Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

Aggression and Empathy among Graduating Class Students of Social Science and Natural Science Colleges of Addis Ababa University

by

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Addis Ababa

June, 2023

AGGRESSION AND EMPATHY AMONG GRADUATING CLASS STUDENTS OF SOCIAL SCIENCE AND NATURAL SCIENCE COLLEGES OF ADDIS ABABA UNIVERSITY

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A THESIS SUBMITTED TO THE SCHOOL OF PSYCHOLOGY, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIRMENTS FOR THE DEGREE OF MASTERS IN DEVELOPMENTAL PSYCHOLOGY

JUNE 2022
ADDIS ABABA

Acknowledgments

I am deeply thankful to several individuals who have played significant roles in bringing this thesis to fruition. Their generosity and empathy have been invaluable throughout this journey. I would like to extend special appreciation to the participants of this study, particularly the class representatives, who demonstrated remarkable dedication amidst their busiest semester. My advisor, Dr. Daniel Tefera, provided unwavering support for which I am truly grateful. Additionally, I am indebted to my children, whose tender support constantly fuels my motivation. Lastly, I'd like to express gratitude to all the scientists who have wholeheartedly devoted themselves to the advancement of science.

Declaration

I declare that this MA thesis is my original work and all the sources used in this study have been acknowledged. I confirm this with my signature

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This is to certify that the thesis prepared by Hiwot Gebremedhin with the title "A*ggression and empathy among graduating class students of social science and natural science colleges of Addis Ababa University*" and submitted to the School of Psychology, Addis Ababa University in partial fulfilment of the requirements for the degree of Masters in Developmental Psychology

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Abstract

The goal of the current study was to ascertain how aggression and empathy related among Addis Ababa University's undergraduate graduating class students. 161 students between the ages of 19 and 27 were selected as a sample from AAU departments. The survey included 89 male students (55%) and 72 female students (45%). Students were divided into two groups for the study's purposes: social science college students (N=78) and natural science college students (N=83). The study employed a cross-sectional research design. Data were gathered using the Interpersonal Reactivity Index and a new aggression questionnaire prepared specifically for this study. In order to analyze the data, the independent-t test and Pearson's product-moment correlation coefficient were used. The findings revealed no statistically significant correlation between aggression and empathy. Both males and females showed similar levels of aggression. Students in the Natural Science college showed higher aggression as compared to those in the Social Science college. Students in both Social Science and Natural Science colleges showed similar levels of empathy. Additionally, there was no statistically significant difference between females and males in empathy levels. Given the pressing global significance of aggression, further studies are required to enhance our understanding of this phenomenon. Moreover, it is imperative to thoroughly examine the relationship between aggression and empathy, as it holds significant potential for addressing the prevailing levels of violence worldwide.

Keywords: Empathy, Aggression

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Acronyms and Abbreviations

AAU: Addis Ababa University

IRI: Interpersonal Reactivity Index

WHO: World health organization

IA: Instrumental Aggression

VA: Verbal Aggression

PHA: Physical Aggression

ANG: Anger

RA: Relational Aggression

AQ: Aggression Questionnaire

Chapter One

Introduction

1.1 Background of the Study

Violence has been deeply ingrained in the long evolutionary trajectory of humanity. In primitive human skeletal remnants, bone fractures have been discovered that are incomprehensible except through the use of bats forcefully and weapons that thrust (Trinkaus & Zimmerman, 1982). Pieces of the weaponry were occasionally discovered lodged within the bony rib cages of the remains. The advancement and increased complexity of paleontological research have broadened the recognition and acceptance of violence among our forefathers. (Daly & Wilson, 1988) and proved the long-standing violence in the human species.

The fact that humans have always been violent to each other can be substantiated through the realities of traditional societies existing in the present. For instance, studies show rates of homicide are normally high amongst traditional societies, such as the Ache of Paraguay (Hill & Hurtado, 1996) and the Tiwi of northern Australia (Hart & Pilling, 1960). Moreover, amongst the Yanomamo of Venezuela, for instance, approximately 25% of adult males meet their demise as a result of interpersonal violence, either within their own community or due to conflicts with neighboring groups (Chagnon, 1988). Some early theoreticians have foreseen that violence among the human species will continue to be the defining feature of the species (Koestler, 1972 as cited in Forgas et al., 2011).

Looking at the data in recent years, the projection of the early theoreticians that violence to keep existing is evinced. A publication on an interdisciplinary discussion on key themes of violence declares violence to be an almost constant existence experienced by a significant portion of the human population, visible through a range of behaviors, both physical and verbal, and also ingrained within various principles (Tripp, 2020). According to this publication, given that violence is deeply interwoven within our languages and intricately tied to the norms and regulations governing our lives, it permeates our imaginations, dreams, and cultures. It shapes our perspectives, both on an individual and collective level. Consequently, violence has been and will be an enduring reality of the human world.

Violence is an extreme form of aggression that has severe physical harm as its goal (Anderson & Bushman, 2002). According to Allen and Anderson (2017), aggressive and violent behaviors are best conceptualized as being on a continuum of severity with relatively minor acts of aggression (e.g., pushing) at the low end of the spectrum and violence (e.g., homicide) at the high end of the spectrum. Acts of violence are regarded as acts of aggression but not all acts of aggression shall be considered a violent act. Aggression strengthens adverse emotions and social predispositions, impeding human progress and potentially leading to violence (Wessels & Joseph, 2013).

A good portion of world's population have been long suffering from a multi-faceted struggle. The effects of this suffering may have a direct relationship with individuals' aggression levels. Family challenges such as poverty, familial stress, disarray, single parenthood, having a large family, and conflicts within the household are all interconnected with the emergence of aggression, impacting every individual within the family unit (Labella & Masten, 2018). Aggression is also influenced by specific interpersonal relationships. For instance, being associated with antisocial peers is a significant risk factor for the development of aggression (Lansford, 2018).

The influence of environmental stressors on aggression extends beyond the confines of the family unit. Observing or experiencing violence, whether firsthand or through media exposure, is connected to the development of aggression in various ways. For instance, there exist noteworthy connections between being exposed to violence in the community and the escalation of aggressive conducts (Labella & Masten, 2018). These environmental factors provide models of aggression for imitation and foster the normalization of aggressive behavior (Labella & Masten, 2018).

Although humans have unlimited capacity for violence and aggression, they are equally capable of impressive abilities for cooperation, empathy, altruism, and even self-sacrifice (Forgas et al., 2011). Our species possesses a remarkable ability to effectively organize and integrate exceptionally large social groups and units, mitigating the risks associated with becoming entangled in daily conflicts and acts of aggression (Dunbar, 2008 as cited in Forgas et al. 2011). It has been proposed that the success of Homo sapiens compared to other hominins can

be attributed to their distinctive empathic abilities, enabling humans to rapidly recognize and mentally empathize with the emotional states of others (Dunbar, 2003).

Empathy's key role of reducing aggressive behavior is a widely held belief among scholars (Jolliffe & Farrington, 2004). Individuals who adopt the perspective of others and experience sympathy and compassion for them are more inclined to abstain from behaviors that could potentially harm other individuals (Eisenberg, 2000). According to the findings of Bush et al. (2000), individuals who display higher levels of aggressive behavior, even intermittently, tend to demonstrate lower levels of empathic concern towards their fellow humans.

Several studies have found inverse relationships between aggression and empathy. For example, the absence of empathy has been recognized as a factor that increases the likelihood of developing hostile, aggressive, or potentially violent behaviors (e.g., Feshbach, 1997). Other studies done on forensic populations found that offenders have significantly lower empathy levels compared with non-offenders (Jolliffe & Farrington, 2004). Feshbach (1983), pointed out that empathy may play a substantial role in the regulation of aggression. He elucidated that empathetic people are capable of comprehending the perspective of others; Thus, they are less likely to become aggressive due to misinterpreting other people's behaviors.

According to Feshbach (1964), it is suggested that observing the consequences of an aggressive act should trigger distressing reactions in an empathetic observer, even if that observer is the individual who instigated the aggression. In such cases, the negative consequences of an aggressive act are expected to act as inhibitors, curbing the instigator's own aggressive tendencies. Consequently, individuals with high levels of empathy would be expected to display less overt aggression compared to those with lower levels of empathy.

The proposition that empathy serves as a deterrent to aggression suggests that enhancing empathic abilities in individuals with antisocial tendencies could potentially reduce aggressive behavior. Studies indicate that training programs focused on enhancing empathic skills have proven effective in decreasing antisocial behavior. These programs are even incorporated as regular elements of prison treatment programs, including within correctional facilities that house individuals convicted of violent offenses (eg. Ross & Ross, 1995; Serin & Kuriychuk, 1994).

There isn't universal agreement among researchers studying the aggression-empathy relationship that there is a direct inverse relationship between the two. A couple of studies advise further research into the association because it may involve factors that hasn't been fully uncovered. An example of such view is Dryburgh & Vachon 's. According to Dryburgh & Vachon (2019), the generalizability of the inverse relationship between aggression and empathy has not yet been fully determined. Accordingly, different studies found very weak to no relationship between aggression and empathy (Lindsey et al., 2001; Higgins & Sheffield, 2007; Goldstein & Higgins, 2001; Vachon et al., 2014).

1.2 Statement of the Problem

The world today has become a threatening place to live due to extreme violence and aggressive acts. One of the world's most affected countries by conflict over the past few years is Ethiopia. Lots of killings and sufferings are happening in different parts of the country. Families, especially women and children are under constant threat. Mind-boggling aggressive acts became normalized. As a mother of three young children, the researcher shares the unfolding crisis vulnerable societies are under.

Aggression is a significant challenge to public health and the society as a whole. In particular, aggression would exponentially degrade the welfare of societies in a country that already faces many complex problems like poverty, illiteracy, and drought. Knowing the level of aggression in a population and working out ways to reduce it is an issue that calls for urgent action. One way of reducing aggression may be studying and working on enhancing empathy.

According to Wilson and Ray (2017), empathy remains a relatively understudied concept in literature. This reality is a lot more pronounced in Ethiopia. There appear to be very few available studies done on empathy in the Ethiopian context. Only a limited number of studies have assessed empathy in the Ethiopian context (Dehning et al., 2013; Girma et al., 2012). In addition, there is much work to be done in studying the relationship between aggression and empathy particularly in Ethiopia.

A considerable amount of studies has explored the connection between aggression and empathy in various regions worldwide. However, there remains perceptible research gap in relation to this topic in Ethiopia. Given the current prevalence of extreme forms of aggression

and violence making international headlines concerning Ethiopia, there is an urgent need for further research on aggression, particularly in its relation to empathy.

In addition to the dearth of literatures on the relationship between aggression and empathy, there are opposing views regarding the direction of the relationship concerning the two constructs. Although a significant proportion of literature claims an inverse relationship between aggression and empathy, few studies have shown otherwise. Dryburgh and Vachon (2019), have stated that the generalizability that aggression and empathy having inverse relationship is still not known. Different studies have shown a very low to no association between aggression and empathy (Lindsey et al., 2001; Higgins & Sheffield, 2007; Goldstein & Higgins, 2001; Vachon et al., 2014). These studies suggested that lack of empathy may contribute to aggressive behavior by young people, but this is linked to a wide range of factors such as culture, age and context. These confounding factors should be well understood in order to get an immaculate association between aggression and empathy.

1.3 Objectives

1.3.1 General Objective

The general objective of this study is to assess levels of aggression and empathy and find if there's a relationship between aggression and empathy levels in undergraduate graduating class students in the Colleges of Social and Natural sciences at Addis Ababa University.

1.3.2 Specific Objectives

The specific objectives of this study are:

1. To determine the relationship between aggression and empathy among undergraduate graduating class students of Addis Ababa University (AAU).

2. To analyze aggression levels among male and female undergraduate graduating class students of AAU.

3. To analyze empathy levels among male and female undergraduate graduating class students of AAU.

4. To determine the difference in aggression levels between Social science and Natural science college undergraduate graduating class students of AAU.

