

Empathy and Disgust as Predictors of Attitude towards Homosexuals

A thesis submitted in the partial fulfillment of the requirement for the degree of
MASTER OF ARTS IN PSYCHOLOGY

SUBMITTED BY

Malvika Lakhanpal (862102010)

Under the supervision and guidance of

Dr. Ipshita Chowdhury



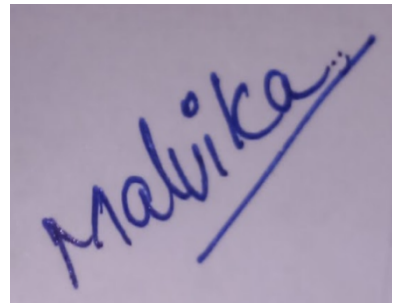
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Thapar School of Liberal Arts & Science

Thapar Institute of Engineering and Technology, Patiala

CERTIFICATE

This is to certify that the thesis entitled, Empathy and Disgust as predictors of attitude toward homosexuals being submitted in partial fulfillment of requirements for the award of the degree of Master of Arts in Psychology, presented in the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala is a bonafide work carried out under the supervision of Dr. Ipshita Chowdhury, Assistant Professor, Thapar School of Liberal Arts & Sciences (TSLAS), Thapar Institute of Engineering and Technology, Patiala and that no part of this project has been submitted for the award of any other degree.



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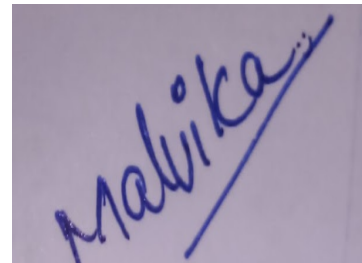
(Dr. IPSHITA CHOWDHURY)
Assistant Professor,
TSLAS Thapar Institute of Engineering and Technology, Patiala

CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, 'Empathy and disgust as predictors of attitude towards homosexuals' submitted in partial fulfillment of requirements for the award of the degree of Master of Arts in Psychology, presented in the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala, is an authentic record of my work carried out under the supervision and guidance of Dr. Ipshita Chowdhury, Assistant Professor, Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala and refers other researchers' work which are duly listed in the reference section.

The matter embodied in this thesis has not formed the basis for awarding any other degree at this or any other university.

Date: May, 2023

A rectangular box containing a handwritten signature in blue ink that reads "Malvika".

(Malvika Lakhanpal)

This is to certify that the above statements made by the student concerned are correct and true to the best of my knowledge.

A handwritten signature in black ink, appearing to be "Ipsita", with a horizontal line underneath.

(Dr. IPSHITA CHOWDHURY)

Assistant Professor, TSLAS

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ABSTRACT

The aim of the study was to explore the role of empathy and disgust in predicting attitude towards homosexuals. Works of (Herek, 2000) and (Pettigrew, 2006) suggest attitude towards homosexuals is predicted by a range of factors such as personal beliefs, contact with LGBTQ+. Disgust Sensitivity is prominently used in other studies (Tybur, 2009) and (Inbar, 2009) to predict attitude. A novel addition to this framework is empathy's role in predicting attitude towards homosexuals. Two studies were conducted to explore this relationship. First study used a correlational study to determine empathy and disgust of heterosexuals to predict attitude towards homosexuals. Furthermore, differences in empathy, disgust and attitude were seen across young adults (age range) and older adults (age range). The second study exposed participants to images of gays and queer (LBT) sharing a range of intimate moments. This was also done in two stages i.e., young and old. Empathy, attitude and disgust showed differences across gays and LBT in older adults and younger adults. These results shed light in a complex interplay between disgust and empathy in predicting attitude towards outgroup members. Additionally, this study has implications in stigma prevention by designing effective intervention programs.

Keywords: Empathy, Disgust, Attitude, Homosexuals, Heterosexuals

CHAPTER 1: INTRODUCTION

1.1 Empathy

The Greek word "empathy," which means to feel another person's reactions and enter their world, is where the word "empathy" comes from (Campbell and Babrow, 2004). According to Empathy Altruism Hypothesis by Daniel Batson, empathy can lead to altruistic behavior, in which people are motivated to help others purely for their benefit, even if it comes at a personal cost. To support his theory, Batson conducted several experiments, including the "empathy manipulation studies," in which he investigated the relationship between empathy and helping behavior (Batson et al., 1981; Batson, 1991). The significance of empathy in human life stems from its ability to influence people's behavior. People with varying levels of empathy exhibit a variety of behavioral patterns (Topcu et al., 2010). Empathy is the ability to enter another person's world, as well as the ability to see underlying connections. (Ivey, Ivey, & Morgan, 1997; Bal & Bilge, 2016).

