Projecting Effects of Stress and Anxiety in Out-of-State Students

Bryar Brooks
*Western Michigan University*, bryarbrooks@hotmail.com

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THE PROJECTING EFFECTS OF STRESS AND ANXIETY IN OUT-OF
STATE STUDENTS

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HNRS. 4990 Spring Semester, 2021 Course Syllabus 1 Credit Hours

Faculty Information:
Michele L. McGrady, Ph.D.
Office: 2412 College of Health and Human Services (working remotely spring 2021)

Email: Michele.L.McGrady@wmich.edu

Course Outline/Checklist

This is a tentative list of activities for spring semester, 2021. There is room to move more quickly if tasks are completed ahead of time. Additional tasks may be added if needed.

Bryar & Dr. McGrady will meet on a biweekly basis via Zoom throughout the semester with additional meetings scheduled as needed.

January Checklist

- Complete HSIRB application with Dr. McGrady
  ○ Read relevant literature such as:
• ___ Develop recruitment materials
• ___ Recruit participants

February Checklist
• ___ Collect data
• ___ Start analyzing data
• ___ Contact additional committee member(s)

March Checklist
• ___ Finish data analysis
• ___ Start write up/presentation materials
• ___ Schedule thesis presentation

April Checklist
• ___ Finalize thesis presentation
• ___ Thesis presentation
• ___ Finalize paperwork to submit to LHC
Abstract
This study investigated the effects of stress and anxiety on undergraduate in-state, out-of-state, and international students. The current statistics on stress and anxiety in college students in general is mind blowing. Almost 50% of college students say they have moderate levels of stress and 25% of college students say that they have high stress levels. In addition, 44% of students struggle with depression and 50% struggle with anxiety. These have a direct correlation with their sleep habits as well. With these statistics in mind, the goal of this study was to see the statistically significant difference in stress and anxiety levels between in-state and out-of-state students. Students were recruited through campus courses and sent an anonymous survey through Qualtrics; 106 responses were collected. Results indicated students are experiencing high levels of perceived stress and low to moderate levels of state anxiety. There were no between group differences on the measures of perceived stress, state anxiety, and sleep habits. These results let us know that undergraduate students at Western Michigan University are stressed, exhausted, and not satisfied with their sleep. Limitations of the current study include COVID-19, limited variation among student participants, and short time frame. Future research is encouraged to broaden the scope of students to include more diversity in all areas. Those who work at universities can use these results to improve resources available to students to help with stress levels and sleep habits.
Date: February 1, 2021

To: Michele McGrady, Principal Investigator
   Bryar Brooks, Student Investigator for thesis

From: Amy Naugle, Ph.D., Chair

Re: IRB Project Number 21-01-05

This letter will serve as confirmation that your research project titled “Projecting Effects of Stress and Anxiety in Out-of-State Students” has been approved under the exempt category of review by the Western Michigan University Institutional Review Board (IRB). The conditions and duration of this approval are specified in the policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may only be conducted exactly in the form it was approved. You must seek specific board approval for any changes to this project (e.g., add an investigator, increase number of subjects beyond the number stated in your application, etc.). Failure to obtain approval for changes will result in a protocol deviation.

In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the IRB for consultation.

The Board wishes you success in the pursuit of your research goals.

A status report is required on or prior to (no more than 30 days) January 31, 2022 and each year thereafter until closing of the study. The IRB will send a request.

When this study closes, submit the required Final Report found at https://wmich.edu/research/forms.

Note: All research data must be kept in a secure location on the WMU campus for at least three (3) years after the study closes.
Western Michigan University

IRB Protocol

Title: “Projecting Effects of Stress and Anxiety in Out-of-State Students”

Abstract

College is a stressful time for students. Stressors include academics, careers, finances, procrastination, family, roommates, health of a loved one, etc. (ACHA, 2020). These stressors may be compounded for students who live out-of-state may experience. The purpose of this study is to see the impact of anxiety and stress on sleep habits and grades in out-of-state students whose families live 250+ miles away from Western Michigan University. This study will survey undergraduate students across campus during spring semester 2021 to assess perceived stress and anxiety. Of particular interest is the impact of stress and anxiety on sleep quality and grades for out-of-state students.

Purpose/Background Information

As stated, college is a challenging time for students. In fact, stats about stress levels show that 23.4% of students experience low levels of stress, 49.8% of students experience moderate levels of stress, and 25% of students experience high levels of stress within a year. Like previously stated, stressors for these students include academics, careers, finances, procrastination, family, roommates, health of a loved one, and many more (ACHA, 2020).

According to Zawadzki, Graham, and Gerin (2012) it is clear to see the linkage between stress and loneliness in all college students. It is emphasized that college students face this connection of stress and loneliness with poor sleep habits. In addition, in this sample of 1,244 undergraduate students, results indicated that rumination and loneliness are strongly correlated.
Knowing this correlation, this study seeks to further explore if out-of-state students whose families live 250+ miles away, show an even greater correlation between loneliness and sleeping habits (Zawadzki, Graham, and Gerin).

In addition, mental health is a very serious topic and issue that many people around the world are facing today. Specifically, in an article by Stanley and Mathorpe (2002), this topic of mental health is specifically focused on that of students. They closely examine the needs of all students and how schools can form a support system for those feeling anxious, stressed, or lonely. Given the pressures of college, it is critical to understand how prevalent mental health concerns are and how it is impacting students. With this in mind, it will be important to determine if mental health is affecting out-of-state students more than in-state students, and how to spread the word of various support systems at WMU that are available.

Sleep habits in college students is another aspect to explore. According to Cunningham, (2019), the effect on a students’ grades, overall GPA, and risk for mental health problems were clearly shown. In the sample of college students, it was found that mental health issues including depression (44% of students) and anxiety (50% of students) were directly related to these poor sleep habits (Cunningham). It highlights how students can become overworked and as a result about 35% are not getting enough sleep per night. Between being over-worked and facing feelings of stress and anxiety for students going to college out-of-state, it will be important to obtain data that shows greater effects on overall GPA and grades in classes.