5. To determine the difference in empathy levels between Social science and Natural science college undergraduate graduating class students of AAU.

1.4 Significance of the Study

Studying individual and collective aggressive levels may give a starting point in understanding the ongoing vulgarity among members of societies. Solutions begin to arise from the mere knowledge of what is. This study was conducted to bring forward the relationship between aggression and empathy levels in a specific population that is; students of AAU. According to the National Youth Policy (2004), youth make up more than 33% of Ethiopia's population. Youths are therefore an essential component of society that can help to increase the potential for economic development and societal well-being.

Studying empathy and its ways of inhibiting aggression would bring about insight into what societies must work on in order to have healthier relationships among members of their society. It additionally, will provide guidelines for the preparations of possible interventions aimed at addressing problems arising from aggression. Studying the relationship between aggression and empathy in students from various AAU departments may also aid in the development of more thorough and comprehensive curricula that can take into account the need to produce citizens who are not only knowledgeable in their respective fields but also people who are mentally healthy, compassionate, positive and peaceful. Most importantly, it might emphasize the need for conducting scientific research on aggression and empathy in broader settings and communities, which could aid in the development of conflict resolution techniques that can produce lasting effects for a lasting peace in societies and across the country.

1.5 Delimitation

The scope of this study is limited to undergraduate graduating class students of Addis Ababa University.

Chapter Two

Review of Related Literature

2.1 Aggression

Human aggression although defined in different ways by different theorists is generally defined as any behavior aimed at causing harm to another individual, undertaken with the immediate intention of inflicting harm. Moreover, the perpetrator must hold the belief that the conduct will cause harm to the recipient and that the recipient is motivated to avoid such behavior (eg. Bushman & Anderson, 2001; Baron & Richardson, 1994; Berkowitz, 1993). Arnold Buss defined aggression as "a response that delivers noxious stimuli to another organism." Worchel et al. (1988) in other words, defined aggression as being a purposeful action intended to cause harm or injury to the person or persons towards whom it is directed.

Harm that occurs as an unintended consequence of helpful actions is not considered aggressive. This is because the individual causing harm believes that the recipient is not motivated to evade the action, even if harm is caused (e.g., pain experienced during medical treatment). Accordingly, accidental harm is not categorized as aggression in the current study since it lacks the deliberate intention to cause harm.

Aggression represents a significant challenge to public health and society. It has the potential to disrupt communities and impact both the victims and the aggressors themselves. Aggressive adults frequently exhibit psychological difficulties, engage in illegal activities, have strained marital relationships, and face challenges with unemployment (Coccaro et al., 2009). Aggression also reinforces negative emotions and social tendencies which limit human progress and can lead to violence and conflicts (Wessels & Joseph, 2013).

2.1.1 Components of Aggression

Aggression is influenced by a complex interplay of the following components and manifests in different ways.

2.1.1.1 Physical (Hostile) Aggression. Hostile aggression or reactive aggression is a form of aggression that is recognized as impulsive, defensive, thoughtless, driven by anger, and with

the underlying motive of causing harm to the target. It typically occurs as a reaction to a perceived provocation (Bushman & Anderson, 2002; Little et al., 2003). This form of aggression is manifested by the offender creating harm on the victim physically (eg. hitting, stubbing, biting, shooting etc.). This type of aggression indicates poor impulse control.

2.1.1.2 Instrumental (Proactive) Aggression. Proactive aggression is typically described as purposeful and driven by specific goals, with a notable lack of emotional reactivity (Flanigan & Russo, 2019). Furthermore, it is viewed as a premeditated strategy to achieve a certain objective, rather than primarily intending to harm the victim. This form of aggression is considered proactive rather than reactive (Berkowitz, 1993; Geen, 2001). This type of aggression is rewarding for the offender in such a way that the offender gets what they want.

2.1.1.3 Relational Aggression. Relational aggression is a form of aggression characterized by the use of socially manipulative strategies to harm or threaten harm to someone's reputation or social status (Werner & Crick, 1999). These may include threats to withdraw friendship, deliberate ignoring, and group exclusion as tactics to harm or manipulate others within social dynamics (Knight et.al, 2018). While the majority of research on relational behavior focuses on children and adolescents, there is an increasing body of evidence indicating that it continues to be prevalent well into the phase of emerging adulthood (Knight et.al, 2018).

2.1.1.4 Verbal Aggression. Verbal aggression as the name indicates is using words to hurt others. For example, yelling, screaming, swearing, and name calling (Warburton & Anderson, 2015).

2.1.1.5 Anger. Anger is commonly regarded as a reaction to the perception of a threat either towards oneself or others. It also arises as a response to frustration, as frustration has long been acknowledged as a catalyst for anger and subsequent aggression (Blair, 2012). Therefore, anger is the actual emotion that is felt.

2.2 Empathy

Empathy is a relatively recent concept that has multiple definitions according to different theorists and social studies experts. One general definition of empathy elucidated is the ability to understand and share another individual's emotional state or feelings, which are more aligned

with the other person's situation rather than one's own situation (Cohen & Strayer, 1996; Davis, 1996; Feshbach, 1997; Hoffman, 2000). Another definition of empathy was forwarded by the American psychologist Carl Rogers. According to Rogers (1975), empathy is the process by which a person accurately comprehends the emotions and thoughts of another individual in relation to a specific situation and experience. The person being empathic shares an emotional resonance with the other individual, and effectively communicates this understanding (Rogers, 1975).

The renowned American developmental and clinical psychologist Hoffman (2000) defined empathy as, “an affective response more appropriate to another’s situation than one’s own”. Empathy is also defined as the capacity to perceive and differentiate the experiences undergone by another person, encompassing both the emotional states and the mental perspectives of others. It involves understanding and relating to the feelings and thoughts of others in a profound and comprehensive manner (Garaigordobil, 2009 as cited in Güleç, 2020).

The definitions and explanations forwarded by psychologists and other related experts about empathy are diverse. The reason behind the versatility of defining and explaining the term is that the concept of empathy is complicated. Moreover, it is relatively a young concept to gain popularity in order to get attention to be studied. In this study, empathy is conceived as the capacity to understand the feelings, emotions, and perspectives of others as if they are our own.

2.3 Aggression and Empathy

Generally, aggression has been inversely related with empathy (e.g., Miller & Eisenberg, 1988; Phillips & Giancola, 2007). A number of studies found a negative relationship between aggression and empathy (e.g., Jolliffe & Farrington, 2004; Vachon, et al., 2014; Phillips & Giancola, 2007). When individuals possess an understanding of others' perspectives and can empathize with their emotions, they exhibit a reduced likelihood of participating in actions that could potentially cause distress to those individuals (Eisenberg, 2000). Moreover, individuals who possess a natural inclination for perspective-taking tend to exhibit lower levels of dominating conflict behaviors and chronic aggression compared to others. They tend to rely more on collaborative problem-solving and open discussions when confronted with conflicts (Richardson et al., 1994).

There is a commonly held belief that aggression and low empathy are related, and that a primary reason for aggression may be a deficiency in empathetic responsiveness (Hazebroek et al., 2017). According to the Dual Concern Model by Pruitt & Rubin (1986) cited in Forgas et al. (2011), when negotiators become attentive to only self-interest they become overly aggressive. But if there's a balance between self-interest and empathy occurs, creative problem-solving will be facilitated. Another study relating aggression and empathy in Greek undergraduate students from two American universities has revealed that both cognitive and emotional empathy exhibit a negative correlation with direct physical aggression. This means that individuals who possess higher levels of cognitive and emotional empathy are less likely to engage in physical aggression (Sharma, 2021).

A systematic review and meta-analysis done on 35 studies found a strong negative relationship between cognitive empathy and offending (Jolliffe & Farrington, 2004). Empathy has also been repeatedly proposed as being a core deficient psychological characteristic in aggressive youth (Red & Wineman 1951 as cited by Lovett & Sheffield, 2006). Moreover, frequent references to problems with perspective-taking have become descriptions of aggressive children (eg. Webster-Stratton & Spitzer, 1996).

A study done by Stanger et.al (2016) on the aggression-empathy relationship, found that empathy reduced aggression in competition. Another study done on 548 adults aged 36 to 63 years old residing in the urban area of Palermo, Italy revealed higher levels of empathy were associated with lower levels of aggression (Musso et al., 2022). Diminished empathy, as observed in individuals with psychopathy, elevates the risk of engaging in aggression driven by specific objectives (Blair, 2018). Another study found the probability that individuals with higher anger scores show empathy behaviors is 45.58 times higher than those who have lower scores in the subscales of anger (Khoddami & Jahandari, 2020). According to Eisenberg et al. (2010), empathy is a significant factor associated with and likely contributing to prosocial behavior directed towards others, the restraint of aggression and antisocial behavior, and the overall quality of intergroup relationships.

In contrast, some studies showed weak to no relationship between aggression and empathy (eg. Lindsey et al., 2001; Lovett and Sheffield, 2007; Goldstein & Higgins-D'Alessandro, 2001; Vachon, et.al, 2014). A study done on 176 freshmen and sophomore

students in Northern Illinois University found no association between higher levels of cognitive and affective empathy with lower levels of relational aggression (Platt, 2018). This study additionally showed that instrumental relational aggression is positively correlated with instrumental prosocial conduct. In conclusion, it is still unclear if aggression and empathy are causally or causally inversely connected (Dryburgh & Vachon, 2019).

A meta-analysis comprising 106 effect sizes has been performed on published and unpublished studies and discovered that the relationship between aggression and empathy has a surprisingly poor connection (Vachon et al., 2013). Another experimental research measuring empathy on 30 aggressive and 30 non aggressive subjects found no significant difference between the two groups in affective empathy or subjective measures of emotion (Gantiva et al., 2018). Yet another study by Endresen and Olweus (2001) on Norwegian adolescents, found a relatively weak relationship between aggression and empathy.

2.4. Gender, Aggression and Empathy

It is widely accepted that males tend to display higher aggression than females. Some studies found males to be more frequently involved in physical aggression compared to women (eg. Archer, 2004; Bettencourt & Miller, 1996). In a nationally representative study of Dutch children, gender difference where males show higher aggression was spotted by two years of age (Alink et al., 2006). A meta-analysis done on 273 research reports found that there is a considerable gender difference in aggression such that males generally show significantly higher aggression than females (Knight et al., 2002).

There is a contrasting evidence of literature that show males aren't always more aggressive than females. One example of such studies is Garg et al. (2018). This study done on 300 grade 9/10 student adolescents in India found higher levels of overall aggression in females compared to males. Moreover, the study found verbal aggression to be maximum in males whereas in females, anger component of aggression was maximum. Another meta-analysis study concluded that aggression levels were similar for males and females across different contexts (Archer, 2004). And yet another meta-analysis (Bettencourt & Miller, 1996) examined studies on aggression and found that, when provoked, both males and females exhibited similar levels of aggression.

It is mostly proposed that males exhibit lower levels of empathy compared to females. Various studies have fairly consistently revealed that females report higher levels of empathy than males (eg. Eisenberg & Lennon, 1983; Kavussanu et al., 2009; Hojat et al., 2002). More specifically, women generally score higher on all four IRI scales (e.g., Davis, 1980). Moreover, a study relating empathy and aggression levels with gender, in undergraduate students with an age range between 18-54 found that females displayed higher Empathic fantasy scores compared to males (Sharma, 2021).

Contrary to the widely held belief that females are more empathic than males, few studies show similar empathy levels in females and males (e.g., Miller et al., 2011). A study done in 135 nursing interns using the IRI at Imam Abdulrahman Bin Faisal University, Saudi Arabia found males displaying higher levels of empathy (perspective-taking and empathic concern) than females (Ghazwani et al., 2022). A few other studies hypothesized that, rather than reflecting genuine differences, the fact that women tend to perceive greater empathy than men may be related to gender norms and stereotypical expectations in society (eg. Rueckert et al., 2011; Loffler and Greitemeyer, 2021).

