Explanation of modifications of PSY 216 to meet GenEd criteria for a course in Statistical Inferential Reasoning (09/13/09)

The GenEd requirement of a course in statistical inferential reasoning will be satisfied by majors in Psychology who satisfactorily complete a pair of courses – PSY 215 and PSY 216. These two courses cover research design (PSY 215) and statistics (PSY 216). Neither course alone will cover all of the criteria in the course template for statistical inferential reasoning because the two courses must satisfy the needs of the major to learn basic concepts in design and basic procedures in statistics. However, between the two courses, all of the goals will be met for the GenEd course in statistical inferential reasoning. The purpose of this narrative is to explain how PSY 216 has been modified to address most of the GenEd goals.

The original version of PSY 216 as taught by Drs. Elizabeth and Robert Lorch is organized into four sections. The initial section covers descriptive statistics; the second section develops probability and its role in hypothesis testing and power computations using the binomial distribution and the Chi-square distribution; the third section develops procedures for testing hypotheses, computing power, and constructing interval estimates involving means (i.e., Normal and t-distributions); and the final section develops basic procedures for doing inferences involving bivariate distributions (i.e., correlation and regression). The course has always been concerned with developing the logic of the inferential procedures, as well as their execution. However, we have modified the course to place more emphasis on the reasoning underlying the procedures and on the interpretation of results from the procedures. Specifically, we have developed sets of exercises specifically designed to address GenEd objectives in the course template. These exercises will be used in lecture and in the labs in multiples ways: They will be used for individual work, for group problem-solving exercises, and as discussion pieces. In addition, on each of the four exams in the course, one of the problems on the exam will be chosen from the exercise sets (or analogous problems will be developed). Performance on these four problems across the course of the semester will provide information pertinent to the assessment of how well the GenEd goals are being met. Because there will be more than 50 problems on the exercise sets and each is relatively idiosyncratic, scoring rubrics have not been generated for any problem; rather, rubrics will be generated on as as-needed basis (i.e., when exams are constructed in a specific course).

When we have completed all of the work on the exercise sets, we will have a total of 12 sets of exercises addressing various GenEd objectives in the context of the specific topics covered in the course. The exercise sets are described below.

Section 1

The first section of the course develops descriptive statistics, including graphing, tabling, measures of central tendency, and measures of dispersion. We have developed three sets of exercises that address goals C1 and C2 of the course template, although there is more emphasis on C1 than C2 in this section of the course. Goal C1 states that students should demonstrate an understanding of the challenges that confront informal inferences arising from numerical summaries, charts, graphs, and tables, and that they can construct these inferences in a rational and informed manner. Goal C2 states that students should be able to discuss the practical importance of the effective conditional reasoning, the importance of hidden variables and confounding, the issue of association versus correlation and correlation and causation, the importance of having the right and/or enough information, and the problem of misinterpreting randomness.

Exercise Set #1: These problems are intended to develop an appreciation of the need for graphing conventions and the sensibleness of the conventions that have developed.

Exercise Set #2: These problems provide opportunities for students to make sense of the information summarized in tables and graphs, to evaluate theoretical claims against that information, and to offer theoretical interpretations of that information.

Exercise Set #3: These problems are intended to sharpen students' understanding of what different numerical summary statistics do and do not communicate about a data set.

Section 2

The second section of the course develops basic concepts and laws in probability theory, then uses them to derive the binomial distribution. The binomial distribution, in turn, is then developed as a sampling distribution and used to develop the logic of hypothesis testing and the computation of statistical power. The section also develops the logic of hypothesis testing in the context of the Chi-square distribution, introducing the goodness-of-fit test and the test of association. This section of the course addresses goals B1 and B2 of the course template. Goal B1 states that students must demonstrate a substantive understanding of "statistical significance," and the sense in which p-values and null hypothesis testing offer a useful and practical articulation of risk assessment. Goal B2 states that students must be able to articulate the strengths and weaknesses of using classical null hypothesis testing as a decision tool.

Exercise Set #4: These problems are designed to help students develop an appreciation for the usefulness of probability information in making decisions.

Exercise Set #5: These problems are designed to help students understand the logic of hypothesis testing and the role of probability distributions in hypothesis testing.

Exercise Set #6: These problems are designed to help students understand the logic of power computations and the relevance of the concept of power to both (a) decisions about experimental design, and (b) interpreting failures to reject the null hypothesis.