Lastly, it is so important to understand how prevalent stress is within the Generation Z group (including college students ages 18-23). In an article by the American Psychological Organization (2020), these students are at a pivotal moment of their lives but unfortunately, they face lots of uncertainty when it comes to what’s to come. In fact, Gen Z’s have an average stress
rate of a 6.1 out of 10. This is much higher compared to past generations; 5.6 for millennials, 5.2 for Gen X, 4.0 for boomers, and 3.3 for adults 75+.

In addition, 87% of Gen Z’s who are attending school say that their education is a main source of their stress. For this study, it is also extremely important to know how prevalent out-of-state students are at Western Michigan University. In 2017, Western Michigan University saw a dramatic increase in its number of out-of-state students as their out-of-state enrollment increased by 30.8%. Knowing that Western Michigan University has such a high percentage of out-of-state students will be helpful when comparing stress and anxiety in out-of-state vs. in-state Gen Z students (Roland, 2017).

The goal of the proposed study is to be able to identify levels of stress and anxiety in out-of-state students and share the vast resources that WMU has available. These resources can increase belonging and comfort for students during their time at WMU, even when one’s family is not near to aid in that comfort.

**Federal Funding**

This project is not federally funded.

**Subject Recruitment**

For this research, the overall goal will be as many participants as possible with a hope for 50-75 students to complete the study. Potential subjects will be recruited through the implementation of personally emailing and a mass email sent out through Lee’s Honors College, registered student organizations, and large undergraduate courses. Students will be recruited via online recruitment during the first month of spring semester. The recruitment script (Appendix A) will be available online through the Qualtrics system.
If potential subjects wish to contact either Dr. McGrady or Bryar Brooks in regard to expressed interest or questions regarding participation, they can contact us via email or phone number. For those who are interested, either investigator will respond with necessary additional information and instructions as to how they will proceed with taking the survey.

**Informed Consent Process**

Following the reading of the recruitment script, students can decide whether they would like to participate. The informed consent (see Appendix B) will be made available for students in two different formats: print and audio/video. The print format will be available via Qualtrics. If they choose to participate, they will be directed to complete the surveys.

**Location of Data Collection**

Data collection will take place online at Western Michigan University in the spring semester, 2021 using the Qualtrics system. Data will be stored electronically on the principal investigator’s computer and be password protected.

**Duration of the Study**

For participants to take this study and consent to anonymously take the survey, the total time one will take is 10-15 minutes. In addition, this survey will be open for 1 month.

**Research Procedure**

**Methods of Data Collection**

To participate in this study, each participant must complete a one time, 10-15 minute virtual survey that is focused on the projecting effects of stress and anxiety in out-of-state students vs. in-state students.

**Instrumentation**
All participants will be asked to complete the 14 item Perceived Stress Scale, and a brief questionnaire.

**Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983).**

The well-researched Perceived Stress Scale measures the degree to which one thinks their life is stressful within the last 30 days (Cohen et al, 1983). There are three versions of the PSS: 14 item, 10 item, and 4 item. For the purposes of this proposed study, the 14 item PSS will be used (see Appendix C). The four additional questions add depth to the measure.

There are five response categories ranging from “Never” to “Often” on the PSS. A sample question is: “In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?” Validity and reliability of the PSS 14 item have been established and revisited for this measure given its frequent use (Lee, 2012). As the measure will be used for academic research, no explicit permission is needed from the authors (see [http://www.psy.cmu.edu/~scohen/](http://www.psy.cmu.edu/~scohen/)).

**State-Trait Anxiety Inventory-Short (STAIS-5 & STAIT-5; Zsido, Teleki, Csokasi, Rozsa, & Bandi, 2020).**

The State-Trait Anxiety Inventory is one of the most frequently used assessments of state and trait anxiety (Zsido, Teleki, Csokasi, Rozsa, & Bandi, 2020). The shortened version of the inventory was validated and deemed reliability after more than 3500 participants were sampled by Zsido, et al. The measure easily distinguishes between state anxiety and trait anxiety which is particularly helpful when sampling college students (see Appendix D).

There are ten total questions, 5 measuring state anxiety and 5 measuring trait anxiety.
There are four response categories ranging from “Not at all” to Very much so”. A sample statement is: “I worry too much over something that really doesn’t matter.” Researchers used confirmatory factor analyses to evaluate question fit. In addition, the shortened versions of the STAI were shown to be highly correlated with the original scale (.88 for trait short, .86 for state short) (Zsido, Teleki, Csokasi, Rozsa, & Bandi, 2020).

**Sleep habits questions.**

While there are numerous measures of sleep habits, patterns, disorders, and disruptions, we are seeking to know about the general sleep habits of college students. Using the work of Eliasson, Lettieri, and Eliasson (2010) as a guide, we revised some of their questions related to sleep to fit the needs of the proposed study (see Appendix E).

**Demographic questions.**

A brief set of demographic questions will be asked of students. Of particular interest to the proposed study are the questions related to students’ in-state, out-of-state, or international status. Please see Appendix F.

**Methodology**

**Study Design**

The research design for the current investigation is an observational design. Cross-sectional surveys will allow researchers to capture participants’ experiences with perceived stress, state anxiety and how they impact sleep habits and grades. Data collection will take place one time in spring semester. Data will be anonymous to protect against possible coercion.
Analysis

Initial analysis will include cleaning the data and determining the demographic picture of the participant cohort. Participant datum will be separated based on status as out-of-state or instate student. Potential mean differences on the PSS and STAI-5 within those groups will be analyzed with the use of multiple one-way ANOVA’s.

Dissemination

The results of this study will be disseminated in a final thesis through WMU’s Lee Honor’s College and will be available for use in other research studies by Dr. McGrady.