2.5 Aggression, Empathy, and College

There are contradicting views in relation to levels of empathy and aggression among social science and natural science college students. In one approach, a study based on the Attraction, Selection, and Attrition (ASA) model discovered that business students reported lower levels of empathy than psychology students (Litten et al., 2018). Whereas according to a different study, there was no difference in the empathy levels of performing arts students compared to non-performing arts students (Tandon, 2017).

Attraction, Selection, and Attrition (ASA) model

The Attraction, Selection, and Attrition (ASA) model introduced by Benjamin Schneider in 1987 posits that people are attracted to organizations that embody similar personality traits and values to their own (Schneider, 1987). Based on the model, organizations are shaped by the individuals they comprise, and conversely, the individuals within the organizations are influenced by an Attraction-Selection-Attrition (ASA) cycle. The cycle is put as follows.

Attraction:

This process involves the idea that individuals' choices of organizations depend on their subconscious evaluation of how well their personal traits align with the characteristics of the organization they are considering, in this scenario, the academic field. In other words, people tend to favor certain organizations based on how closely they perceive the goals of the organization match their own personalities.

According to Schneider (1987), it is possible to predict various aspects of students' academic and vocational outcomes, such as college majors, grade point averages, achievement imagery, memory capacity, leadership roles on campus, vocational interests, and job choices, solely based on the biodata cluster to which they belong.

Selection:

This process pertains to the methods, both formal and informal, that organizations employ to select individuals possessing the specific qualities they seek during the hiring process in this case academic departmental placement.

Attrition:

This procedure involves the concept that individuals tend to quit organizations in which they do not feel like they belong in this case dropping out of a specific academic discipline.

On the basis of ASA theory, research done comparing undergraduate students of Business and psychology in Australia found significantly higher levels of cognitive and emotional empathy in psychology students than business students; Business students exhibited notably elevated levels of antisocial, interpersonal, and overall psychopathic traits compared to psychology students (Litten et al., 2018). Another study comparing students of Computer Science, Journalism & Mass Communication and Tour & Travel Management of Dev Sanskriti University in India, concluded that the mean score of aggression of science students is more than the Journalism & Mass Communication and Tour & Travel Management students (Tripathy, 2018). And yet another study done to compare aggression levels between the students of science, physical education and commerce, of Post Graduate Government College in India, found mean score of aggression of science students to be more than the physical education and commerce students.

The ASA model was used as the basis to assess aggression and empathy levels among students in the Social and Natural Science colleges in this research.

Chapter Three

Methodology

3.1 Study Design

The purpose of this study was to determine aggression and empathy levels, look for trends and relationships between the two, and determine aggression and empathy as a function of gender and academic discipline in social science and natural science college regular undergraduate graduating class students of Addis Ababa University. In order to do this, the study used a cross-sectional survey design. According to Coolican (2019), cross-sectional research design is a comparative study of several sub-groups captured for measurement at a single time. A cross-sectional study simultaneously compares samples drawn from separate distinguishable sub-groups within a population at one moment in time. Quantitative data was obtained from two questionnaires on empathy and aggression levels of the students.

3.2 Study area

AAU is one of the oldest Universities in Ethiopia, which is located in Addis Ababa, Ethiopia. The university was established in 1950. The university holds the distinction of being the oldest and largest institution for higher learning and research in Ethiopia (AAU, 2023). Over the years, the university has maintained its position as a premier center for teaching, research, and community services. AAU currently has a student body of 48,673 individuals, including 33,940 undergraduates, 13,000 master's students, and 1,733 PhD candidates (AAU, 2023).

AAU offers 70 undergraduate programs and 293 graduate programs (72 PhD and 221 master's programs) (AAU, 2023). Currently, AAU comprises 10 colleges, 4 institutes dedicated to teaching and research, and 6 research institutes primarily focused on research activities. These academic units collectively house 55 departments, 12 centers, 12 schools, and 2 teaching hospitals (AAU, 2023).

3.3 Study Population

The population of this study is all regular graduating class students of Addis Ababa University. The total number of graduating class students in the year 2022/2023 is 2852. Of this total, 1821 are males and 1031 are females. The count is allocated among the colleges as shown in Table 1.

Table 1

Number of Undergraduate Graduating Class Students of 2022/2023 of AAU

Colleges	**Total**	**Female**	**Male**
College of computational sciences	380	152	228
College of health sciences	550	160	390
College of Veterinary Medicine & Agriculture	53	20	33
Addis Ababa Institute of Technology	448	125	323
College of Business & Economics	768	311	457
College of Education & behavioral studies	35	25	10
College of Performing and Visual Arts	107	29	78
College of Social Sciences	186	68	118
College of Law and Governance studies	79	36	43
Ethiopian Institute of Architecture, building construction & city development	171	72	99
College of Humanities, Language Studies, Journalism & Communication	75	33	42

3.4 Sampling

Initially, all the colleges under AAU were segregated into two groups: natural sciences and social sciences, as specified in Table 2. Two colleges from the natural science field, (Addis Ababa Institute of Technology and College of health sciences) and two colleges from the social science field (College of social sciences and College of Performing and Visual Arts) were chosen at random from each group using simple random sampling technique (lottery method). Furthermore, two departments were chosen from each college by means of a simple random sampling approach (lottery method). The study used all graduating class students of the chosen departments as a sampling unit. Table 2 presents all colleges of AAU segregated into two groups as: Social and Natural Sciences.

Table 2

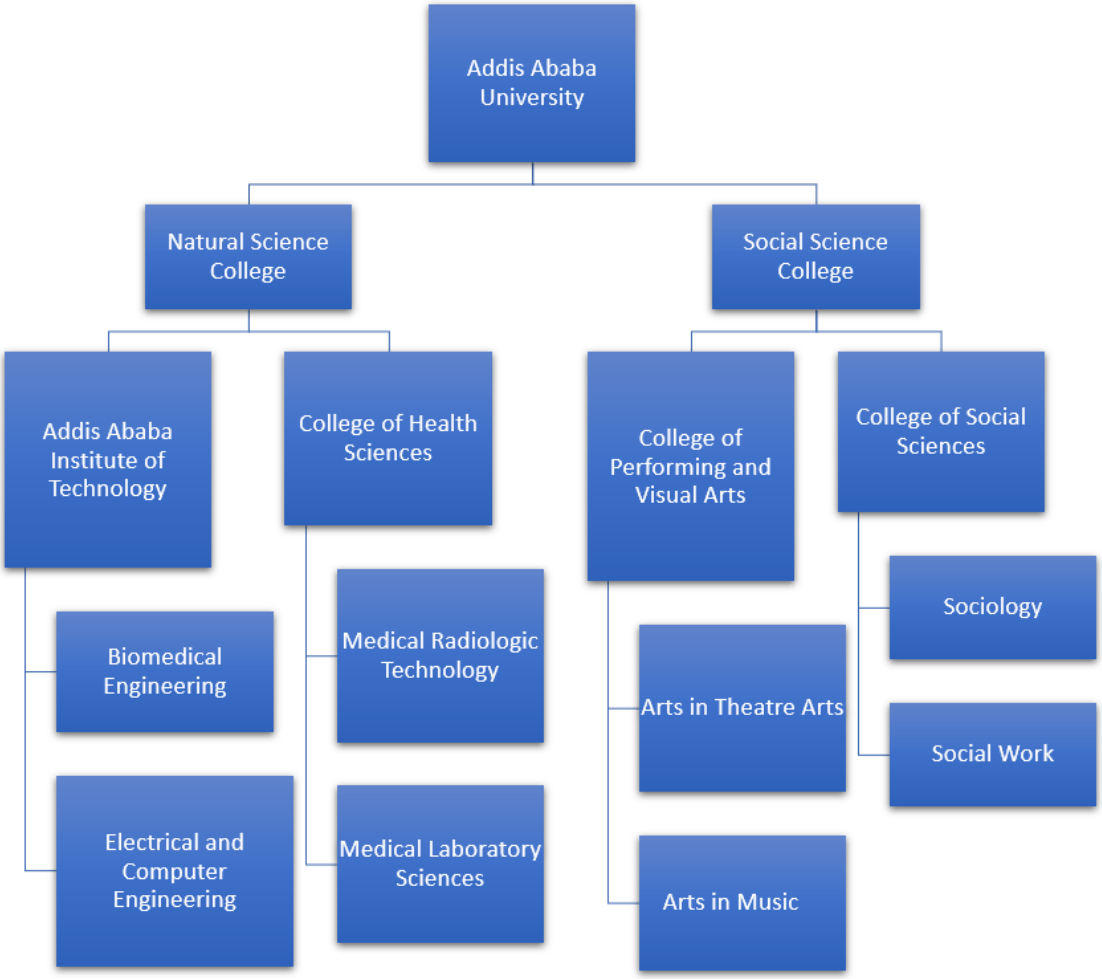
Colleges of Addis Ababa University

Natural Science	**Social science**
Addis Ababa Institute of Technology	College of Business & Economics
College of Health Sciences	College of Education & behavioral studies
College of Computational Sciences	College of Humanities, Language Studies, Journalism & Communication
College of Veterinary Medicine & Agriculture	College of Performing and Visual Arts
Ethiopian Institute of Architecture, Building Construction & City Development	College of Social Sciences
	College of Law and Governance studies

The representation of the population through randomly selected colleges and departments in selecting the sample is shown in figure 1.

Figure 1

Sampling Approach Taken in Recruiting Samples



3.5 Instruments

To measure aggression and empathy levels of the participants of the study, two instruments were administered. The aggression questionnaire for measuring aggression and the Interpersonal Reactivity Index for measuring empathy.

3.5.1 Aggression Questionnaire (AQ)

A new tool measuring aggression was constructed by the researcher. The aggression tool is a self-report tool that is designed to measure five major components of aggression (physical aggression, verbal aggression, instrumental aggression, relational aggression, and anger). Physical aggression is a form of aggression expressed physically. This type of aggression is overt and indicates poor impulse control. Examples of physical aggression may be kicking, hitting, slapping, stabbing, etc. Instrumental aggression is a form of aggression that is purposeful, goal-driven, and marked by low emotional reactivity is often referred to as instrumental aggression (Flanigan & Russo, 2019). In addition, it is conceived as a planned means of attaining some objective. In this form of aggression reward for the offender is the major goal.

Relational aggression is a kind of aggression that involves damaging or threatening to damage one's reputation, or social standing through socially manipulative means (Werner & Crick, 1999). These may include threats to withdraw friendship, deliberate ignoring, and group exclusion (Knight et al., 2018). Moreover, spreading lies, bantering to purposely hurt, and bullying (cyberbullying) come under relational aggression. Verbal aggression as the name indicates is hurting another with spoken words (i.e., verbal aggression such as yelling, screaming, swearing, and name-calling) (Warburton & Anderson, 2015). Anger is the emotion that is felt when threatened. It's experienced as bodily reactions such as tightness in the chest, increased and rapid heartbeat, tense muscles, sweating, a pounding head, shaking or trembling, etc.

The aggression questionnaire consists of 20 items which are rated on a five-point Likert scale from 0 (extremely uncharacteristic of me) to 4 (extremely characteristic of me).

The questionnaire yields five primary scales. Descriptions of the scales and corresponding item numbers are listed in Table 3.

Table 3

Descriptions of Scales and Corresponding Item Numbers of AQ

Scale name	Description	Items
AQ- IA	Instrumental aggression scale	1, 2, & 4
AQ-VA	Verbal aggression scale	5, 6,7, & 8
AQ- PHA	Physical aggression scale	9, 10, 11 &12
AQ-ANG	Anger scale	3, 13, 14, 15 &16
AQ-RA	Relational aggression scale	17, 18, 19 & 20

Content Validity Ratio (CVR)

After the questionnaire was constructed, the questionnaire was sent to 4 experts (developmental psychology MA graduates) to be evaluated for content validity which is a measure of how well items in the tool represent the dimensions or components of aggression being measured as evidence of the construct it's intended to measure. The questionnaire along with definitions of the 5 components (physical, instrumental, relational, verbal, or anger) of aggression was sent to the experts via email. The experts were asked to categorize each item on the basis of the aggression component it measures along with how well it measures the component (mild, moderate, or high).