Empathy is important in a variety of contexts. Here is a brief account of its significance. Empathy is essential for developing and sustaining healthy interpersonal relationships. It allows people to understand and share the emotions of others, which promotes emotional connection, trust, and intimacy. According to Davis (1994), empathy promotes effective communication, conflict resolution, and overall relationship satisfaction. In addressing social inequalities and promoting social justice, empathy is critical. Individuals can develop a sense of empathy that drives them to advocate for fairness, equality, and inclusivity by understanding and acknowledging the experiences and perspectives of marginalized groups. Empathy can promote understanding among different social groups, facilitate dialogue, and help to create more equitable societies (Zaki, 2019). Empathy is critical in promoting emotional well-being in individuals and communities. Individuals

who receive empathy from others feel heard, validated, and understood, which can improve their mental health and overall well-being. Furthermore, expressing empathy for others can improve one's emotional resilience and satisfaction (Decety et al., 2016). Empathy is critical in promoting acceptance and inclusivity for people who identify as homosexual. Society can gain a better understanding and appreciation for LGBTQ+ people's perspectives by empathizing with their unique experiences, challenges, and discrimination. Empathy aids in breaking stereotypes, reducing prejudice, and creating a more supportive and affirming environment for the LGBTQ+ community (Herek, 2009).

Empathy is also important in reducing prejudice and stereotypes against minority groups. Individuals who practice empathy are more likely to question their own biases and recognize their shared humanity and common experiences with members of minority groups. This enhanced empathetic understanding can result in more positive attitudes, less prejudice, and a willingness to actively support equality and social inclusion (Dovidio et al., 2003). Empathy also promotes positive intergroup relations by encouraging trust, communication, and cooperation among majority and minority groups. Individuals are more likely to engage in meaningful interactions, seek common ground, and collaborate toward shared goals when they empathize with the experiences and challenges faced by members of minority groups. This empathetic connection promotes the development of positive attitudes, mutual respect, and social harmony (Cameron et al., 2012).

Empathy has been linked to more positive attitudes toward various social groups, including racial and ethnic minorities, people with disabilities, and people from marginalized communities, according to research. Empathy promotes attitudes of fairness, equality, and inclusivity by encouraging individuals to recognize and respect the humanity and worth of others (Batson et al.,

1997; Galinsky et al., 2013). Empathy improves interpersonal relationships and communication, which affects attitudes. When people show empathy for others, they create a sense of connection and trust. This empathic approach encourages positive interactions and aids in the development of strong relationships based on mutual respect and understanding. Positive social exchanges lead to more positive attitudes toward others (Davis, 1996). Individuals can challenge their own biases and stereotypes by empathizing with people from different social groups. Individuals can recognize their shared humanity and common experiences with others through empathy, resulting in more positive and accepting attitudes toward diverse individuals and groups (Vescio et al., 2003). Empathy is also important in promoting prosocial behaviors and attitudes. When people empathize with others in need or distress, they are more likely to engage in helpful behaviors and show genuine concern for others' well-being. This compassionate attitude toward others promotes positive attitudes such as kindness, generosity, and a sense of responsibility for the well-being of others (Eisenberg & Lennon, 1983).

1.2 Disgust

Disgust is one of the seven universal emotions that arise when reacting to something offensive. We can be disgusted by something we see with our physical senses (sight, smell, touch, sound, and taste), by individual choices or appearances, or even by ideas. The sensation of disgust appears to exist on a spectrum, with individual differences (Haidt, McCauley, & Rozin, 1994). It has been proposed that, like anxiety, the experience of disgust may include both "state" and "trait" components (Woody & Tolin, 2002). State disgust is aversion during exposure to disgust-relevant stimuli, drawing on prior work (e.g., Spielberger, 1972). Trait disgust may reflect the existence of stable individual differences in the tendency to respond to aversive stimuli with state disgust. Disgust is most intensely triggered by seeing, or even worse, smelling, or even worse, touching,