Risks and Cost to and Protections for Subjects

Given the sensitive nature of stress and anxiety for all students, if a student does experience and express emotional concerns, appropriate counseling resources will be shared with the student. An additional cost for students is the time (10-15 minutes) it will take to complete the survey, which may serve as an inconvenience for them.

Benefits of Research

There are no direct benefits to participants associated with this research project. Potential benefits of the project for the discipline include increasing awareness of personal well-being. In addition, overall potential benefits are to spread awareness of the different resources that WMU offers when one experiences states of anxiety or stress.

Confidentiality of Data

All participants will take the surveys anonymously.
Future Use of Information

After information that could identify participants has been removed, de-identified information collected for this research may be used by or distributed to investigators for other research without obtaining additional informed consent from participants.
Appendices

Appendix A: Recruitment script

Hello, our names are Dr. Michele McGrady (principal investigator) and Bryar Brooks (student investigator). We are collecting data on the prominence of stress and anxiety in college students. You are being invited to participate because you are currently enrolled in one of the designated courses or in Lee’s Honors College.

Participation in this research includes answering a set of questions that have to do with your well-being throughout your time at Western Michigan University. Should you decide to participate, your total time commitment will be approximately 15 minutes just once this semester.

Potential benefits to your participation may include learning more about well-being and learning about various resources across WMU’s campus that aid in mental health and inclusion. If you choose to participate, please know you can withdraw from the study at any time without penalty. I will now read the consent document and then you will be able to ask any questions.
Appendix B: Informed consent

Western Michigan University

Integrative Holistic Health and Wellness

Principal Investigator: Michele McGrady, Ph.D.

Student Investigator: Bryar Brooks

Title of Study: Projecting Effects of Stress and Anxiety in Out-of-State Students

SUMMARY: This consent form is part of an informed consent process for a research study and it will provide information that will help you decide whether you want to take part in this study. Participation in this study is completely voluntary. The purpose of the research is to: determine the prominence of stress and anxiety in out-of-state students vs. in-state students. If you take part in the research, you will be asked to complete 1 brief questionnaire. Your time in the study will take 15 minutes total. Possible risk and costs to you for taking part in the study may be the time to complete the surveys and potential discomfort from answering sensitive questions. There are no direct benefits to your participation in the study. Your alternative to taking part in the research study is not to take part in it.

You are invited to participate in this research project titled “Projecting Effects of Stress and Anxiety in Out-of-State Students” and the following information in this consent form will provide more detail about the research study. Please ask any questions if you need more clarification and to assist you in deciding if you wish to participate in the research study. You are not giving up any of your legal rights by agreeing to take part in this research After all of your
questions have been answered and the consent document reviewed, if you decide to participate in this study, your completion of the questionnaires will serve as your consent to participate.

**What are we trying to find out in this study?**

The purpose of the current study is to explore the prominence of stress and anxiety in out-of-state students vs. in-state students.

**Who can participate in this study?**

Undergraduate students enrolled at Western Michigan University can participate in this study.

**Where will this study take place?**

The study will take place online using the Qualtrics system. The investigator will not know whether you are participating or not.

**What is the time commitment for participating in this study?**

Your involvement in the study includes completing one survey that focuses on the emotional effects of stress and anxiety during your time at Western Michigan University. In total, the questionnaires will take approximately 15 minutes in total.

**What will you be asked to do if you choose to participate in this study?**

If you choose to participate, you will be asked to complete one survey composed of some general questions and two questionnaires focused on stress and anxiety.
What information is being measured during the study?

This section will describe the measurements that we are going to take during your participation in the study. The questionnaires included in the study are: a perceived stress scale and anxiety questionnaire.

What are the risks of participating in this study and how will these risks be minimized?

Potential risks to your participation in this study involve minor discomfort around stress related issues. If you experience discomfort, you will have access to a variety of counseling or support services provided on Elearning and from the researcher.

What are the benefits of participating in this study?

There may not be any direct benefits of your participation. However, you may be adding to the knowledge base on college students’ stress levels and potential ways to manage it.

Are there any costs associated with participating in this study?

A potential cost to your participation in this study would involve the time given to completing the questionnaires once, which is 15 minutes in total.

Is there any compensation for participating in this study?

There is not any compensation for participating in the study.
Who will have access to the information collected during this study?
The information collected in this study will be kept confidential and in a locked data storage system. The data will be password protected. The principal investigator will be the only one who can access the data. When presenting or publishing the results of the study, no identifying information about you will be discussed.

What will happen to my information or biospecimens collected for this research after the study is over?
After information that could identify you has been removed, de-identified information collected for this research may be used by or distributed to investigators for other research without obtaining additional informed consent from you.

What if you want to stop participating in this study?
Your participation in this study is completely voluntary. You may stop participating in this study at any point. If you choose to stop participating, it will not impact your grade in any classes. Furthermore, there will be no repercussions academically or personally if you decide to withdraw from this study. The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the principal investigator, Michele McGrady at michele.l.mcgrady@wmich.edu or 269-387-3556. You may also contact the student investigator, Bryar Brooks at bryar.j.brooks@wmich.edu or 715-326-
1424, Chair, Human Subjects Institutional Review Board at 269-387-8293, or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Western Michigan University Institutional Review Board (WMU IRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.
# Appendix C: Perceived Stress Scale

**Directions:** Please mark within the box which best represents you within the last month only. There is no right or wrong response to any of the questions.

Thank you for your participation.