After collecting the responses from the experts, Lawshe's content validity ratio was determined for each item and the results show that 4 experts categorized 8 items in the same manner as they were originally classified, 3 experts categorized 9 items as they were originally classified, 2 experts categorized 2 items as they were originally classified. Moreover, item 1 was categorized by all the 4 experts as an item measuring physical aggression while it was originally classified as measuring instrumental aggression because of the wordings used in the item. The item was retained in the final questionnaire after amendments were made to it.

The content validity index (CVI) is the content validity of the entire instrument, the mean of the CVR values for all items, and is found to be 0.78 (0.775) meeting the minimum CVR threshold of 0.78 and retained for the final instrument (Gilbert & Prion, 2016).

Reliability

To assess the reliability of the aggression questionnaire, a pilot study was carried out on 46 (16 females, 30 male) students with an age range of 19-25 years, from two different departments at Addis Ababa University, who were not part of the primary study (Chemical Engineering and Accounting and Finance). Cronbach alpha (α) was used as the analytical method to calculate the reliability of the questionnaire. The Cronbach's alpha result indicated that internal consistency was good for the overall scale (α =.810).

The AQ has 20 items on a 5-point Likert scale ranging from 0 to 4. The scoring is done for all items in the manner indicated on the scale except for a few items (8, 10, 12) that are reverse scored. The overall individual aggression level is the sum of all the scores of the items. The scores range from 0 (lowest aggression level) to 80 (highest aggression level).

3.5.2 Interpersonal Reactivity Index (IRI)

The Interpersonal Reactivity Index (IRI), is a standardized self-report measure of disposition to empathic responsiveness of the general adult population and the general adolescent population. It is the instrument used by the majority of empathy researchers and it has numerous versions in different contexts (in different languages and settings). In this research, the researcher used the original instrument constructed by Davis in 1980.

The Interpersonal Reactivity Index stands from the notion that empathy consists of a set of separate but related constructs. IRI has 28 items answered on a 5-point Likert scale. The measure has 4 subscales, each made up of 7 different items. These subscales are:

Perspective Taking (PT)– which measures the tendency to spontaneously adopt the psychological point of view of others (e.g., "I sometimes try to understand my friends better by imagining how things look from their perspective");

Fantasy (F)– taps respondents' tendencies to transpose themselves imaginatively into the feelings and actions of fictitious characters in books, movies, and plays (e.g., "When I am

reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me");

Empathic Concern (EC) – assesses "other-oriented" feelings of sympathy and concern for unfortunate others (e.g., "I often have tender, concerned feelings for people less fortunate than me"); and

Personal Distress (PD) – measures "self-oriented" feelings of personal anxiety and unease in tense interpersonal settings (e.g., "Being in a tense emotional situation scares me").

Reliability

According to Davis' original report (1980), the internal consistencies of the IRI constructs for males and females are as follows.

For males (Fantasy scale $\alpha = .78$, perspective taking $\alpha = .75$, empathic concern $\alpha = .71$, personal distress $\alpha = .78$) and

For females (Fantasy scale $\alpha = .75$, perspective taking $\alpha = .78$, empathic concern $\alpha = .70$, personal distress $\alpha = .78$)

The test-retest reliability of the overall scale is, .61 to .79 for males and .62 to .81 for females.

Validity

Davis (1983), provided the convergent validity of the subscales in the IRI by comparing them with earlier cognitive and emotional measures of empathy, self-esteem, interpersonal functioning, sensitivity to others, emotionality, and intelligence. The PT scale was linked with measures of interpersonal functioning, and individuals with higher PT scores reported less social dysfunction, more social competence, higher self-esteem, and greater interest in others' feelings and reactions. The FS scores were positively related to verbal intelligence and emotional reactivity. The EC scores were positively correlated with shyness and anxiety, and negatively associated with negative communication style, self-esteem, emotionality, and concern for others. The magnitude of these associations was mostly small to moderate ($-.54 < r < .56$). The PD scores were strongly related to lower self-esteem, poor interpersonal skills, vulnerability, uncertainty,

and fearfulness. The IRI for the most part was mostly moderately associated with other empathy measures (.11<r<.63.) (Davis, 1983).

The IRI has 28 items on a 5-point Likert scale ranging from 0 to 4. The scoring is for all items in the manner indicated on the scale except for items 3, 4, 7, 11, 12, 13, 14, 15, 18, 19 that are reverse-scored. The overall individual empathy level is the sum total of all the items ranging from 0 (lowest empathy level) to112 (highest empathy level).

3.6 Data Collection Procedure

This research utilized a survey data collection method. In order to access the students, individuals supporting the researcher personally visited the classes and met with the class representatives from various departments. Some of the representatives were contacted through individuals working at the colleges. Then the representatives were briefed and asked to support by collecting the data from their classmates. Once the representatives agreed to distribute and collect the questionnaires from their classmates, the questionnaires were printed out and handed out to all the student representatives of the sample units. While the questionnaires were designed to be self-explanatory, the class representatives received instructions on how to conduct data collection over the phone. After the students completed the questionnaires, the representatives collected them and returned the data to the initial contact persons they had been in touch with.

3.7 Data Analysis

The researcher used the program Statistical Package for the Social Sciences (SPSS) the trial version 29.0 to analyze the data. The quantitative data generated from the sample was analyzed using descriptive statistics which included percentage distribution, mean, median, and standard deviation.

The primary objective of the study was to examine the potential association between aggression and empathy levels and make predictions about this relationship. To this end, the researcher employed Pearson product- moment correlation coefficient. According to Field (2013), Pearson's correlation coefficient is a statistical measure commonly used to assess the strength and direction of the linear relationship between continuous variables.

Additionally, the study aimed to compare the average levels of empathy and aggression among different groups based on college and gender. To analyze the data and achieve this

objective, the study used independent t test. Independent t-test is a statistical method used to compare means across two groups or categories, making it suitable for the study's specific data and goals (Field, 2013).

Before conducting the independent t-test and correlation, the researcher evaluated the sample to verify that all of the assumptions of independent t-test and Pearson's correlation (i.e., independent observations, normally distributed populations, and homogeneous variances) were satisfied. In all cases, the observations were independent as a result of the design of the survey. The researcher calculated skewness and kurtosis statistics to detect violations of the normality assumption. The skewness and kurtosis values for aggression were .394 and -.56 respectively. And the skewness and kurtosis values for empathy were -.58 and 1.137 respectively. These skewness and kurtosis values are within the expected range of chance fluctuations so the normality assumption was satisfied. The final assumption, homogeneity of variance, was determined using Levene's test. The researcher conducted Levene's test at the .05 level with a null hypothesis that the variances were equal. The results from SPSS 29.0 indicated a value above 5 with an associated p-value of 0.27.

3.8 Ethical Considerations

Before participating in the study, the students were required to sign a consent form which was sent along with the questionnaires to their class representatives. Those who agreed to take part in the research signed the form and proceeded to complete the questionnaires. The students who refused to take part in the research were excluded.

Chapter Four

Results and Discussions

The final data was obtained from a total of (N=161) students, with a total response rate of 37.2 %. Response rate of Social Science college was 47.6% (Arts in theatre (n=13), Arts in Music (n=7), Sociology (n=20), & Social work (n=39)) whereas response rate of Natural Science college was 31% (Biomedical Eng. (n=29), Electrical &computing Eng. (n=32), Radiology (n=10), Laboratory (n=12)). This section presents the results of the quantitative data collected from the sample.

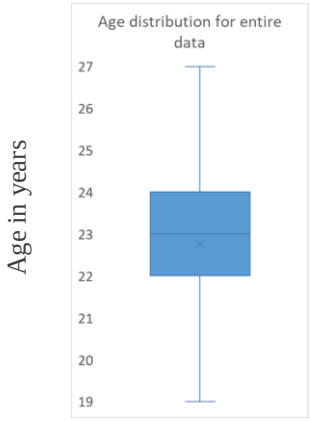
4.1 Results

4.1.1 Socio-demographic Characteristics of Participants

4.1.1.1 Age. The age range of the study participants was 19 to 27 years. The mean age of the participants was 22.7 (SD=1.2). Figure 2 demonstrates the age distribution of the participants. The maxium age is about 27 and the minimum age of the participant is 19 years old. The median age is 23 years whereas the average age of the students is slightly lower than the median age. The age distribution shows no significant outliers.

Figure 2

Participants' Age Distribution

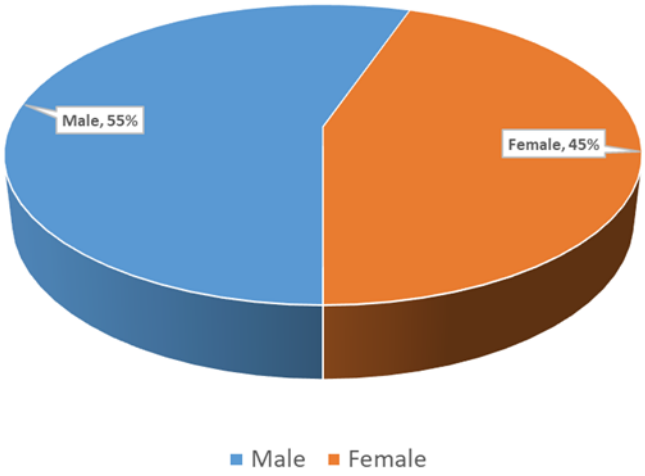


4.1.1.2 Gender. Of the total participants, 45% (72 total, 35 from the Social Science College (Arts in theatre (n=8), Arts in Music (n=1), Sociology (n=8), & Social work (n=16)) and

37 from the Natural Science College (Biomedical Eng. (n=16), Electrical &computing Eng. (n=14), Radiology (n=3), Laboratory (n=4)) were females. And 55% (89 total, 44 from the Social Science College (Arts in theatre (n=5), Arts in Music (n=6), Sociology (n=12), & Social work (n=23) and 45 from the Natural Science College (Biomedical Eng. (n=14), Electrical &computing Eng. (n=19), Radiology (n=7), Laboratory (n=5)) were males. Figure 3 illustrates the overall gender distribution of the participants.

Figure 3

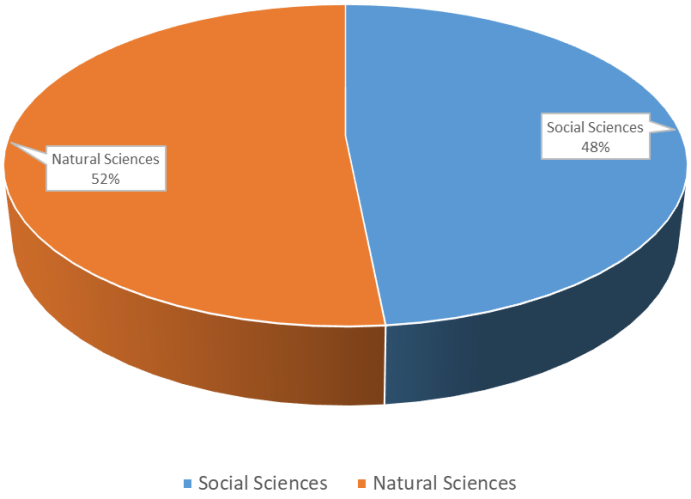
Participants' Gender Distribution



4.1.1.3 Colleges. The participants of the study were recruited from eight departments under Addis Ababa University. The results of the data obtained from the students under 4 departments (Arts in Theatre Arts (n=13), Sociology (n=18), Arts in Music (n=7) & Social work (n=40)) were categorized as Social science college students whereas the other students from four departments (Biomedical Engineering (n=30), Electrical & computer Engineering (n=33), Medical Laboratory Sciences (n=9) & Medical Radiologic Technology (n=11)) were categorized as Natural science college students. Overall, 48% (n=78) social science and 52% (n=83) natural science college students have participated in the study. The total number of students in each college is presented in Figure 4.