or, worst of all, ingesting rotting or decaying things, particularly body waste and other body matter. It is also elicited by seeing, touching, or ingesting some insects, but not all. Common disgust responses are gagging and nausea is certainly important (e.g., Angyal, 1941; Darwin, 1875/1965; Rozin & Fallon, 1987). However, involuntary recoil, increased salivation (e.g., Angyal, 1942; Rozin & Fallon, 1989), holding one's breath, and a distinctive facial expression; gape, nose-wrinkle, and an upturned lower lip have all been observed (e.g., Darwin, 1875/1965; Rozin, Lowery, & Ebert, 1994; Tomkins, 1962) are also observed. Parasympathetic arousal manifests as decreased blood pressure and heart rate rather than sympathetic signs (Levenson, 1992). Evolutionary psychologists argue that disgust has evolved as a protective mechanism to avoid potentially harmful substances or behaviors. Research suggests that disgust serves as a defense against pathogens, preventing ingestion or contact with potentially infectious agents. This adaptive function of disgust has been studied extensively in the field of evolutionary psychology. (Curtis, V., Aunger, R., & Rabie, T. (2004).

Moral outrage can be fueled by disgust, especially when people perceive a violation of moral norms or a threat to social order. This emotion can be used to condemn actions such as child abuse, animal cruelty, or violent acts. Moral outrage motivated by disgust is frequently used as a catalyst for collective action, promoting social change and justice (S. Schlall, J. Haidt, G. L. Clore, and A. H. Jordan (2008). As a complex and powerful emotion, disgust shapes our attitudes, judgments, and behavioral responses to various aspects of human behavior. While it can act as a moral compass, encouraging ethical decision-making and hygiene-related behaviors, it can also foster prejudice and social division. Understanding the complicated interplay of disgust and human behavior can shed light on the dynamics of our moral frameworks and societal interactions. It has been discovered that disgust sensitivity, or the extent to which individuals experience and respond

to disgust, predicts negative attitudes toward specific stimuli. Olatunji et al. (2007) investigated the relationship between disgust sensitivity and attitudes toward homosexuality in a study. Higher levels of disgust sensitivity were associated with more negative attitudes towards homosexuality, according to the findings. Inbar, Y.(2009) investigated the link between disgust sensitivity and attitudes towards homosexuality. Individuals with higher levels of disgust sensitivity were found to be more likely to express disapproval and negative attitudes towards gays and lesbians, implying that disgust sensitivity plays a role in the formation of negative attitudes.

1.3 Attitudes

Allport (1935) defines attitude as "a mental and cognitive state of readiness organized through experience, trying to assert a directive or external stakeholders upon the system leading to all objects and situations with which it is associated." Eagly & Chaiken, (1993) defines attitude as "Attitudes are psychological tendencies that are expressed by evaluating a particular entity with some degree of favor or disfavor." Attitudes have three components: cognitive (beliefs and thoughts about the object), affective (emotional responses to the object), and behavioral (tendencies to act in certain ways toward the object). The cognitive component of attitudes refers to individuals' beliefs, thoughts, and knowledge about the attitude object. It includes information and perceptions about the object, such as its attributes, features, and qualities. These cognitive beliefs shape how people think about and understand the object, and serve as the foundation for their overall evaluation. The affective component of attitudes refers to the emotional responses and feelings that people have toward the attitude object. It reflects the person's positive or negative affective assessment of the object. Attitude-related emotions can include feelings such as liking, disliking, joy, anger, fear, or excitement. The behavioral component of attitudes refers to

individuals' tendencies and inclinations to act or behave in certain ways toward the attitude object. It includes one's behavioral intentions and actions as a result of one's attitude. The behavioral component reflects the relationship between attitudes and behavior, as attitudes can guide and influence how people respond to and engage with attitude objects. These three attitudes are interconnected and influence one another. Cognitive beliefs influence affective responses, which in turn influence behavioral intentions and actions. Attitudes are fluid and change over time as a result of new information, experiences, or social interactions (Eagly and Chaiken, 1993). Personal interactions and experiences with homosexual people can have a significant impact on attitudes. Positive experiences, such as making friends or developing close relationships with LGBTQ+ people, can promote understanding, empathy, and acceptance (Herek, 2000). Negative experiences, on the other hand, such as witnessing discrimination or prejudice, may reinforce negative attitudes. Education and knowledge about homosexuality can help to break down stereotypes and foster understanding. In educational settings, learning accurate information about sexual orientation, dispelling myths, and promoting inclusivity can all contribute to more positive attitudes (Eisenberg & Lennon, 2002). Contact and familiarity with LGBTQ+ people can lead to more positive attitudes. Interacting with and learning from diverse people can help to break down stereotypes and reduce prejudice by increasing understanding and empathy (Pettigrew & Tropp, 2006). Beliefs and attitudes passed down through generations can influence attitudes toward homosexuality. Because of cultural and historical contexts, older generations may hold more traditional or conservative views, whereas younger generations, who have grown up in more inclusive environments, may have more positive attitudes (Twenge, Sherman, & Wells, 2015). The media has a significant impact on shaping attitudes, including attitudes towards homosexuals. Exposure to positive and diverse depictions of LGBTQ+ people in the media, such as television

