers but also discuss the relation of the variables in words.

Part 5 - Format and Effort

General Formatting

- A combination sentences/paragraphs with some bullet points is appropriate.
- Include a list of references where appropriate. For this assignment, you do not need to worry about providing references to the scales/items within the dataset.

OVERALL

- Assignments will be evaluated based on the overall effort and thoroughness of the assignment, attention to details, and overall presentation of results.

Data

Purpose

The purpose of this pilot study was to explore differences among active and non-active older adults in terms of urban versus rural status, reasons for participation in physical activity, socio-demographics, subjective health and well-being. For this assignment, not all of the variables will be presented.

Methods

Design This study used a cross-sectional survey research design to examine the differences in the associations among barriers, motivation, and degree of physical activity among older adults.

Sample The population for this study consisted of community-dwelling older adults, 65 years of age and older, living in the St. John's area. A convenience sample (n = 62) of community-dwelling older adults, 60 years of age and older, living in both urban (St. John's and area, n = 42) and rural (New World Island area, n = 20) NL recruited via 1) presentations, 2) posters, and 3) snowball referrals primarily through The Works, the Seniors Resource Centre and other community services and organizations.

Survey Instrumentation

- You will need to compute/calculate the total scores for the 2 following variables based on the scoring information below.

- See "Exercise&OlderAdultSurvey_Coded_Loucks-Atkinson&Rohr" where you will find the variable names for each item on the scales. Use this information to calculate the scores.

Physical Activity Physical Activity was measured using Godin's 4-item usual leisure-time exercise habits questionnaire (Godin Leisure-Time Exercise Questionnaire; Godin & Shephard, 1985). Respondents are asked to report how many times on average do they participate in strenuous, moderate, and light physical activity for more than 15 minutes during free time in a typical seven day period. Weekly frequencies of strenuous, moderate, and light activities are multiplied by nine, five, and three METS, respectively. Total weekly leisure activity is calculated in arbitrary units by summing the products of the separate components, as shown in the following formula: Weekly physical activity score = (9 × Strenuous) + (5 × Moderate) + (3 × Light).

Motivation to Exercise Motivation to Exercise was measured using the 19-item Behavioural Regulation in Exercise Questionnaire-2 (Markland & Tobin, 2004). The scale comprises five subscales: Amotivation with 4 items (e.g., "I don't see why I should have to exercise"), external regulation with 4 items (e.g., "I exercise because other people say I should"), introjected regulation with 3 items (e.g., "I feel guilty when I don't exercise"), identified regulation with 4 items (e.g., "I value the benefits of exercise"), and intrinsic motivation with 4 items (e.g., "I exercise because it's fun"). Responses were provided on a 5-point Likert-type scale ranging from 0 (Not True for Me) to 4 (Very True for Me).

Exercise Barriers Scale Exercise Barriers Scale (Sechrist, Walker, & Pender, 1987) is a 20-item scale. Respondents are asked to rate their agreement on a 5-point Likert scale (1 = "Strongly Disagree," 5 = "Strongly Agree") to 20 reasons that people often give for their involvement or lack of involvement in physical activity (e.g., "Physical activity takes too much of my time"). A total barriers to exercise score was computed as the sum of the responses to the items and total scores could range from 20 to 100, with higher scores indicating greater barriers to exercise.

Sociodemographics The questionnaire asked participants the following socio-demographic information

1. Gender

2. Date of birth
3. Highest level of education achieved
4. Marital status
5. Annual household income
6. Employment status

References

1. Godin, G.,& Shephard, R.J. (1985).A simple method to assess exercise behavior in the community. Canadian Journal of Applied Sport Sciences, 10, 141–146.

2. Markland, D. & Tobin, V. (2004). A modification to the Behavioural Regulation in Exercise Questionnaire to include an assessment of amotivation. Journal of Sport and Exercise Psychology, 26, 191-196.

3. Sechrist, KR, Walker, SN, & Pender, NJ. (1987). Development and psychometric evaluation of the Exercise Benefits/Barriers Scale. Research in Nursing & Health, 10, 357-365.