Figure 4

Participants' College Distribution

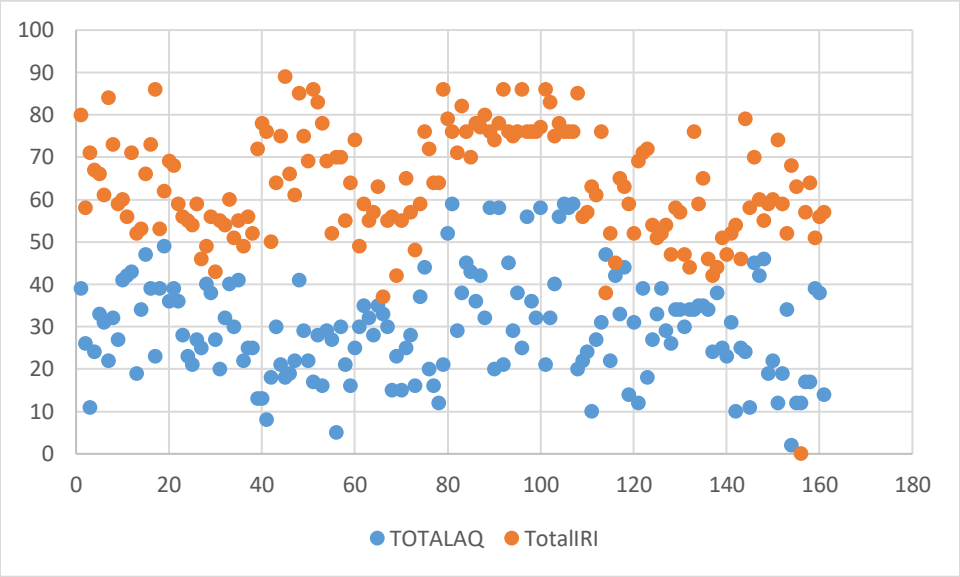


4.1.2 Relationship between Aggression and Empathy

The first specific objective of the study was to determine if there is a linear relationship between aggression and empathy. Pearson's correlation coefficient between aggression and empathy was r = .143, p = .071, indicating insignificant correlation. The distribution of the aggression and empathy scores is illustrated in Figure 5.

Figure 5

Distribution of Aggression and Empathy Scores



Note. TotalAQ= Aggression scores and TotalIRI= Empathy scores

4.1.3 Aggression Levels across Gender

The second research question was to determine if there is a significant difference in Aggression levels across gender. The results showed statistically no significant difference between females and males on aggression levels $p = .236 > 0.05$. Table 4 presents the results from the independent t- test. Moreover, figures 6 and 7 illustrate the distribution of aggression levels in ranges for female and male participants respectively.

Table 4

Means, Standard Deviations, and independent t-test of Aggression among females and males

Measure	Female		Male		t (159)	*Sig.*
	Mean	SD	Mean	SD		
Aggression	31.05	14.49	28	9.73	1.190	.236

Figure 6

Aggression Levels Across Female Students

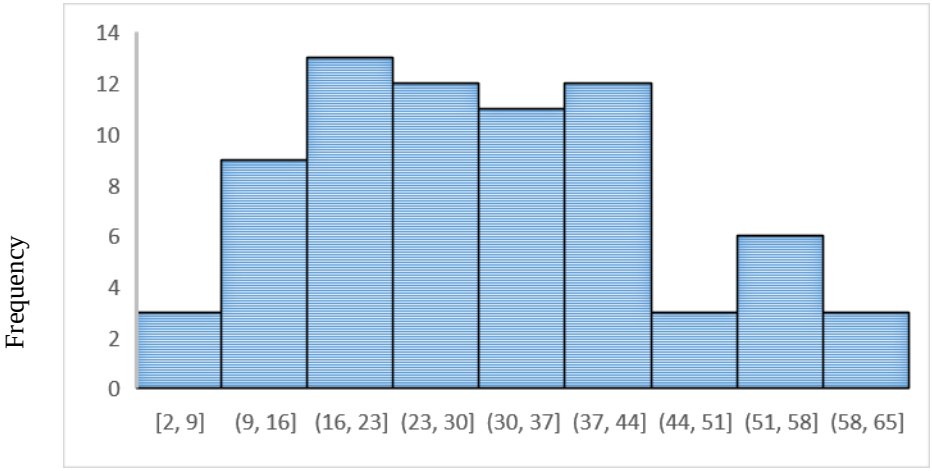
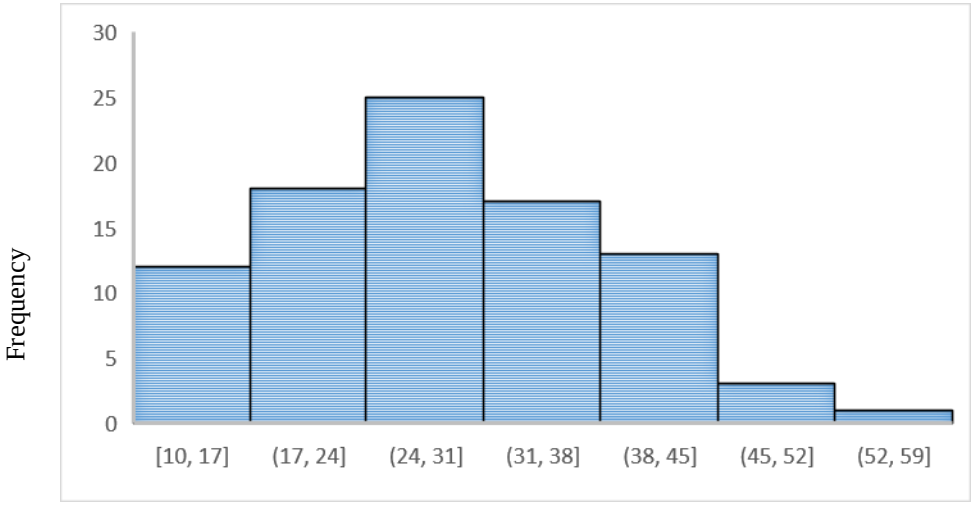


Figure 7

Aggression Levels Across Male Students



4.1.4 Aggression Levels across Colleges

The third specific objective of the study was to determine if there is a significant difference in Aggression levels across social and natural science colleges. The results showed statistically significant difference between the Social Science and Natural Science college students, $p = .015 < 0.05$. Table 5 presents the results of the independent t-test results. Additionally, figures 8 and 9 illustrate the distribution of aggression levels in ranges across Social science and Natural science students respectively.

Table 5

Means, Standard Deviations, and Independent t-test Results of Aggression Levels among Social science and Natural science students

Measure	Social Science		Natural Science		t (159)	*Sig.*
	Mean	SD	Mean	SD		
Aggression	27.41	9.66	32.04	13.70	-2.461	.015

Figure 8

Aggression Levels Across Social science college students

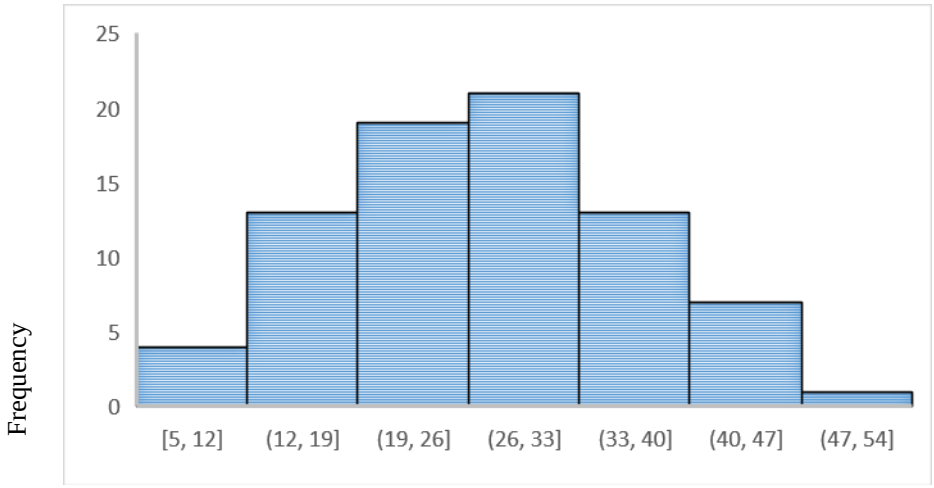
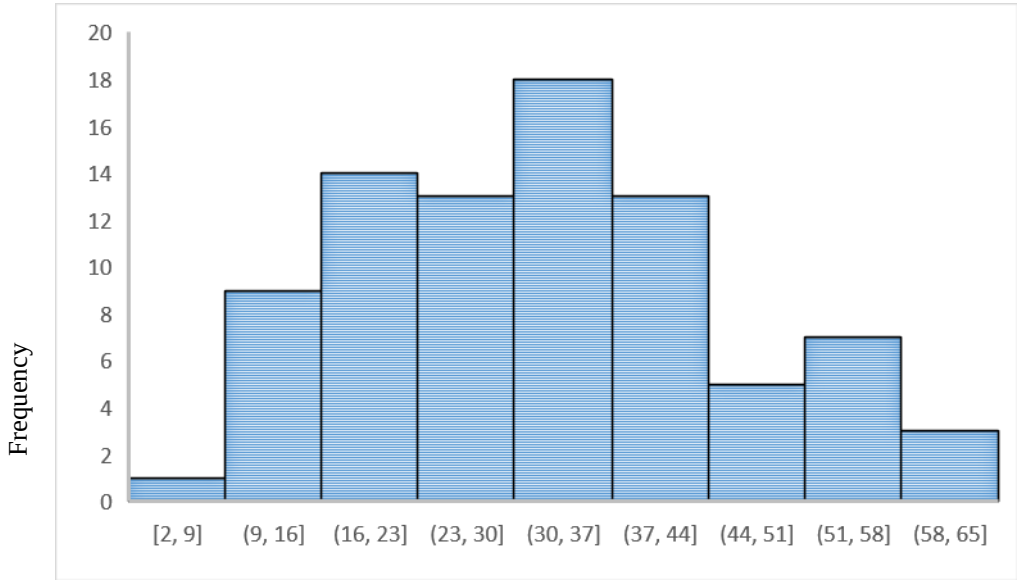


Figure 9

Aggression Levels Across Natural Science college students



4.1.5 Empathy Levels Across Gender

The fourth specific objective of the study was to determine if there is a significant difference in Empathy levels across gender. The results showed no statistically significant difference between females and males on empathy levels $p=.177>.05$. Table 6 presents the independent t-test results. Figures 10 and 11 illustrates the distribution of empathy levels across female and male participants respectively.