N = never-N, AN = almost never, S = sometimes, FO = fairly often-FO, VO = very often

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. In the last month, how often have you felt that you were unable to control important things in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. In the last month, how often have you felt nervous and “stressed”?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. In the last month, how often have you dealt successfully with irritating life hassles?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. In the last month, how often have you felt confident about your ability to handle your personal problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. In the past month, how often have you felt that things were going your way?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. In the past month, how often have you found that you could not cope with all the things you that you had to?</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
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<td>---</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>In the last month, how often have you been able to control irritations in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>In the past month, how often have you felt that you were on top of things?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>In the past month, how often have you been angered because of things that happened that were outside of your control?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>In the past month, how often have you found yourself thinking about things that you have to accomplish?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>In the past month, how often have you been able to control the way you spend your time?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>In the past month, how often have you felt difficulties were piling up so high that you could not overcome them?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: STAIS-5 & STAIT-5

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number at the end of the statement that indicates HOW YOU FEEL RIGHT NOW, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best. Thank you.

Response scale: Not at all, somewhat, moderately so, very much so

1. I feel upset.
2. I feel frightened.
3. I feel nervous.
4. I am jittery.
5. I feel confused.

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number at the end of the statement that indicates HOW YOU GENERALLY FEEL. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best. Thank you.

Response scale: Not at all, somewhat, moderately so, very much so

1. I feel that difficulties are piling up so that I cannot overcome them.
2. I worry too much over something that really doesn’t matter.
3. Some unimportant thoughts run through my mind and bothers me.
4. I take disappointments so keenly that I can’t put them out of my mind.
5. I get in a state of tension or turmoil as I think over my recent concerns and interests.
Appendix E: Sleep habits questions

Directions: This set of questions asks you about your general sleep habits and what may impact those habits.

During the week, what time do you go to bed?

- Before 8pm
- 8pm-9pm
- 9-10pm
- 10-11pm
- 11pm or later

During the week, what time do you wake up?

- Before 6am
- 6am-7am • 7am-8am
- 8am-9am
- 9am or later

On weekends, what time do you go to bed?

- Before 8pm
- 8pm-9pm
- 9-10pm
- 10-11pm
- 11pm or later

On weekends, what time do you wake up?

- Before 6am
- 6am-7am • 7am-8am
- 8am-9am
- 9am or later

How often do you nap?

- Never
- 1-2X a week
- 3-5X a week
- Every day
Typically, how long are your naps?
- I do not take naps
- <30 minutes
- 30+ minutes
- 1-2 hours
- 2+ hours

Do you experience sleepiness on a typical day?
- Yes, every day
- Sometimes
- No, never

When you do stay up, what are reasons you do so? (Choose all that apply)
- Try to sleep and am not able to
- Work
- School
- Socialize
- Other reasons

Do you have a job? (Y/N response)
- Yes
- No

If yes, how many hours do you typically work in a week?
- <5 hours
- 5-10 hours
- 10-15 hours
- 15+ hours

How satisfied are you with your sleep?

-Response categories will be a 5 point scale ranging from “Not at all” to “Very much”
- Not at all
- Not usually
- Moderate
- For the most part
- Very much
On 4.0 scale, what is your current GPA? (Fill in answer)

- $< 3.0$
- $3.0 - 3.3$
- $3.3 - 3.6$
- $3.6 - 3.9$
- $> 3.9$
Appendix F: Demographic questions

This final set of questions asks you about yourself.

What is your year in school?

- 1st year
- 2nd year
- 3rd year
- 4th year
- 5th year

Please identify your gender. Please circle your answer.

- Female
- Male
- Non-binary
- Other, please specify:

What is your race/ethnicity? Please circle your answers.

American Indian or Alaskan Native
Black or African American
Asian
Native Hawaiian or Other Pacific Islander

White
Biracial/multiracial
Hispanic or Latinx

What is your age? Please write it in the space below.

- 18 • 19 • 20
- 21
- 22+

Please select which applies to you:

- In-state student
- Out-of-state student
- International Student
Approximately how far away is your hometown from Western Michigan University?

- Less than 100 miles
- 100-200 miles
- 250+ miles

In general, how would you describe your overall experience throughout your time here at Western Michigan University?

- I have had nothing but a positive experience
- Neutral
- I have had nothing but a negative experience
References


Institutional Review Board
APPLICATION FOR PROJECT REVIEW

I. REQUIRED HUMAN SUBJECTS WEB-BASED TRAINING AT
   www.citiprogram.org must be completed before WMU IRB can approve a protocol.

II. PROJECT TITLE: Projecting Effects of Stress and Anxiety in Out-of-State Students

III. INVESTIGATOR INFORMATION

   WMU PRINCIPAL INVESTIGATOR OR ADVISOR
   Name: Dr. Michele McGrady                     Department: INTEGRATIVE HOLISTIC HEALTH AND WELLNESS
   Title: Assistant Professor
   Degree Attained: Ph.D in Counseling Psychology, M.A, and Graduate Certificate in Integrative Holistic Health and Wellness
   Email Address: michele.l.mcgrady@wmich.edu
   Street or Campus Address: 2412 Health and Human Services Building- Western Michigan University, 1903 W. Michigan Ave.
   City: Kalamazoo                State: MI       ZIP: 49008-5212
   Office Phone: 269-387-3556     Home Phone: 269-718-9893
   Human Subjects web training at www.citiprogram.org completed: Yes

   WMU CO-PRINCIPAL OR STUDENT INVESTIGATOR
   Name: Bryar Brooks                        Department: BIOLOGICAL SCIENCES
   Title: Select one
   Degree Attained: Bachelor's of Biomedical Sciences (Estimated May 2021)
   Email Address: bryar.j.brooks@wmich.edu
   Street or Campus Address: 5814 Copper Beech Blvd. Apt. H
   City: Kalamazoo                State: MI       ZIP: 49009
   Office Phone:                  Home Phone: 715-326-1424
   Human Subjects web training at www.citiprogram.org completed: Yes

   Status of student investigator:
   ☑ Undergraduate             Master level       ☐ Doctoral level
   Level of involvement of student investigator:
Assisting ☐Thesis ☐Dissertation ☐Other (please specify):