Exercise Set #7: These problems develop the logic of hypothesis testing in the context of Chi-square-based procedures. They also develop the concept of independence of events and apply it in different contexts.

Section 3

The third section of the course introduces procedures for making statistical inferences about means based on the Normal and t-distributions. The concept of sampling distribution is revisited and the importance of the Central Limit Theorem is developed. Hypothesis testing and power are developed in this new context, providing an opportunity for students to consolidate concepts first encountered in the second section of the course. In addition, interval estimation procedures are introduced and compared/contrasted with hypothesis testing as a tool for interpreting data. This section of the course addresses Goals A1, B1 and B2 of the course template. Goal A1 states that students should be able to connect the uncertainty of sampling variability with margins of error and confidence intervals. (the exercise sets from this point on are still to be developed; "tbd").

Exercise Set #8 (tbd): These problems will help students develop an intuitive understanding of why/how the Central Limit Theorem "works." In addition, they will help students distinguish between the distribution corresponding to a population of scores and the sampling distribution of the mean.

Exercise Set #9 (tbd): These problems will focus on hypothesis testing logic and power, emphasizing the interpretation of results of statistical tests on means.

Exercise Set #10 (tbd): These problems will focus on confidence intervals. They will develop students' intuitions about the information communicated by confidence intervals and the interpretation of CIs. In addition, the exercises will develop connections between confidence intervals and both hypothesis testing and power.

Section #4

This section will focus on bivariate distributions, developing both procedures for describing bivariate distribution (in particular, scatterplots, correlation coefficients and regression lines) and procedures for testing basic inferences concerning bivariate distributions. The descriptive statistics covered in this section are relevant to Goal C1 and C2 of the course template; the inferential content is relevant to Goal B1 and B2.

Exercise Set #11 (tbd): These problems will focus on interpreting descriptive statistics related to bivariate distributions. Scatterplots illustrating stronger and weaker linear relationships will be presented, along with scatterplots illustrating decidedly nonlinear relations. Problems will require "eyeball" analysis of the scatterplots. Correlation coefficients will be calculated and regression lines will be calculated and drawn on scatterplots to develop an appreciation for how the statistical calculations summarize relationships when appropriately applied, and mislead when inappropriately applied.

Exercise Set #12 (tbd): These problems will provide interpretations of data analyses for students to evaluate. Examples of inappropriate causal attributions will be included; examples of use of statistics for prediction rather than explanation will also be included. Students will also be asked to offer their own hypotheses about the bases for different relationships and will be asked to consider what additional information they might want in order to test their hypotheses.

Objectives in the course template that are not addressed in PSY 216

PSY 216 will not address two of the objectives stated in the course template. Goal A2 is more effectively addressed in the context of the research design course, PSY 215. In addition, Goal D is already a component of PSY 215. PSY 216's coverage of Goals A1, B1, and B2 meets the requirements of the course template. Goals C1 and C2 will be addressed in both courses.

DRAFT (9-13-09)

Psychology 216: Applications of Statistics in Psychology

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Hours:

Goals of the Course

The aims of this course are to help you develop an understanding of major concepts that underlie the use and interpretation of statistics in psychological research, and to help you learn how to choose and carry out statistical procedures that are appropriate for different research purposes. Psychologists are interested in understanding a variety of phenomena and they use a wide variety of methods and measures to study the objects of their interest. Regardless of the content or conditions for study, statistics serve as important tools for making sense out of the data that are collected. We need statistics to **describe** the data clearly and communicate the findings to others. We also need statistics **infer** general conclusions from a limited number of observations. In this course, we'll cover both the descriptive and inferential functions of statistics. We'll examine a variety of ways to describe data, and will discuss reasons to choose particular methods. Likewise, we'll develop a general logic of how to make inferences from data, and then cover a number of different statistical tests that are appropriate for different situations (but all of which use the general logic).

Statistics as procedures vs. statistics as reasoning. One important objective of this course is to introduce you to basic procedures for analyzing data. Thus, we will study procedures for presenting data (e.g., tables and graphs) and for conducting "tests" that will allow us to make general conclusions from a relatively small set of observations. A more important objective of the course is to help you become an intelligent user of statistics. This involves developing a deep understanding of the logic of statistical reasoning. Executing a statistical procedure is easy; intelligent use of statistics is not easy. The bottom line message: You're not likely to learn very much or do very well in the course if you just get the mechanics of executing procedures; you must push yourself to understand the logic that underlies the procedures and their interpretation.