Table 6

Means, Standard Deviations, and independent t-test results of Empathy levels among females and males

Measure	Female		Male		t (159)	*Sig.*
	Mean	SD	Mean	SD		
Empathy	65.03	13.70	62.22	12.44	1.357	.177

Figure 10

Empathy Levels Across Female Students

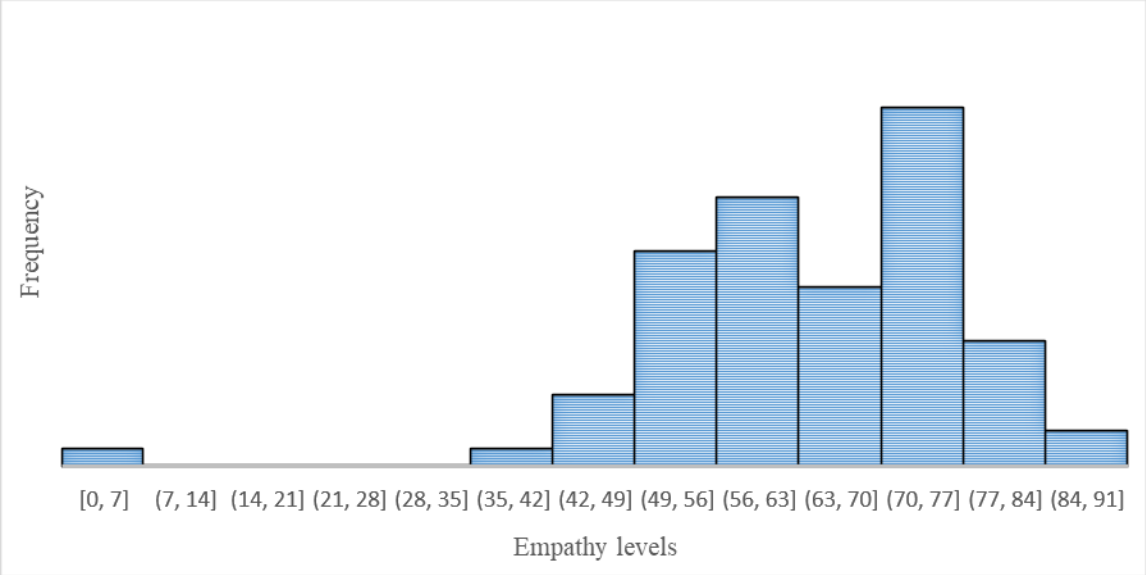
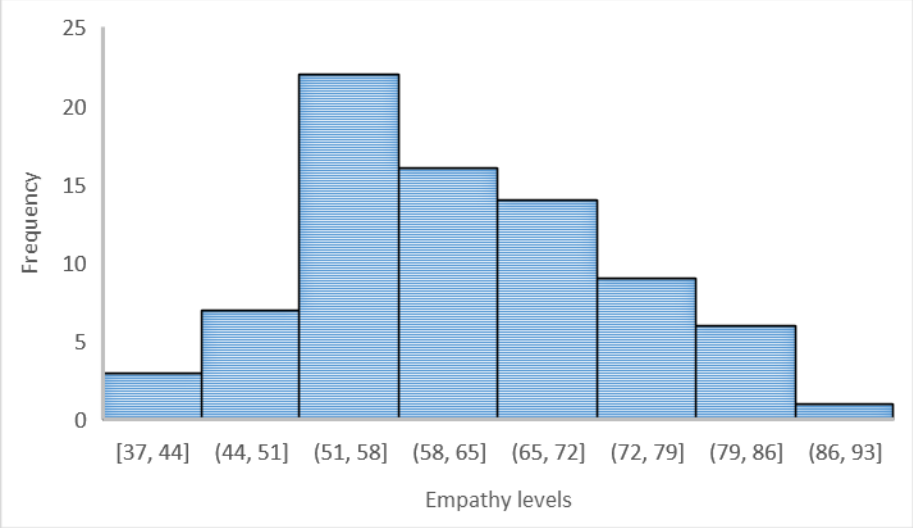


Figure 11

Empathy Levels Across Male Students



4.1.6 Empathy Levels across Colleges

The fifth specific objective of the study was to determine if there is a significant difference in Empathy levels across Social science and Natural science college students. The

results showed no statistically significant difference between Social science and Natural science colleges on empathy levels *p=.468*> .05. Table 7 shows the independent t-test results. Figures 12 and 13 illustrate the distribution of empathy levels across Social science and Natural science college students.

Table 7

Means, Standard Deviations, and independent t-test results of Empathy levels among Social science and Natural science students

Measure	Social Science		Natural Science		t (159)	*Sig.*
	Mean	SD	Mean	SD		
Empathy	62.70	11.32	64.20	14.55	-.727	.468

Figure 12

Empathy Levels Across Social Science Students

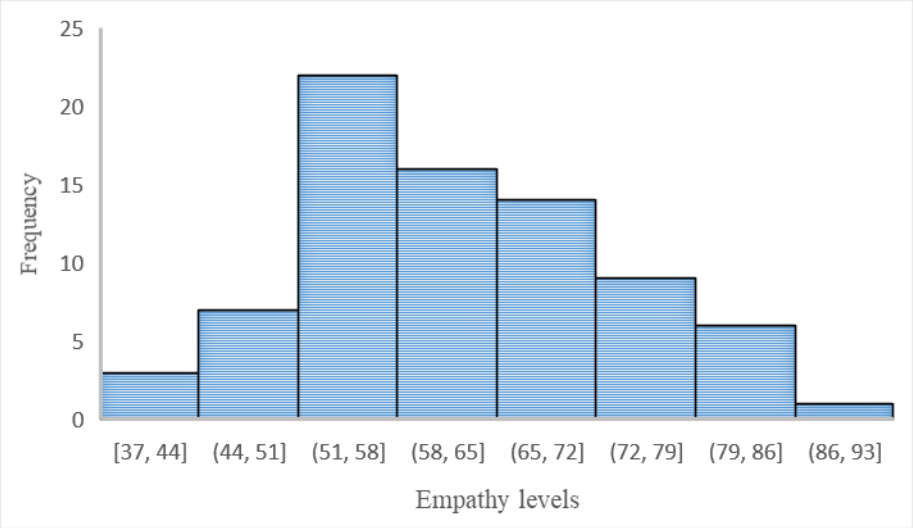
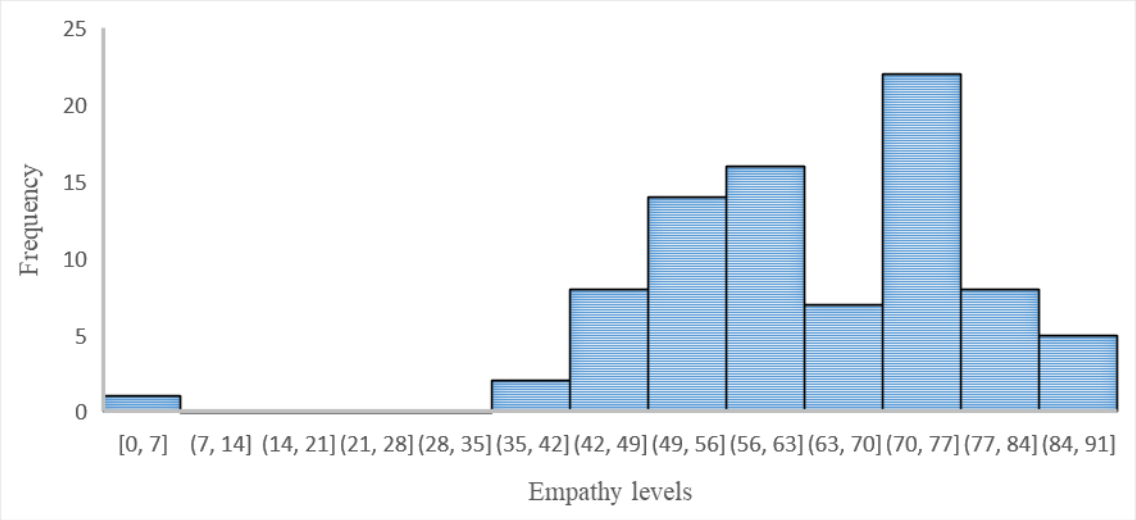


Figure 13

Empathy Levels Across Natural Science Students



4.2 Discussion

The present study examined the relationship between aggression and empathy. Results revealed that there is no significant relationship between aggression and empathy. Second, the study went on to see if there is a difference between aggression levels among female and male undergraduate graduating class students of AAU and found that there both females and males have similar aggression levels. Third, the study set out to see if there is a difference between aggression levels among social science and natural science undergraduate graduating class students of AAU. According to the results, Natural Science college students were found to be more aggressive.

Furthermore, the study aimed to find if there is a difference in empathy levels among female and male undergraduate graduating class students of AAU and found equivalent levels of empathy across gender. Last, the study aimed to see if there's a difference in empathy levels among social science and natural science undergraduate graduating class students of AAU and found that there was no significant difference in empathy levels among the students of the two colleges.

4.2.1 Relationship between Aggression and Empathy

The current study found statistically insignificant relationship between aggression and empathy contrary to the widely held belief that a number of studies supported. A considerable amount of studies found the relationship between aggression and empathy to be inverse (eg. Jolliffe & Farrington, 2004; Miller & Eisenberg, 1988). Although the majority of the literature on the subject supports the fact that aggression and empathy are inversely related, Dryburgh and Vachon, (2019) stated that the generalizability of this effect is thus far unknown. A few other studies also found a very weak to no relationship between aggression and empathy in line with the current findings (eg. Lindsey et al., 2001; Lovett and Sheffield, 2007; Goldstein & Higgins-D'Alessandro, 2001; Vachon, et.al, 2014). Overall, the studies suggest that low empathy may play a role in aggression among youths, but the relationship is complex and may depend on various factors such as culture, age, and context.

The fact that aggression can be influenced by various factors, such as cultural, biological, social, situational, and psychological factors may be the reason for results showing weak to no relationship. While empathy is one of the psychological factors that can impact aggression, it is not the sole determinant (Hyde, 2005). Other factors, such as impulsivity, frustration, and social learning, can also play significant roles in aggression (Miller et al., 1941). This suggests that empathy alone may not have a strong relationship with aggression.

4.2.2 Aggression Levels among Female and Male Students

According to the results of this study, females and males showed no significant difference in aggression levels. A meta-analysis study concluded that aggression levels were similar for males and females across different contexts (Archer, 2004) supporting the current studies' findings. Another meta-analysis (Bettencourt & Miller, 1996) examined studies on aggression and found that, when provoked, both males and females exhibited similar levels of aggression backing up the current findings.

This may be due to the fact that Aggression can be driven by a range of psychological factors such as frustration, impulsivity, or perceived threat. These factors are not inherently gender-specific and can affect individuals regardless of their gender (Miller et al., 1941). Since

the participants of the study are graduating class students in their last semester, having the same frustration and triggering effects (stress) may have formed the same aggression levels.

Another justification may be the fact that societal roles and expectations have evolved to be somehow similar for both females and males (Williams & Ceci, 2015). In this case, these students are graduating from the same university, have the same chance of employability, and earning similar wages may decrease gender differences in aggression. This may have led to more similar levels of aggression between males and females.

4.2.3 Aggression Levels among Social Science and Natural Science College Students

The results of the study showed higher aggression levels in Natural Science college students compared to Social Science college students. This finding is in line with different studies done similarly. For instance, a study comparing students of Computer Science, Journalism & Mass Communication and Tour & Travel Management of Dev Sanskriti University in India, concluded that the mean score of aggression of science students is more than the Journalism & Mass Communication and Tour & Travel Management students (Tripathy, 2018). Another study done to compare aggression levels between the students of science, physical education and commerce, of Post Graduate Government College, in India found mean score of aggression of science students to be more than the physical education and commerce students (Bisht & Mishra, 2015).

4.2.4 Empathy Levels among Female and Male Students

Female and male students scored equivalent empathy levels in the current study perplexing the view that ponders empathy to be gender-based (Shields, 1995) which necessitates the assumption that women are more emotional and more caring than males (Zahn-Waxler et al., 1991). Although the vast majority of the literature is in favor of women having more empathy than men, some studies found similar associations for men and women between empathy and antisocial behavior (e.g., Miller et al., 2011). Moreover, some authors suggest that observed gender differences might be largely due to cultural expectations about gender roles (eg. Christov-Moore et al., 2014) instead of actual differences. Greitemeyer and Loffler (2021), supplemented this fact by suggesting empathy to be influenced by the environment and can be systematically skewed by gender stereotypes and preconceived notions. Rueckert et al. (2011), proposed the

differences in the general emotional responses between males and females may be the reason females obtain consistently higher empathy scores.