WMU CO-PRINCIPAL OR STUDENT INVESTIGATOR
Name: ___________________________ Department: ___________________________
Title: ___________________________ Select one Degree Attained: ___________________________
Email Address: ___________________________
Street or Campus Address: ___________________________
City: ___________________________ State: ___________________________ ZIP: ___________________________
Office Phone: ___________________________ Home Phone: ___________________________
Human Subjects web training at www.citiprogram.org completed: Select one
Status of student investigator:
☐ Undergraduate ☐ Master level ☐ Doctoral level
Level of involvement of student investigator:
☐ Assisting ☐ Thesis ☐ Dissertation ☐ Other (please specify):

If there are more WMU investigators, please complete the “Additional WMU Investigators” form

COLLABORATING INVESTIGATORS AND AFFILIATIONS (NON WMU)
Name: ___________________________ Affiliation: ___________________________
Name: ___________________________ Affiliation: ___________________________
Name: ___________________________ Affiliation: ___________________________

IV. PROPOSED PROJECT DURATION:
From (mm/dd/yy): 01/11/21 To (mm/dd/yy): 05/01/21 (date following anticipated approval) (maximum one year later)

V. TARGETED PARTICIPANT POOL
Maximum number of subjects you will recruit: 200
Number of subjects you want to complete the study: 75
Number of subjects in the control group: 0
Justification for number of subjects: We would like to have at least 75 students complete this study so that we can observe the true differences in stress and anxiety in out-of-state students vs. in-state students.
Age range (lower limit – upper limit, e.g., 18-99): 17-23 Gender: Both
Targeted Race/Ethnicity: None/Not applicable
Inclusionary criteria: Undergraduate WMU Students
Exclusionary criteria: Graduate WMU Students
Source of participants: Various holistic classes and WMU Honors College

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Length of participation (x min/session, y sessions, over z months): 15 minute survey that will be open for 1 month

Targeted Participants in Special Consideration Categories: (Check all that apply.)

☐ None
☐ Military personnel
☐ Children (age range: )
☐ Cognitively impaired persons
☐ Prisoners
☐ Non-English-speaking individuals
☐ Pregnant or lactating women
☐ Students
☐ Blind individuals

Other subjects whose life circumstances may interfere with their ability to make free choice in consenting to take part in research (please specify):

VI. FUNDING

Funding source: None

Select one

WMU proposal number for funded project:

Date of submission to funding agency:

VII. RESEARCH SITE(S)

Site(s) and organizations involved in data collection and/or research activity: WMU

Letters of approval from project site officials: are not needed (research on-campus).
VIII. Protocol Outline

Prepare and attach a proposal that follows the outline below. NUMBER YOUR PAGES. Do not submit your thesis or dissertation proposal, grant application, etc. Please review your proposal and mark each box below with a ☑ following review of that section.

☑ ABSTRACT: One page maximum.
☑ PURPOSE/BACKGROUND INFORMATION:
☑ FEDERALLY FUNDED: Indicate if the project is federally funded and agency name.
☑ SUBJECT RECRUITMENT: Describe in detail how you intend to contact and recruit participants. Attach all written advertisements, posters and oral recruitment scripts.
☑ INFORMED CONSENT PROCESS: Describe the process by which informed consent will be obtained. If the participant is a child or mentally challenged, explain how the parent(s)/guardian(s) will be contacted for consent and how the researcher will insure that the participant understands and assents to the research.
☑ RESEARCH PROCEDURE: (including what exactly subjects will do as part of the study), Method of data collection, Instrumentation, Location of data collection, and Duration of the study.
☑ METHODOLOGY: Design, Analysis, and Dissemination (e.g., thesis, dissertation, peerreviewed journal, presentation).
☑ RISKS AND COSTS TO AND PROTECTIONS FOR SUBJECTS: Describe the nature and likelihood of possible risks (e.g., physical, psychological, social, economic) so far as they are known. Risks include mild discomforts, inconveniences, and potential for disclosure of sensitive information. Describe measures to be taken to protect subjects from possible risks or discomforts.
☑ BENEFITS OF RESEARCH: Briefly describe the expected or known benefits of the research. Indicate benefits specific to the research participant, longer term or more general benefits, and benefits to the knowledge base.
☑ CONFIDENTIALITY OF DATA: Describe precautions to ensure the privacy of subjects and confidentiality of information. Be explicit if data are sensitive. Describe coding procedures for subject identification. Include the method, location and duration of data retention. (Federal regulations require data to be maintained for at least 3 years. Your professional society may require you to keep it longer.)
☑ FUTURE USE OF DATA: Describe what will happen to information or biospecimens collected for this research after the study is over (e.g., will data be used for another research study).
☑ APPENDICES: Attach questionnaires, interview scripts, and data collection instruments, etc. Attach coding sheets for video- or audio-tapes and other data collection procedures. Attach a copy of all consent/assent documents, including non-English and Braille translations, if applicable.
IX. CONSENT DOCUMENT DEVELOPMENT CHECKLIST

The following information **must** be included in the consent documents. Mark (☑) each of the requirements you have included. Omitted information must be justified on a separate sheet of paper. Sample consent documents are posted on the IRB Webpage under Consent/Assent Document Development.

