"Can the Weather Have an Impact on Someone's Day or Mental Health"?

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Abstract

This experiment was carried out by the researcher in order to assess the mental health of participants in relation to the weather. As a result, the researcher created a naturalistic observation study. The researcher was able to observe the individuals in their natural state as a result of this. The participant is the independent variable. The symptoms are the dependent variable.

The participants were selected by using the non-probability convenience sampling method. There were a total of N=30 subjects in total. The subjects were located in the AUC, students from Spelman and students from Morehouse. The students varied from all classes.

The research was conducted virtually with the subjects. The data collected came from the subjects on both campuses which can be labeled X1 and X2. The researcher collected the data on Monday and Friday through a questionnaire. The questions were about one's day and how the weather affected it.

Operational Definitions

Mental Health: mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices

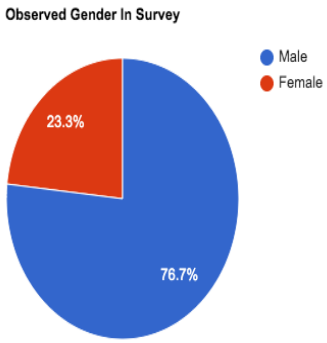
Inclement Weather: means the existence of rain or abnormal climatic conditions (whether they be those of hail, snow, cold, high wind, severe dust storm

Introduction

Methods Section I(Survey Study)

Design

A Likert Questionnaire Study



Participants(Pp):

A convenience sample of thirty adults (N=30) was taken from Morehouse and Spelman College, in Fall 2021. Participants were chosen through non-probability convenient sampling (23 males and 7 females). The participants' (Pp) ages varied from 18 to 22 years old. During this period, 23 males and 7 females were observed.

Table 1: Demographics of the Sample

Age	Male	Female
18-22	23	7

Instrument

The Are You Dealing With Depression Based On Weather Conditions questionnaire was designed to determine whether weather affects mental health. The Are You Dealing With Depression Based On Weather Condition survey uses a 30-item Likert scale design to determine whether inclement weather may alter someone's day or mood. The questionnaire includes demographic questions as well as questions on bad weather that may be answered by either males or females. Demographics (Section II) included questions about gender, race, school, and age. Section III was designed in the form of an exam. The more “Always” responses a person receives, the more conscious they are of how bad weather impacts their mental health. Table 2 depicts three sample questions from Section II of the Are You Dealing With Depression Based On Weather Conditions.

Table 2: Sample Questions

Has caused a low level of energy.
A. Never
B. Sometimes
C. More than half of the days
D. Always

Has increased annoyance and periods of breakdown. A. Never B. Sometimes C. More than half of the days D. Always
Disturbed my ability to study/concentrate. A. Never B. Sometimes C. More than half of the days D. Always

Data Analysis

Graphpad and Independent t-test was used to assess the questionnaire

Table 3: Coding Survey

Behavior Observed	Sometimes	More than half of the days	Always	Never
Point Value	2	-2	-4	4

Procedure

Participants were instructed to complete a 30-question survey about how inclement weather affects mental health as part of the procedure. The information was gathered using a scale of Never, Sometimes, More than half of the days, and Always. The codes were worth -4, -2, 2, and 4 points, accordingly. The questionnaires were distributed by the researcher to participants, who then completed the survey without interference by the researcher. After collecting all the data from all 30 individuals, the researcher analyzed it and entered it into a google spreadsheet.

Results

A dependent t-test was used to determine whether or not inclement weather has an effect on someone's mental wellbeing. The findings of this study proved, using factual data, that weather does affect one's mental health. ($t(28) = 0.87, p>.05$) Despite the fact that the weather is dependent, the data show that weather is independent and affects mental health. This observational study adds to a large body of continuing research to show that weather does affect one's mental health. See table 4 for reflections.

Table 4: T-Test Analysis for Depression systems based on Weather Conditions

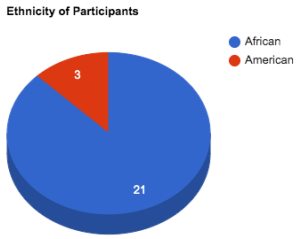
Variable	Mean	SD	*df*	*t*	*p*
Gloomy Day	4	3.95	28	0.87	.05
Sunny Day	3.5	4.081			

Conclusion:

Method Section II(Observational Study)

Participants

This research included 12 (N=12) students as participants (Pp). The Sophomores from Morehouse College were chosen as participants. A non-probability convenient sampling strategy was used to pick each participant. The sample was divided into two groups: Sunny day (n=6) and Gloomy day (n=6). The bulk of participants were in their late teens. Participants were of various nationalities, with the majority being African Americans. Figure 1: Ethnicity of Participants in Percentages shows a breakdown of the ethnicity demographics.



Procedure

For five days, the participants were watched on a daily basis. The researcher observed the participants' everyday activities on sunny and cloudy days. The students were assessed on the researcher's depression scale based on their symptoms. The researcher classified their body language, tone of voice, and weariness and manually recorded the data.

Data Analysis

Based on the activities of the participants, a t-test analysis was done to determine whether there was a significant difference in depressive symptoms between gloomy and sunny days. Graphpad was used to do the t-test. The participants were categorized based on how they displayed

depressive symptoms in relation to the weather. Participants in rank one displayed indicators of grief, more so of despair. Signs of anger/irritation are ranked third, delayed bodily motions are ranked fifth, reduced interest in social abilities is ranked seventh, and no energy/tiredness is ranked ninth. When coding participants, there was no prejudice, and each participant was coded on an equal scale. Table 1: Coding Depression

Table 1: Coding Depression

Depression Symptoms	**Code**
Grief/Despair	1
Anger/Irritation	3
Sluggish Body Movements	5
Reduced interest in Social Abilities	7
No Energy/Tiredness	9