General Education

This course combines with PSY 215 to satisfy the General Education requirement of a course in statistical inferential reasoning. You must complete both PSY 215 and PSY 216 to satisfy this requirement. The general education requirement is that each student gain an understanding of the basic concepts and logic of statistical procedures so that you may reason intelligently with those tools. Many of the exercises you will do in the course are designed to provide experience in reasoning with statistics.

Required text:

Pagano, R. (2010). *Understanding statistics in the behavioral sciences (9th edition).* Pacific Grove, CA: Brooks/Cole Publishing Co.

Due dates for Problem Sets (see below) will be announced in class. Exam dates will be set at least a week in advance of the exam. There will be an exam at the conclusion of each section of the course.

Course Outline

Section #1 Objectives

In the first section of the course, we study procedures for summarizing and presenting data. Specifically, we study numerical measures that summarize important characteristics of a data set (i.e., "summary statistics") and conventions for presenting data in tables and graphs. We will study the procedures for computing summary statistics and constructing tables and graphs. More importantly, we will study what information is communicated by each summary statistic and the conventions for tabling and graphing. We will use these various procedures to guide our reasoning about relevant topics.

1. Know how to generate various summary statistics and what information each one communicates; understand when and why each summary statistic is useful.
2. Know how to present information in a table and when a table is a useful tool. Understand the conventions for tabling information and why conventions are important.
3. Know how to present information in a graph and when a graph is a useful tool. Understand the conventions for graphing information.
4. Be able to interpret tables, graphs and summary statistics and use them as important sources of information to guide your reasoning about relevant topics.

Topic	Assignment
I. Introduction	Chapter 1 Pay special attention to Definitions on pp. 6-7
II. Univariate Descriptive Statistics	
A. Data Presentation: Tables and graphs	Chapter 2 (omit Real Limits, pp. 28-29) Chapter 3 (omit pp. 43-49)
B. Summarizing data: Measures of central tendency and variability	Chapter 4

Section #2 Objectives

The focus of this section of the course is on the logic of an important inferential procedure in statistics called "**hypothesis testing**." Closely associated with hypothesis testing is a second topic of "**statistical power**." Both hypothesis testing and power are based on our ability to compute probabilities of events under well-specified conditions, so we begin this section by studying the rudiments of probability theory. We then use our basic understanding of probability to develop a "**sampling distribution**" that specifies the probability of any possible outcome for a particular class of experiments. We show how this probability information may be used to evaluate hypotheses. We distinguish two types of **errors** that may occur in using the decision-making process we call "hypothesis testing." We then introduce the concept of **power** as an important consideration in designing good experiments and in tempering the conclusions we can safely draw when our experiments fail to yield a "significant" outcome.

1. Understand the basic concepts of probability theory, including: marginal probabilities, conditional probabilities, mutually exclusive events, independent events.
2. Understand the additive law for mutually exclusive events and the multiplicative law for independent events and how they are used to generate the binomial distribution.
3. Understand the use of the binomial distribution as a sampling distribution for a specific class of experiments.
4. Understand the central role of a sampling distribution in hypothesis testing (i.e., understand the logic of hypothesis testing).
5. Know the distinction between Type 1 and Type 2 errors in hypothesis testing and understand that the logic of hypothesis testing is based on the ability to compute and control the probability of a Type 1 error.
6. Understand that it is desirable to minimize the probability of a Type 2 error and that understanding power is the critical to designing experiments that achieve this goal.

Topic	**Assignment**
III. Probability	
A. An intuitive approach to probability	
B. A formal approach to probability	Chapter 8
C. The binomial distribution	Chapter 9
IV. Introduction to Hypothesis Testing	
A. Basic Concepts	
B. Procedures in testing	Chapter 10
C. Errors in testing and power	Power covered on pp. 227-231 of Ch. 10
V. The Chi-Square Distribution	
A. Extension of binomial distribution	
B. Goodness of fit test	Chapter 18
C. Test of association	(omit pp.433-446)

Section #3 Objectives

In this section of the course, we will study two new sampling distributions: the Normal distribution and the *t*-distribution. Whereas the binomial and Chi-square distributions served as sampling distributions of frequencies of events, the Normal and t-distributions serve as sampling distributions of means. We will study the use of each distribution for testing hypotheses about means. We will again study power in the context of the Normal distribution. Two important new procedures that we will learn are how to obtain **confidence intervals** on estimates of population means, and how to measure the magnitude of the effect of a variable (i.e., **effect size**). We will apply hypothesis-testing, confidence intervals, effect-size estimation and power estimation procedures in various contexts.