**GUIDELINES**
- Leave a minimum top margin of 2 inches on all pages. Submit the final version of the consent document without headers such as “Draft” or “Appendix ___.”
- Language in the form of an invitation to participate AND at a reading level appropriate for the participants (Note that the mean reading level in the United States is 6th grade.)
- Do not include phrases like “I am aware” or “I understand” anywhere in the document.
- Do not include language that would absolve the researcher of responsibility for negligence

**REQUIRED COMPONENTS**
- **STUDY SUMMARY:** A concise and focused introduction of why an individual may or may not want to participate in research (see informed consent templates).
- A header that includes “Western Michigan University, Department of ________” (if departmental letterhead is not used). Principal Investigator: _(name)_ Student Investigator: _(name(s))_ and title of the study.
- The first paragraph of the consent document must include a concise summary of essential study information.
- The nature, purpose, and duration of the study
- Procedures to be employed in the research; exactly what the subject is expected to do
- Risks (hazards, inconveniences, discomforts) the subject may undergo, so far as they are known, and how any risks will be minimized
- Benefits to the subject (and to the general subject population)
- Conditions of participation
- How confidentiality will be maintained and any limits to confidentiality
- What will happen to information or biospecimens collected for this research after the study is over (See informed consent template).
- Statement that the participant can refuse to participate; stop participating at any time; or refuse to answer any question without prejudice, penalty, or risk of any loss of service he/she would otherwise have
- The researchers’ names and telephone numbers (including the faculty advisor) as well as the following statement: “You may also contact the Chair, Institutional Review Board (387-8293) or the Vice President for Research (387-8298) if questions or problems arise during the course of the study.”
- A place for date and signature of participant and a witness line, if required (e.g., with subjects who are not legally competent); a place for date and signature of translator, if applicable; a place for date and signature (or initials) of individual obtaining the consent, if applicable
- The following statement **must** be included in all consents: “This consent document has been approved for use for one year by the Western Michigan University Institutional Review Board (WMU IRB) as indicated by the stamped date and signature of the board chair in the upper right corner.” Online consent language may vary, see webpage for guidance.

**The following are only to be included if appropriate:**
- If there is physical activity or a possibility of physical injury, include the statement: “If an accidental injury occurs, appropriate emergency measures will be taken; however, no compensation or additional treatment will be made available to you except as otherwise stated in this consent form.” Any available compensation or additional treatment should then be specified, if appropriate.
- Any significant new findings affecting risks will be promptly reported to the participant.
- Circumstances under which the researcher may terminate the subject’s participation
- Consequences of the participant’s withdrawal from the study
- The approximate number of participants in the study
Debriefing procedures

X. LEVEL OF REVIEW

☒ Administrative or Expedited: This project does not require a full board review because it meets at least one of the following criteria: data collection is anonymous

Email the signed, scanned application to the WMU IRB at ovpr-hsirb@wmich.edu. Administrative or Expedited applications may be submitted at any time. You must use your WMU email account when communicating with the IRB.

☐ Full: Email the signed, scanned application to ovpr-hsirb@wmich.edu. You must use your WMU email account when communicating with the IRB.

If blood products are involved, you must complete and attach the WMU IRB collection of blood and blood products form.

Your full board application must be received by the WMU IRB by 5:00 pm on the first Wednesday of the month in order to be reviewed at the board meeting on the third Wednesday of that month.

XI. CERTIFICATION/SIGNATURE

I certify that the information contained in this WMU IRB application and all attachments is true and correct. I certify that I have received approval to conduct this research from all persons named as collaborators and from officials of the project sites. If the Institutional Review Board approves this proposal, I agree to conduct the research according to the approved protocol. I agree not to implement any changes in the protocol until such changes have been approved by WMU IRB. If, during the course of the research, unanticipated risks or harm to subjects are discovered, I will report them to WMU IRB immediately.

_____________________________________________  __________________
Principal Investigator/Faculty Advisor Signature  Date

_____________________________________________  __________________
Co-Principal or Student Investigator Signature  Date

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Co-Principal or Student Investigator Signature  Date

Co-Principal or Student Investigator Signature  Date
Principal Investigator: Michele McGrady, Ph.D.
Student Investigator: Bryar Brooks
Title of Study: Projecting Effects of Stress and Anxiety in Out-of-State Students

STUDY SUMMARY: This consent form is part of an informed consent process for a research study and it will provide information that will help you decide whether you want to take part in this study. Participation in this study is completely voluntary. The purpose of the research is to: determine the prominence of stress and anxiety in out-of-state students vs. in-state students. If you take part in the research, you will be asked to complete 1 brief questionnaire. Your time in the study will take 15 minutes total. Possible risk and costs to you for taking part in the study may be the time to complete the surveys and potential discomfort from answering sensitive questions. There are no direct benefits to your participation in the study. Your alternative to taking part in the research study is not to take part in it.

You are invited to participate in this research project titled “Projecting Effects of Stress and Anxiety in Out-of-State Students” and the following information in this consent form will provide more detail about the research study. Please ask any questions if you need more clarification and to assist you in deciding if you wish to participate in the research study. You are not giving up any of your legal rights by agreeing to take part in this research. After all of your questions have been answered and the consent document reviewed, if you decide to participate in this study, your completion of the questionnaires will serve as your consent to participate.

What are we trying to find out in this study?
The purpose of the current study is to explore the prominence of stress and anxiety in out-of-state students vs. in-state students.

Who can participate in this study?
Undergraduate students enrolled at Western Michigan University can participate in this study.

Where will this study take place?
The study will take place online using the Qualtrics system. The investigator will not know whether you are participating or not.

What is the time commitment for participating in this study?
Your involvement in the study includes completing one survey that focuses on the emotional effects of stress and anxiety during your time at Western Michigan University. In total, the questionnaires will take approximately 15 minutes in total.

**What will you be asked to do if you choose to participate in this study?**
If you choose to participate, you will be asked to complete one survey composed of some general questions and two questionnaires focused on stress and anxiety.

**What information is being measured during the study?**
This section will describe the measurements that we are going to take during your participation in the study. The questionnaires included in the study are: a perceived stress scale and anxiety questionnaire.

**What are the risks of participating in this study and how will these risks be minimized?**
Potential risks to your participation in this study involve minor discomfort around stress related issues. If you experience discomfort, you will have access to a variety of counseling or support services provided on Elearning and from the researcher.

**What are the benefits of participating in this study?**
There may not be any direct benefits of your participation. However, you may be adding to the knowledge base on college students’ stress levels and potential ways to manage it.

