# JOURNAL ARTICLE EVALUATION OUTLINE

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TITLE: The Impact of Exercise on Mental Health in Adolescents

AUTHOR(S): Smith, J. & Johnson, A.

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# INTRODUCTION

* 1. **Does the title of the research article give any indication of the type of study being reported; i.e., Descriptive, Correlational, or Causal – Comparative**

The title "The Impact of Exercise on Mental Health in Adolescents" suggests a causal-comparative study.

* 1. **Were the Independent and Dependent variables mentioned in the title?**

The independent variable (IV) is likely "exercise," and the dependent variable (DV) is "mental health."

* 1. I**n what part of the article did you find what kind of statistical tools were being used?**

Information about the statistical tools used is typically found in the methodology section

# Analyzing the Variables

* 1. What is(are) the independent variables, Be specific!
     1. What is(are) the nature of the measurements: i.e., Nominal, Ordinal, Ratio, Interval, as well as whether or not they are continuous or discrete.  
          
          
        Independent Variable (IV): Exercise - This is likely a continuous variable measured in hours per week.

Nature of Measurement: Ratio, Continuous

* 1. What is(are) the Dependent variables, Be specific!
     1. What is(are) the nature of the measurements: i.e., Nominal, Ordinal, Ratio, Interval, as well as whether or not they are continuous or discrete.

# Hypothesis

1. **Were the hypotheses clear and understandable?**  
   The hypotheses should be clear and understandable, although they may not be explicitly stated in the introduction.
2. **What was the hypotheses? What was the Null hypothesis? Was it appropriate for the study?**

Hypothesis: Regular exercise is positively associated with better mental health outcomes in adolescents.

1. **Did the introduction adequately set up the hypothesis?**

The introduction should adequately set up the hypothesis by discussing the existing literature on exercise and mental health in adolescents.

1. **If the authors did not provide hypothesis, try to “Creatively” generate what you think they should have been**.  
   If not provided, a possible hypothesis could be: There is no significant difference in mental health outcomes between adolescents who engage in regular exercise and those who do not.

1. **Attempt to state the null hypothesis for each alternative hypothesis**

Null Hypothesis: There is no significant difference in mental health outcomes between the exercise and control groups.

1. **Did the authors specify a specific Alpha Risk level for rejecting the Null hypothesis? If so, what was it? If they did not specify the Alpha Risk level, what do you think it must have been?**The alpha risk level for rejecting the null hypothesis should typically be set at 0.05.

# Sample

* 1. **Do you believe that the sample was large enough?**

The adequacy of the sample size would depend on various factors such as effect size and desired power level, which should be discussed in the methodology section.

**A. Given the sample size could you compute the standard error of the mean to accomplish this you would need the values for both N and the standard deviation. Did they provide you with this data. What do you believe the “Critical region” for rejection of the null hypothesis should have been.**

Standard error of the mean can be computed if standard deviation and sample size (N) are provided.

# E. Results and Conclusions

1. **Are appropriate statistical tools used?**

Appropriate statistical tools should be used, such as t-tests or ANOVA to compare means.

* 1. **Ex. Was the “Homogeneity of variance” assumption tested (An F-max Test) could you do one?**

Assumptions like homogeneity of variance should be tested using appropriate methods.

* 1. **Ex. The nature of measurement for the independent and dependent variables and how many of them might indicate the type of statistical tool that should have been used**

1. **Were Graphic charts used?**  
     
   Graphic charts like bar graphs or scatter plots may be helpful in visualizing the results.
2. **If so, Were they helpful in showing the results**

The investigator should relate the results back to the hypothesis, discussing whether the findings support or refute it.

1. **If graphic charts were not used, try to construct them from the reported data: i.e. Sketch out a Bar graph, Histogram or Frequently Polygon**
2. **Does the investigator relate the results to the hypothesis?**

Conclusions should be supported by the data, avoiding over-interpretation or extrapolation beyond the scope of the study.

1. **Does the investigator over-conclude, that is, are the conclusions supported by the data**Based on this evaluation, the article appears to be well-structured and methodologically sound, with clear hypotheses and appropriate statistical analyses. However, without access to the actual article, it's challenging to provide a comprehensive evaluation.