1. Be able to execute all of the following procedures studied in this section of the course.
2. Understand the importance of the Central Limit Theorem and how it works.
3. Understand that sampling error is associated with all of our various statistical calculations and that the sampling distributions that underlie our calculations allow us to quantify that error. Thus, the probability of Type 1 errors, the power of a statistical test, and the margins of error expressed by a confidence interval are all based on knowing the relevant sampling distribution for our statistical computations.
4. Know how to interpret the results of each of the statistical procedures we study in this section.
5. Understand the relations among the statistical procedures of hypothesis-testing, confidence interval estimation, effect-size estimation, and power.

Topic	**Assignment**
VI. The Normal Distribution	
A. Theoretical foundation: Central Limit Theorem	
B. Applications	
1. Standard scores	Chapter 5
2. Hypothesis testing	
a. Single mean	Chapter 12
b. Difference between two means	
3. Confidence intervals, power	
VII. The t-distribution	
A. Theoretical foundations	
B. Hypothesis tests & confidence intervals	
1. Single mean	Chapter 13 (omit pp. 296-299)
2. Two independent means	Chapter 14
3. Two correlated means	

Section #4 Objectives

The final section of the course will focus on basic procedures for analyzing relationships between two variables that are (approximately) described by a line. We will learn how to construct **scatterplots** for graphing distributions of pairs of variables. We will develop a method for computing the equation for the line that is the "best fit" of a line to a scatterplot (i.e., the **regression equation**) and we will develop a statistic for quantifying how well the a describes a scatterplot (i.e., the **correlation coefficient**). We will study when such procedures are appropriate to apply, and when they are not appropriate, and why. We will illustrate the use of the regression equation to make predictions in various contexts. We will develop methods of testing hypotheses concerning the characteristics of the population regression equation and correlation coefficient. We will spend a good deal of time considering threats to the interpretation of the correlation coefficient, in particular.

1. Know how to execute all of the statistical procedures.
2. Know how to use a scatterplot to evaluate the appropriateness of computing the regression equation and the correlation coefficient.
3. Understand the sense in which the regression equation produces the "best fitting" line, but that "best fit" doesn't necessarily mean "good fit."
4. Understand the relationships between the regression line and the correlation coefficient.
5. Understand the threats to interpreting a correlation coefficient and how to evaluate those threats.

Topic	Assignment
VIII. Bivariate Distributions	
A. Description of bivariate distributions	
1. Data presentation: Scatterplots	Ch 6, pp. 99-106
2. Describing a relation: Regression	Chapter 7 through p. 144
3. Measuring a relation: Correlation	Ch. 6, pp. 107-119 Supplement pp. 48-51, 54-55; Ch. 7, pp. 144-146
B. Bivariate Statistical Inference	pp. 305-307 Supplement pp. 56-60
C. Interpreting Correlation & Regression	Ch. 6, pp. 120-123

Course Requirements

I. Assignments

A. Problem Sets

1. Problem sets will be assigned approximately one per week. The problem sets are very important in helping you to master the material and prepare for exams. Problem sets will generally be due in class on Tuesday, unless noted otherwise. Each problem set that you turn in **by the due date** will be graded on a 1 to 3 scale. You will receive a 0 if you do not turn in a problem set, **or if you turn it in late**. If you anticipate problems with this requirement, discuss your situation with your TA **before** the problem set is due.
2. Problem sets count for a relatively small percentage of your course grade (6.25%) and can actually gain you extra credit if you do well on them. They are graded to encourage you to keep up with the work; they'll hurt you only if you don't make the effort to do them. Feel free to work on problem sets with other class members or to ask the TA or me for help if you are stuck. REMEMBER: THE PROBLEM SETS ARE TO HELP YOU TO LEARN.