**Are there any costs associated with participating in this study?**
A potential cost to your participation in this study would involve the time given to completing the questionnaires once, which is 15 minutes in total.

**Is there any compensation for participating in this study?**
There is not any compensation for participating in the study.

**Who will have access to the information collected during this study?**
The information collected in this study will be kept confidential and in a locked data storage system. The data will be password protected. The principal investigator will be the only one who can access the data. When presenting or publishing the results of the study, no identifying information about you will be discussed.

**What will happen to my information or biospecimens collected for this research after the study is over?**
After information that could identify you has been removed, de-identified information collected for this research may be used by or distributed to investigators for other research without obtaining additional informed consent from you.
What if you want to stop participating in this study?
Your participation in this study is completely voluntary. You may stop participating in this study at any point. If you choose to stop participating, it will not impact your grade in any classes. Furthermore, there will be no repercussions academically or personally if you decide to withdraw from this study. The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the principal investigator, Michele McGrady at Michele.L.McGrady@wmich.edu or 269-387-3556. You may also contact the student investigator, Bryar Brooks at bryar.j.brooks@wmich.edu or 715-326-1424, Chair, Human Subjects Institutional Review Board at 269-387-8293, or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Western Michigan University Institutional Review Board (WMU IRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.
The Projecting Effects of Stress and Anxiety in Out-of-State Students

Bryar Brooks, Student Investigator
Dr. Michele McGrady, Project Advisor

Results

The majority (54%) of the participants in this study were 19 or 20 (N=52). In addition, 19% of the participants were 18 (N=20), 12% were 21 (N=13), and 12% were 22 or older (N=13). The majority of the sample were females at 76% (N=81). The next interesting thing that we learned was that majority of our participants were Caucasian as they represent 75% (N=80). The remainder of the participants were Asian at 12%, Biracial at 3%, Black or African American at 2%, and Hispanic at 2%.

![Pie chart of age distribution](image1)
![Bar chart of race/ethnicity](image2)

Close to 60% of the participants were either Freshman or Sophomores. The rest of the sample was made up of 19% Juniors, 12% seniors, and 5% were second year seniors. The majority of the sample came from the Lee Honor’s College Students so only 3% of our participants held a GPA of below a 3.0. The rest of the sample went as follows: 2% have a GPA between a 3.0 and 3.3, only 15% have a GPA between a 3.3-3.6, 4% of participants had a GPA between a 3.6 and 3.9, and 45% had a GPA that is a 3.9 or higher.
When it comes to in-state or out-of-state status, most of the students were in-state (63%, N=67). 19% of the participants were out-of-state students. 12% of the participants were international students. Of the 106 participants, 37% which is 40 students live less than 100 miles away from Western Michigan University. In addition, another 40 participants only lived 100-200 miles away from campus and only 21 students live 200 miles or more away.

Results for the Perceived Stress Scale (PSS) revealed a mean score for the sample of 33.02 (std=3.01). There was no statistical difference in perceived stress between in-state, out-of-state, and international students (p=.766). Each ANOVA run was confirmed through a Post Hoc Tukey test.
The State Anxiety Subscale revealed a mean score of 8.04 (std=2.92). When we ran the ANOVA, there was no statistically significant difference between in-state, out-of-state, and international students when it came to their levels of state anxiety (p=.253). Lastly, there was no statistical difference in sleepiness (p=0.781), satisfaction with sleep (p=0.218), and whether one naps (p=0.213) between in-state, out-of-state, and international students.

**Discussion**

Although our findings were broad and non-specific to in-state, out-of-state, and international students, the results obtained throughout this project were very consistent with the work of other studies. For example, much like the work of (ACHA, 2020), the results of this study also found that college students are very stressed and have many contributing factors to their overall stress levels. Stressors may include academics, family issues, roommates, finances, etc., and from the study it was proved that students are having extremely high levels of stress through the Perceived Stress Scale (33.02).

Finally, we obtained evidence that students are getting much less sleep than needed each night. Much like the results (Cunningham), these results greatly show how becoming over-worked and stressed can be a result of 35% or more students not getting enough sleep each night. Our results also found that there was no statistically significant difference between in-state, out-of-state, and international students sleep habits. Each are experiencing sleepiness daily.

**Limitations**

It is also important to understand that this project also had some limitations. It took place within a 6-month period, and they survey was only open for 30 days for people to take. With
additional time, there may have been some significant differences between stress and anxiety of in-state, out-of-state, and international students. In addition, as previously stated, a large portion of the participants were other Lee Honor’s College Students, and majority of the sample consisted of primarily white, educated, female students. This provided a small amount of variation in this sample of students. I would be interested to see how the results would differ if a wider spread of students of different ethnicities, genders, degree, or status at WMU were collected.

In addition to the limited variation of participants in this study, another huge limitation was the COVID-19 pandemic. Stress during COVID-19 has been greater than ever, especially for students during these unprecedented times of remote learning and social isolation. This added stress could have been a significant factor to the high levels of perceived stress depicted in these studies.

**Implications**

Despite these limitations that came with this study, these results allowed researchers to conclude that there can be a wide variety of things that both students and university faculty and staff can do to help when it comes to stress levels and sleep habits. For undergraduate students, setting a sleep schedule that ensures them to get 8+ hours of sleep each night, taking proper naps, limiting caffeine intake, and shutting electronics down prior to bedtime are all ways that they can improve these habits. In addition, to limit the amount of stress students are experiencing they need to understand self-care. Exercising, eating well, breathing, and taking time for yourself are all ways that students can reduce this stress.
Although there are various ways students can take these matters into their own hands, it’s also important to note the impact that university faculty and staff can have on students as well. For example, many students here at Western Michigan University have limited knowledge on the resources available to them at Sindecuse Health Center. Although they are briefly talked about in a course offered to students called “First Year Experience”, students who do not take that class aren’t obtaining that information and it could be very helpful to many of those missing out. Making students aware of these available resources from the get-go can provide them with a source of support when they begin college.