4.2.5 Empathy Levels among Social Science and Natural Science College Students

Students in social science and natural science colleges scored similar empathy levels. There is contradicting evidence of empathy level differences between disciplines in higher educational institutions. In one way, a study based on the ASA model found that business students reported lower levels of empathy than psychology students supporting the model (Litten et al., 2018). Another study found no difference in empathy levels in performing arts students and non-performing arts students (Tandon, 2017). The findings of the current study align with the latter study.

On top of the major objectives, this study aimed to provide insights whether specific college curricula incorporate materials that foster the growth of empathy, as evidenced through measurable outcomes. To accomplish this, the researcher selected students from graduating classes, assuming that those who had spent more time in the curriculum would exhibit greater progress in developing empathy. However, the findings revealed that while these colleges may have included materials that promote empathy, the observed impact on the participants was not substantial enough to be visibly noticeable.

Chapter Six

Conclusion

The current study measured the aggression and empathy levels of social and natural college graduating class students of Addis Ababa University. The study aimed to see if there's a relationship between aggression and empathy, compare the levels of aggression and empathy among the students in the two colleges, and compare the levels of empathy and aggression between females and males. The results found no relationship between aggression and empathy. The results showed similar aggression levels in females and males. Natural Science college students showed higher levels of aggression. No difference between social science and natural science students in the level of empathy was observed. There was also no difference in empathy between females and males.

The results of the current study are aligned with the few studies that are at variance with the majority of the existing body of literature on the subject. This strengthens the fact that empathy is a relatively understudied subject and that further studies must be done to understand the concept more. Moreover, the relationship between aggression and empathy must be thoroughly examined. Studying the relationship across the components of both aggression and empathy this study lacks may have repercussions for the subject. Studying a larger population would also lower the risks of getting similar results caused by shared traits among the study samples.

In a world where societal and individual disintegrations caused by aggression, conflict, and war prevails, the possible relationship between aggression and empathy will have deep-rooted implications in improving the well-being of the human species. Specifically, in Ethiopia where extreme aggression is being displayed widely; it is incumbent to find immediate solution. Replication of this study in a broader population will either strengthen the fact that empathy inhibits aggression or provide insights on how to approach the matter differently.

Limitations of the Study

When categorizing the colleges as social science and natural science, the researcher made an assumption that all natural science colleges primarily concentrate on disciplines related to the physical and natural world, while social science colleges focus on studying human society, behavior, and relationships. The sampling process employed simple random sampling, which resulted in the inclusion of the health science college to represent the natural science college. Despite health science being classified under the natural science category, it is highly possible that students who chose to join this college may possess inherent inclinations to work with people. This may have potentially produced biased results. Moreover, University placement isn't mostly done per students' choices and attrition (dropping out of college) is risky considering the economic status of the country.

The research involved selecting students of the graduating class to assess the highest potential impact of each college's curriculum on the development of empathy in students. The data collection took place during a time when students were experiencing high levels of stress due to upcoming exams and final assignments to submit. It is worth considering that this circumstance might have influenced how the students responded to the questionnaires. Furthermore, the study used a cross sectional study preventing a cause-and-effect conclusion.

Results from the aggression and empathy measures were taken as wholes rather than breaking them into components. Both aggression and empathy have aggregate components that make them up. The results of the questionnaires provide measurement of the components as well as the wholes. This study used the results as wholes to fulfill the purpose of the study. The results from each component would have given a broader understanding on the concepts.

Recommendations

The current study set out to see if there's a relationship between aggression and empathy in graduating class students of AAU. It also set out to determine if there are statistically significant differences in aggression and empathy levels between female and male students, and Social science and Natural science students of AAU. Based on the findings and limitations of the study, the following recommendations are forwarded for possible future endeavors related to the current study.

- Conduct further investigation of the relationship between aggression and empathy on a larger sample size of different population from the current study.
- Conduct a replication study to validate the results of this study and further establish the generalizability of the findings.
- Expand upon the limitations of this study by addressing potential confounding variables and conducting further analyses to control them. Examples of these confounding variables maybe, cultural dispositions, context, and age.
- Investigate the outcomes of the aggression and empathy tests by separating the outcomes from the components that make up the tests.

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Appendices

A. Individual item Content Validity Rate (CVR) results of the Aggression Questionnaire AQ

Item no.	Item content	No. of experts with at least moderate response	Lawshe's CVR value
3	በሁኔታዎች ስናደድ አጠገቤ ያለ ነገር እሰብራለሁ።	4	+1
7	ሰዎች ሲያበሳጩኝ ልክ ልካቸውን መንገር የተለመደ ባህሪዬ ነው።	4	+1
9	በሰዎች ስናደድ ያናደዱኝን ለመምታት እጋበዛለሁ።	4	+1
11	ለድብድብ ቅርብ ሰው ነኝ።	4	+1
13	ስናደድ ንዴቴን መቆጣጠር ይከብደኛል።	4	+1
14	አንዳንድ ጊዜ ውስጤ ሊፈነዳ የሚመስል ነገር ያለ ይመስለኛል።	4	+1
15	አንዴ ከተናደድኩ ለመረጋጋት ጊዜ ይወስድብኛል (በዛ ስሜት ውስጥ እቆያለሁ)፡፡	4	+1
17	ያናደዱኝን ሰዎች በሹፈት ብቻ ልባቸውን መስበር እችልበታለሁ።	4	+1
2	በመብቴ የሚመጣን ማንኛዉም ሰው ልክ አስገባዋለሁ።	3	0.5
4	መገፋቴን በእጥፍ የምመልስ ሰው ነኝ።	3	0.5
5	በተደጋጋሚ ራሴን ከሰዎች ጋር በንግግር አለመግባባት ውስጥ ገብቼ አገኘዋለሀ።	3	0.5
8	በንግግር መሀል ሰዎች ሲቃወሙኝ ንትርክ ውስጥ መግባት አልወድም።	3	0.5

10	አካላዊ ትንኮሳን መቋቋም እችላለሁ።	3	0.5
12	አንድን ሰው ለመምታት የሚያደርስ በቂ ምክንያት ይኖራል ብዬ አላምንም።	3	0.5
18	ማህበራዊ ገጾች ላይ የማይመስል ነገር ለሚያዎሩ ሰዎች ማንነቴን ሳልገልጽ መልስ መስጠት እችልበታለሁ።	3	0.5
19	የምፈልገውን ለማግኘት ኩርፊያን እንደ መሳሪያ እጠቀምበታለሁ።	3	0.5
20	የፈለኩትን ነገር ለማግኘት ስል፤ በውሸት ስም አጥፍቼ አውቃለሁ።	3	0.5
6	በማህበራዊ ግንኙነቴ በቅርብ የሚያዉቁኝ ሰዎች ጠበኛ እንደሆንኩ ይነግሩኛል።	2	0
16	ጉዋደኞቼ ቶሎ ቱግ ትላለህ/ትያለሽ ይሉኛል።	2	0
1	በፍቅር ግንኙነት ሀይልን ተጠቅሜም ቢሆን የፈለኩትን (ወንድ/ሴት) በጄ ማስገባት እንዲሁም የምፈልገውን ማግኘት ለኔ በቀላሉ የማደርገው ነው።	0	-1

B. Individual item reliability results of the Aggression Questionnaire (AQ)

Correlations

		Item1	Item2	Item3	Item4	Item5	Item6	Item7	Item8	Item9	Item10	Item11	Item12	Item13	Item14	Item15	Item16	Item17	Item18	Item19	Item20
Item1	Pearson Correlation	1	.274	.352*	.256	.068	.312*	.125	.040	.392**	.204	.125	-.011	.142	.202	.182	-.029	.373*	-.005	.232	.137
	Sig. (2-tailed)		.065	.016	.086	.652	.035	.408	.793	.007	.174	.409	.942	.347	.177	.225	.849	.011	.975	.121	.362
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item2	Pearson Correlation	.274	1	.274	.637**	.212	.111	.278	-.241	.204	-.087	.121	.333*	.326*	.348*	.252	-.039	.224	.188	.444**	.284
	Sig. (2-tailed)	.065		.065	<.001	.158	.461	.061	.106	.173	.567	.422	.024	.027	.018	.092	.799	.134	.211	.002	.056
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item3	Pearson Correlation	.352*	.274	1	.315*	.253	.359*	.129	-.246	.539**	.020	.295*	.208	.464**	.456**	.400**	.157	.081	.135	.197	.009
	Sig. (2-tailed)	.016	.065		.033	.090	.014	.394	.100	<.001	.895	.046	.166	.001	.001	.006	.299	.591	.371	.190	.954
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item4	Pearson Correlation	.256	.637**	.315*	1	.232	.191	.455**	-.495**	.384**	-.200	.101	.246	.393**	.411**	.371*	.107	.214	.232	.269	.271
	Sig. (2-tailed)	.086	<.001	.033		.121	.204	.001	<.001	.008	.184	.503	.099	.007	.005	.011	.478	.154	.121	.071	.068
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item5	Pearson Correlation	.068	.212	.253	.232	1	.643**	.329*	-.091	.348*	.136	.625**	.258	.342*	.439**	.441**	.627**	-.059	.146	.177	.215
	Sig. (2-tailed)	.652	.158	.090	.121		<.001	.026	.546	.018	.368	<.001	.083	.020	.002	.002	<.001	.698	.333	.239	.151
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item6	Pearson Correlation	.312*	.111	.359*	.191	.643**	1	.258	.074	.542**	.343*	.743**	-.022	.296*	.293*	.428**	.544**	-.042	.214	.297*	.375*
	Sig. (2-tailed)	.035	.461	.014	.204	<.001		.083	.627	<.001	.020	<.001	.887	.046	.048	.003	<.001	.783	.154	.045	.010
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item7	Pearson Correlation	.125	.278	.129	.455**	.329*	.258	1	-.276	.420**	.088	.440**	.328*	.514**	.307*	.393**	.338*	.055	.098	.200	.134
	Sig. (2-tailed)	.408	.061	.394	.001	.026	.083		.063	.004	.560	.002	.026	<.001	.038	.007	.021	.714	.519	.183	.376
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item8	Pearson Correlation	.040	-.241	-.246	-.495**	-.091	.074	-.276	1	-.194	.341*	.015	-.122	-.339*	-.307*	-.281	.011	-.001	-.236	-.097	-.056