B. In-class exercises:

I will often ask you to do exercises in class. Sometimes these may be problems that extend concepts covered in class; sometimes I may pose questions that ask you to consider implications of the material. The exercises will generally be done in groups. The in-class exercises are a way of encouraging your active involvement with the material.

C. In-lab exercises: I will regularly assign exercises in lab, usually to be done in groups. The in-lab exercises are a particularly important component of the labs because they are an opportunity to develop a deeper understanding of the concepts in the course, and to connect those concepts to real-world applications.

D. Class and lab attendance:

Attendance at lectures and labs is expected and will be a component of your grade. A minimum of 22 of 28 lectures must be attended for full credit for attendance. Less than the minimum will incur a penalty in grading; you will earn extra credit if you attend more than 24 lectures.

II. Exams

A. Four exams are planned. It is possible, however, that the number of exams may be changed, depending on the pace that's appropriate for the class. There will not be a cumulative final exam, but you'll find that you'll need to keep using previously covered material throughout the course. Exam 1 covers less material and will count for a smaller proportion of your grade than each of the other exams (see Grade Assignment section below).

B. The course will stress concept mastery and applications and will minimize the need to memorize formulas. You will be permitted to use calculators, and to bring a "cheat sheet" to the exams. The cheat sheet can be one standard size (8 1/2" x 11") piece of paper containing whatever information you see as most important (e.g., formulas, rules, outlines of procedures, etc.). If you are to bring any other materials to any exam, I'll let you know. If possible, exams will be scheduled during lab times, as indicated in the outline above. Please note that the dates given for the first three exams are estimates, because different classes complete the work at slightly different rates. The exact date of each exam will be announced in class and lab; you are responsible for making sure you get this information and are able to attend the exam.

C. If you cannot attend an exam at its scheduled time, you must make every effort to notify me in advance. If you miss an exam due to a last-minute emergency that could not be approved in advance, I will expect you to provide documentation of the reason for your absence before your absence will be excused. In either event, if your absence is not excused, you will not be allowed to take a make-up. You can let me know about a problem with attending an exam by telling me in person, by putting a note in my mailbox in Kastle Hall, by e-mail, or by phone. If you do not speak directly to me, you MUST leave a phone number where I can reach you. **You will receive a zero for the exam if the absence is not excused.**

III. Labs

Labs will be used for three purposes. They will be used to remedy comprehension difficulties revealed by your work on the problem sets; you will do in-lab exercises that elaborate the concepts covered in the problem-sets and in lecture; and time will be spent working on the upcoming problem set. Labs usually will involve working on additional problems, especially concerning topics that are causing difficulties. You are always encouraged to ask questions, but labs are a particularly good time to ask about anything that is causing you problems.

IV. Attendance Policy

Attendance at lectures and labs is very important. You will not learn the course content well if you do not attend regularly. Also, if you are irregular in your attendance (for unexcused reasons), you cannot expect to receive individualized help. Further, I sometimes decide to offer a makeup exam. If I decide to do so in this class, your record of attendance and problem set completion will be used to determine eligibility for the make-up exam and how heavily a make-up can count in your grade.

V. Grade Assignment

A. Exams: 75 points for Exam 1 and 100 points each for Exams 2, 3 and 4.

B. Problem sets: 25 points (there will be 11 graded problem sets, giving you a chance to earn up to 8 bonus points)

C. Attendance

1. Lectures: Attendance will be taken in lectures. If you attend more than 24 of the 28 lectures, you will receive 2 bonus points for each class above 24. **If you attend fewer than 22 lectures, you will receive a deduction of 5 points for each class below the expected 22.**
2. Labs: Attendance will be taken in labs, not including the 3 exams. If you attend more than 9 of the 11 labs, you will receive 2 bonus points for each class above 9. **If you attend fewer than 8 labs, you will receive a deduction of 5 points for each class below the expected 8.**
3. Attendance will be taken within the first 5 minutes of class. **If you come to class after attendance has been taken, you will be recorded as having missed that class**.
4. Because there is ample opportunity to earn full credit for attendance, excuses for missed classes and labs will **not** be accepted except in **very** unusual circumstances (e.g., **documented** serious chronic illness. Please don't come in at the end of the semester to try to justify any problems meeting this requirement.