**Conclusions**

Overall, to conclude the findings of this study, it is evident that college students experience unprecedented levels of stress. This was evident when analyzing students’ perceived stress scores and explains why there is no difference in stress levels between in-state, out-of-state, and international students. In addition, it was concluded that college students are currently experiencing low-moderate levels of state anxiety. Lastly, the data showed that college students no matter their status, are exhausted. Majority experience sleepiness daily and are not satisfied at all with the amount of sleep they are getting each night.
THE PROJECTING EFFECTS OF STRESS & ANXIETY IN OUT-OF-STATE STUDENTS

Bryar Brooks, Student Investigator
Dr. Michele McGrady, Advisor
Introduction - Our WHY

- Personal experience throughout my time here at WMU
- Importance of mental health in students
- Goal of thesis research and data
- What we can do to make an impact
Research Questions

- What is the relationship between student status (in-state, out-of-state, international) and perceived stress?
- What is the relationship between student status (in-state, out-of-state, international) and state anxiety?
- What is the relationship between student status (in-state, out-of-state, international) and sleep habits?
- What is the relationship between student status (in-state, out-of-state, international) and GPA?
Background- Stress in College Students

- Only 23.4% of students have low levels of stress.
- Almost 50% of college students have moderate levels of stress.
- 25% of college students have high stress levels.
- Effects of stress on current generation.

Background - Effects of Sleep

- In a sample of college students, 44% of students struggled with depression and 50% struggled with anxiety. These both were directly correlated with poor sleep habits.

- 35% of students do not get enough sleep each night

- Since COVID-19 has hit, two in three adults say they are sleeping more (31%) or less (35%) than wanting to

- 3 in 4 adults report having a high stress level (8-10) during the past year related to the pandemic

Instrumentation

■ Perceived Stress Scale
  - Measures the degree to which one measures how stressful their life is within the last 30 days (14 questions).
  

■ State-Trait Anxiety Inventory Short
  - Measures both state and trait anxiety (5 questions of each)
  

■ Sleep Habits Questions
  - Measures sleep habits, patterns, and disruptions
Methodology

Procedures

■ Created an anonymous file on Qualtrics for easy distribution
■ Recruitment efforts
■ Informed consent process

Analysis

■ Cleaned and coded data
■ Ran descriptive statistics
■ Ran significance tests
  – One way ANOVA (analysis of variance)
  – Grouping variable was student's status as in-state, out-of-state, or international.
Results - Demographics

- 19% (N=20) of our participants were the age of 18, 24% (N=26) were the age of 19, 24% (N=26) were the age of 20, 12% (N=13) were the age of 21, and 12% (N=13) were the age 22+.

- Majority of our participants were Caucasian at 75% (N=80). The remainder of the participants were Asian at 12% (N=13), Biracial at 3% (N=3), Black/African American at 2% (N=2), and Hispanic at 2% (N=2).
Our partakers were tied in the number of Freshman and Sophomores at 29% each. 19% were Juniors, 12% were Seniors, and 5% were second year Seniors.

3% of our participants hold a GPA <3.0, 2% hold a GPA between a 3.0 - 3.3, 15% hold a GPA between a 3.3 - 3.6, 34% hold a GPA between a 3.6 - 3.9, and 45% hold a 3.9+. 
Results-Demographics Continued

- Most of our participants were in-state students- 63% (N=67). 19% were out-of-state students and 12% were international students.

- Lastly, 37% of our participants live less than 100 miles from Western Michigan University, 37% live between 100-200 miles from campus, and 20% live 200+ miles from campus.
Results

- **Perceived Stress Scale (PSS) mean for the sample (N=100)**
  - Minimum score: 0; Maximum score: 40
  - Mean: 33.02 (Std. Deviation: 3.01)
  - There was not statistically significant between group differences on perceived stress as determined by a one-way ANOVA $F(2, 95) = .268, p = .766$
    - Confirmed through a Post Hoc Tukey test.

- **STAI-5 (State Anxiety subscale) mean for the sample (N=101)**
  - Minimum score: 5, Maximum score of 20
  - Mean: 8.04 (Std. Deviation: 2.92)
  - There was not statistically significant between group differences on state anxiety as determined by a one-way ANOVA $F(2, 97) = 1.34, p = .253$
    - Confirmed through a Post Hoc Tukey test.
Results

- There was not statistically significant between group differences on the following sleep habit variables as determined by multiple one-way ANOVA's.
  - Sleepiness
    - (F(2, 97) = .247, p = .781
  - Satisfaction with sleep
    - (F(2, 97) = 1.55, p = .218
  - Do they nap?
    - (F(2, 97) = 1.57, p = .213
    - Confirmed through Post Hoc Tukey tests.
- There was not statistically significant between group differences on the following sleep habit variables as determined by a one-way ANOVA (F(2, 96) = .383, p = .683.
  - Confirmed through a Post Hoc Tukey test.
Limitations

- Limited time to collect data
- Sample of only 106 students from one university
- Majority of participants were LHC students
- Sample consisted of primarily white, educated, female students
- 60 in-state students and only 20 out-of-state students took the survey
- COVID-19 impacts (virus related stressors: uncertainty, fear, grief, etc.)
Conclusions

- College students are experiencing unprecedented levels of stress as evidenced by their PSS scores.
  - *This could explain why there were no differences between groups on perceived stress.*

- College students seem to be experiencing low levels of state anxiety.

- College students are exhausted regardless of status as in-state, out-of-state, and international.
  - *Students are experiencing a great deal of sleepiness and are not satisfied with their sleep.*
Acknowledgements

A huge thank you to Dr. McGrady, Dr. Linn, Ms. Townsend, and Mr. Helms. This project couldn't have been done without each of yours help and guidance.
References


References