	Sig. (2-tailed)	.793	.106	.100	<.001	.546	.627	.063		.198	.020	.923	.419	.021	.038	.058	.940	.996	.114	.520	.713
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item9	Pearson Correlation	.392**	.204	.539**	.384**	.348*	.542**	.420**	-.194	1	.149	.548**	.279	.602**	.430**	.590**	.284	-.062	-.039	.201	.169
	Sig. (2-tailed)	.007	.173	<.001	.008	.018	<.001	.004	.198		.323	<.001	.060	<.001	.003	<.001	.056	.680	.795	.181	.261
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item10	Pearson Correlation	.204	-.087	.020	-.200	.136	.343*	.088	.341*	.149	1	.355*	.101	.129	-.182	-.107	.303*	-.307*	-.259	.074	.036
	Sig. (2-tailed)	.174	.567	.895	.184	.368	.020	.560	.020	.323		.016	.505	.393	.227	.479	.041	.038	.082	.625	.812
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item11	Pearson Correlation	.125	.121	.295*	.101	.625**	.743**	.440**	.015	.548**	.355*	1	.055	.430**	.182	.540**	.565**	-.266	.167	.425**	.106
	Sig. (2-tailed)	.409	.422	.046	.503	<.001	<.001	.002	.923	<.001	.016		.719	.003	.225	<.001	<.001	.074	.267	.003	.485
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item12	Pearson Correlation	-.011	.333*	.208	.246	.258	-.022	.328*	-.122	.279	.101	.055	1	.317*	.346*	.239	.049	.024	.032	-.073	.026
	Sig. (2-tailed)	.942	.024	.166	.099	.083	.887	.026	.419	.060	.505	.719		.032	.019	.110	.748	.874	.833	.632	.863
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item13	Pearson Correlation	.142	.326*	.464**	.393**	.342*	.296*	.514**	-.339*	.602**	.129	.430**	.317*	1	.308*	.351*	.338*	-.154	-.162	.268	.179
	Sig. (2-tailed)	.347	.027	.001	.007	.020	.046	<.001	.021	<.001	.393	.003	.032		.037	.017	.021	.306	.282	.072	.234
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item14	Pearson Correlation	.202	.348*	.456**	.411**	.439**	.293*	.307*	-.307*	.430**	-.182	.182	.346*	.308*	1	.506**	.253	.039	.153	.008	.072
	Sig. (2-tailed)	.177	.018	.001	.005	.002	.048	.038	.038	.003	.227	.225	.019	.037		<.001	.090	.797	.309	.958	.635
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item15	Pearson Correlation	.182	.252	.400**	.371*	.441**	.428**	.393**	-.281	.590**	-.107	.540**	.239	.351*	.506**	1	.266	.012	.213	.352*	.007
	Sig. (2-tailed)	.225	.092	.006	.011	.002	.003	.007	.058	<.001	.479	<.001	.110	.017	<.001		.074	.936	.155	.016	.963
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item16	Pearson Correlation	-.029	-.039	.157	.107	.627**	.544**	.338*	.011	.284	.303*	.565**	.049	.338*	.253	.266	1	-.338*	-.012	.059	.214
	Sig. (2-tailed)	.849	.799	.299	.478	<.001	<.001	.021	.940	.056	.041	<.001	.748	.021	.090	.074		.022	.937	.698	.154

	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item17	Pearson Correlation	.373*	.224	.081	.214	-.059	-.042	.055	-.001	-.062	-.307*	-.266	.024	-.154	.039	.012	-.338*	1	.280	.010	.168
	Sig. (2-tailed)	.011	.134	.591	.154	.698	.783	.714	.996	.680	.038	.074	.874	.306	.797	.936	.022		.060	.949	.265
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item18	Pearson Correlation	-.005	.188	.135	.232	.146	.214	.098	-.236	-.039	-.259	.167	.032	-.162	.153	.213	-.012	.280	1	.101	.011
	Sig. (2-tailed)	.975	.211	.371	.121	.333	.154	.519	.114	.795	.082	.267	.833	.282	.309	.155	.937	.060		.506	.940
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item19	Pearson Correlation	.232	.444**	.197	.269	.177	.297*	.200	-.097	.201	.074	.425**	-.073	.268	.008	.352*	.059	.010	.101	1	-.022
	Sig. (2-tailed)	.121	.002	.190	.071	.239	.045	.183	.520	.181	.625	.003	.632	.072	.958	.016	.698	.949	.506		.883
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
Item20	Pearson Correlation	.137	.284	.009	.271	.215	.375*	.134	-.056	.169	.036	.106	.026	.179	.072	.007	.214	.168	.011	-.022	1
	Sig. (2-tailed)	.362	.056	.954	.068	.151	.010	.376	.713	.261	.812	.485	.863	.234	.635	.963	.154	.265	.940	.883	
	N	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46

*. Correlation is significant at the 0.05 level (2-tailed).

C. The Aggression Questionnaire (AQ)

ዳራ መረጃ (Background information)

የትምህርት ክፍል (Department):

የመጀመሪያ የትምህርት ክፍል ምርጫ፡

ዕድሜ:

ጾታ:

የትውልድ ዘመን፡

አንድ ሰዉ በእርስ በእርስ ግንኙነት ውስጥ ለሚከሰቱ ሁኔታዎች የሚኖረውን ምላሽ መመዘኛ ቅጽ

ዐላማ

የሚከተሉት ዓረፍተ-ነገሮች ዓላማ አንተ/አንቺ በተለያዩ ሁኔታዎች ውስጥ የሚኖሩህን/ሽን ሃሳቦች እና ስሜቶች መለየት ነው።

መመሪያ

በገፁ መጀመሪያ ላይ ምላሾችህን/ሽን መመዘኛ የሚሆኑ መስፈሪያዎች ከ0 እስከ 4 ተሰጥተዋል። እያንዳንዱ አሀዝ ምን ማለት እንደሆነ ቀጥሎ ተብራርቷል። የተሰጡትን ዓረፍተ-ነገሮች እያነበብህ/ሽ እያንዳንዱ ዓረፍተ-ነገር አንተን/ችን ምን ያህል እንደሚገልፅህ/ሽ ከ 0፣ 1፣ 2፣ 3፣ ወይም 4 አንዱን በመምረጥ ምላሽ ስጥ/ጪ። ምላሽህን/ሽን ከወሰንህ/ሽ በኋላ፣ ከዓረፍተ-ነገሩ ፊት-ለፊት ላይ ከተሰጡት አማራጮች የመረጥከው/ሽው አሀዝ ስር ምልክት አርግ/ጊ። (ለምሳሌ፣ 0ን መረጥህ/ሽ ማለት፣ ዓረፍተ-ነገሩ እኔን በፍጹ አይገልፀኝም፤ ማለት ሲሆን፣ 4ን መረጥህ/ሽ ማለት ደግሞ ዓረፍተ-ነገሩ እጅግ በጣም ይገልፀኛል ማለት ነው።) ምላሽህን/ሽን ከመስጠትህ/ሽ በፊት ዓረፍተ-ነገሩን ደጋግመህ/ሽ በማንበብ በደንብ እንደተረዳኸው/ሽው እርግጠኛ ሁን/ኚ። በቻልከው/ሽው መጠን እውነተኛ የሆነ ምላሽ ስጥ/ጪ። በጣም አመሰግናለሁ።

ጥያቄዎች	አማራጭ መልሶች				
	በፍጹም እንዲህ አይነት ባህሪ የለኝም= 0	በጥቂቱ ይህ ባህሪ አለኝ= 1	አልፎ አልፎ ያለኝ ባህሪ ነው= 2	ብዙ ጊዜ ያለኝ ባህሪ ነው = 3	ሙሉ በሙሉ የኔ ባህሪ ነው= 4
1. በፍቅር ግንኙነት ማድረግ ያለብኝን ማንኛዉንም ነገር አድርጌም ቢሆን የፈለኩትን (ወንድ/ሴት) በጄ ማስገባት እንዲሁም የምፈልገውን ማግኘት ለኔ በቀላሉ የማደርገው ነው።					
2. በመብቴ የሚመጣን ማንኛዉም ሰው ልክ አስገባዋለሁ።					
3. በሁኔታዎች ስናደድ አጠገቤ ያለ ነገር እሰብራለሁ።					
4. መገፋቴን በእጥፍ የምመልስ ሰው ነኝ።					
5. በተደጋጋሚ ራሴን ከሰዎች ጋር አለመግባባት ውስጥ ገብቼ አገኘዋለሁ።					
6. በማህበራዊ ግንኙነቴ በቅርብ የሚያዉቁኝ ሰዎች ጠበኛ እንደሆንኩ ይነግሩኛል።					
7. ሰዎች ሲያበሳጩኝ ልክ ልካቸውን መንገር የተለመደ ባህሪዬ ነው።					
8. በንግግር መሀል ሰዎች ሲቃወሙኝ ክርክር ውስጥ መግባት አልወድም።					
9. በሰዎች ስናደድ ያናደዱኝን ለመምታት እጋበዛለሁ።					
10. ትንኮሳን መቋቋም እችላለሁ።					
11. ለጠብ ቅረብ ሰው ነኝ።					
12. አንድን ሰው ለመምታት የሚያደርስ በቂ ምክንያት ይኖራል ብዬ አላምንም።					

13. ስናደድ ንዴቴን መቆጣጠር ይከብደኛል።					
14. አንዳንድ ጊዜ ውስጤ ሊፈነዳ የሚመስል ነገር ያለ ይመስለኛል።					
15. አንዴ ከተናደድኩ ለመረጋጋት ጊዜ ይወስድብኛል (በዛ ስሜት ውስጥ እቆያለሁ)፡፡					
16. ጉዋደኞቼ ቶሎ ቱግ ትላለህ/ትያለሽ ይሉኛል።					
17. ያናደዱኝን ሰዎች በሹፈት ብቻ ልባቸውን መስበር እችልበታለሁ።					
18. ማህበራዊ ገጾች ላይ የማይመስል ነገር ለሚያዎሩ ሰዎች ማንነቴን ሳልገልጽ መልስ መስጠት እችልበታለሁ።					
19. የምፈልገውን ለማግኘት ኩርፊያን እንደ መሳሪያ እጠቀምበታለሁ።					
20. የፈለኩትን ነገር ለማግኘት ስል፤ በውሸት ስም አጥፍቼ አውቃለሁ።					

D. The Interpersonal Reactivity Index (IRI)

INTERPERSONAL REACTIVITY INDEX

Background information

Department: Age: Gender: Date of birth:

Purpose

The purpose of the following statements is to identify your thoughts and feelings in a variety of situations.

Instruction

For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

A = 0 (Does not Describe me well)

B = 1 (Describes me slightly)

C = 2 (Describes me moderately)

D= 3 (Describes me well)

E = 4 (Describes me very well)

1. I Daydream and fantasize, with some regularity, about things that might happen to me.
2. I often have tender, concerned feelings for people less fortunate than me.
3. I sometimes find it difficult to see things from the "other guy's" point of view.
4. Sometimes I don't feel very sorry for other people when they are having problems.
5. I really get involved with the feelings of the characters in a novel.
6. In emergency situations, I feel apprehensive and ill-at-ease.
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.
8. I try to look at everybody's side of a disagreement before I make a decision.
9. When I see someone being taken advantage of, I feel kind of protective towards them.
10. I sometimes feel helpless when I am in the middle of a very emotional situation.

11. I sometimes try to understand my friends better by imagining how things look from their perspective.

12. Becoming extremely involved in a good book or movie is somewhat rare for me.

13. When I see someone get hurt, I tend to remain calm.

14. Other people's misfortunes do not usually disturb me a great deal.

15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

16. After seeing a play or movie, I have felt as though I were one of the characters.

17. Being in a tense emotional situation scares me.

18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

19. I am usually pretty effective in dealing with emergencies.

20. I am often quite touched by things that I see happen.

21. I believe that there are two sides to every question and try to look at them both.

22. I would describe myself as a pretty soft-hearted person.

23. When I watch a good movie, I can very easily put myself in the place of a leading character.

24. I tend to lose control during emergencies.

25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

27. When I see someone who badly needs help in an emergency, I go to pieces.

28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

E. Consent form

Consent Form

Dear Research Participants,

I, Hiwot Gebremedhin, a graduate student in the School of Psychology (College of Education and Behavioral Studies) am carrying out research entitled "Aggression and empathy among graduating class students of social science and natural science colleges of Addis Ababa University". I am using two questionnaires as data collection tools. The questionnaires contain some questions that would require you to provide personal information and information about your thoughts and feelings in a variety of situations.

Your participation in this research is fully voluntary and your anonymity and confidentiality are guaranteed. The information will be accessed only by the researcher and there is no way of disclosing information to a third party. No harm or disadvantage will be caused by participating or not participating in this survey. You are asked to participate if you are completely comfortable and you do not feel obliged to participate. If you wish to withdraw at any time, you are free to do so. I hope that this helps you feel comfortable participating and answer each question honestly.

If you agree to participate, please sign below. I thank you for agreeing to participate!

If you have any questions, please contact me through the following email.

hiwi.geo@gmail.com

By signing below, I _____ agree to take part in a research study entitled "Empathy and aggression among graduating class students of social Science and natural Science colleges of Addis Ababa University".

I declare that:

- My participation in this study is voluntary and I have not been pressurized to participate.
- I may choose to withdraw from the study at any time, and will not be penalized or subjected to prejudice in any way.

_____ _____

Signature of Respondent Date