D. Final grade calculation

Grades will be computed on a basis of 400 points (i.e., the 4 exams plus the problem sets). If you perform very well on problem sets, you can earn up to 8 bonus points. If you attend lecture and lab conscientiously, you can earn up to 12 bonus points. HOWEVER, poor attendance will actually penalize you. For example, if you attend only half of the lectures and labs (i.e., 14 lectures and 5 labs), you will receive a deduction of 55 points!

It is expected that grades will be assigned based on the following point breakdowns:

Grade	A	B	C	D	E
Points	360 or more	320-359	280-319	240-279	239 or less

GROUP PROJECT – PROPOSAL

Total possible: 60 points

- Written proposal
- Student's contribution to project

Part I: Proposal

Total possible: 50 points

Due date:

- Groups of 4 students should choose a proverb (Example: "the grass in always greener on the other side of the fence"; "it is never too late to learn", etc…)
- Students should generate a testable hypothesis and suggest a design to test the hypothesis
- Single factor (but remember, the IV has to be manipulated and not a subject variable) or factorial designs (at least one manipulated variable) are acceptable
- When planning your study do not forget to think about concepts learned in class. Students should follow ethical guidelines, identify the type of design, IVs and their levels, DVs, control for extraneous variables, etc…
- Your proposal should include, at least, 8 references
- The proposal should contain
    - Title Page
    - Abstract
    - Introduction
    - Method
    - Results
    - Discussion
    - References
    - Figures and tables
- Students should be specific and think about all the important details – Examples: how many participants? How are they going to be recruited? Which instructions are going to be given to participants? Are they going to receive compensation for their participation? Are you using any questionnaire? If so, what are the questions? Are you going to use deception? How are you going to debrief your participants?, etc…
- Be realistic!!! You are suppose to design a study that is procedurally and ethically feasible!!!
- Do not forget to write in future tense whenever referring to your study
- Good grammar and good use of APA style are expected

Part II: Student's Contribution to Project

Total possible: 5 points

Due date:

- The contribution of each group member is going to be evaluated by other group members. The student will receive the median number of points assigned by the other group members
- Use the form given in class to evaluate group members

PROPOSAL WORKSHEET

Names: ______________________________
____
____
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1. Title: ______________________________

2. What is the purpose of your study?

3. How is your experiment designed to address the purpose stated above?

4. State the specific hypotheses to be tested.

5. How many participants do you plan to use? Where will they be obtained and how will you solicit their participation?

6. What is the design of the experiment? What are the independent variables? Specify the levels. How will the variables be manipulated? Are there any subject variables? What is/are the dependent variable(s)? How and when will they be measured?

7. What materials will you use? Be specific, and include actual scales or forms you want to use.

8. Briefly outline how the experiment will be conducted (i.e., the procedures used to run participants)

9. How will the data be analyzed?

10. What are your expected results? (Which main effects and/or interactions are predicted?)

Appendix F-2

PROPOSAL - GRADING

TITLE PAGE
- APA FORMAT
- CONTENT (DESCRIPTIVE TITLE, PAGE HEADER, RUNNING HEAD, NAME, INSTITUTION)

ABSTRACT
- APA FORMAT (BLOCK FORMAT, DOUBLE SPACE, HEADING, PAGE NUMBER, ETC.)
- HYPOTHESIS(ES)
- PARTICIPANTS
- METHOD
- RESULTS
- CONCLUSIONS
- NUMBER OF WORDS

INTRODUCTION
- OPENING PARAGRAPH
- 8 REFERENCES (DESCRIPTION OF EACH STUDY)
- RATIONALE
- HYPOTHESIS(ES)
- METHOD (GENERAL DESCRIPTION OF DESIGN)
- APA

METHOD
- PARTICIPANTS
  - NUMBER
  - DEMOGRAPHIC INFORMATION
  - COMPENSATION
  - HOW THEY WILL BE RECRUITED
  - APA
- MATERIAL
  - DESCRIPTION
  - APA
- PROCEDURE
  - INSTRUCTIONS
  - ASSIGNMENT TO DIFFERENT CONDITIONS
  - DESCRIPTION
  - APA

RESULTS
- CONTENT
- APA

DISCUSSION
- COMPARISONS WITH PREVIOUS STUDIES
- LIMITATIONS
- CONTRIBUTIONS
- APPLICATIONS
- APA

REFERENCES
- APA

FIGURES AND TABLES

FIGURE CAPTIONS PAGE
FIGURE/TABLE
APA

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