shows, films, and news stories, can help to foster more accepting attitudes by challenging stereotypes and normalizing LGBTQ+ experiences (Pettigrew & Meertens, 1995). Gender stereotypes, which prescribe specific behaviors and expectations for men and women, can influence attitudes toward homosexuality. Traditional gender roles may elicit negative attitudes as a result of perceived deviation from societal norms (Swim & Cohen, 1997). Conformity to social norms, as well as peer influence, can shape attitudes toward homosexuality. If a social group or community has negative attitudes toward homosexuality, individuals may adopt and maintain those attitudes to fit in or avoid social rejection (Chaudoir & Fisher, 2010).

CHAPTER 2: LITERATURE REVIEW

Empathy is important in shaping people's attitudes and reactions towards various social groups, including sexual minorities like homosexuals (Herek,2002). According to a growing body of research Herek, G. M., & Capitanio, J. P. (1996), empathy and its association with emotions such as disgust can influence one's attitudes and prejudices toward people of different sexual orientations. The purpose of this work is to investigate the relationship between empathy, disgust, and attitudes toward homosexuals. We will gain a better understanding of the intricate interplay between these psychological factors and their implications for social acceptance and inclusion by examining empirical studies in this area.

Empathy is defined as the ability to understand and share the feelings of others, including homosexual people. According to research, higher levels of empathy are associated with more positive attitudes toward homosexuals and less prejudice. Hodson, G, & Costello K. (2007) looks into the connection between interpersonal disgust, ideological orientations, dehumanization, and intergroup attitudes. The study aims to better understand the factors influencing intergroup attitudes, which refer to people's feelings and beliefs about different social groups. The authors investigate three major factors: interpersonal disgust, ideological orientations, and dehumanization. Interpersonal disgust is the emotional response elicited by stimuli perceived to be physically or morally repugnant. Conservative and liberal ideologies are examples of ideological orientations. Dehumanization is the perception of members of outgroups as being less human or possessing fewer human characteristics. To form their hypotheses, the researchers build on existing theories. They contend that people who have higher levels of interpersonal disgust are more likely to harbor negative intergroup attitudes. They also suggest that ideological orientations

may moderate the relationship between interpersonal disgust and intergroup attitudes, with conservatives showing a stronger link. Furthermore, the authors hypothesize that dehumanization acts as a buffer between interpersonal disgust and intergroup attitudes. The authors used an online survey approach to conduct two studies to test their hypotheses. The first study used a sample of 256 undergraduate students, while the second used a larger sample of 270 community members. Measures of interpersonal disgust, ideological orientations, dehumanization, and intergroup attitudes were completed by participants. The two studies' findings supported the authors' hypotheses and provided several key insights: Higher levels of interpersonal disgust were related to more negative intergroup attitudes. This relationship was found in both studies. The relationship between interpersonal disgust and intergroup attitudes was moderated by ideological orientations (conservatism vs. liberalism). Conservatives, in particular, showed a stronger link between interpersonal disgust and negative intergroup attitudes than liberals. Dehumanization mediated the relationship between interpersonal disgust and intergroup attitudes to some extent. This means that people who felt more interpersonal disgust were more likely to dehumanize outgroup members, resulting in more negative intergroup attitudes. This study's findings have important implications for understanding intergroup attitudes and the factors that influence them. The positive relationship between interpersonal disgust and negative intergroup attitudes suggests that disgust sensitivity contributes to the formation of intergroup biases. The ideological orientation moderation effect emphasizes the influence of political beliefs on intergroup attitudes, with conservatives showing a stronger link between disgust and negative attitudes. Furthermore, dehumanization's mediating role suggests that dehumanizing perceptions of outgroup members may explain why interpersonal disgust is associated with negative attitudes. Rozin et al. (1999) investigated the distinction between empathy and total disgust as emotional processes. The researchers wanted to know if

empathy and disgust are separate concepts or if they are inextricably linked. A series of experiments were conducted to assess participants' emotional responses to various stimuli. In one experiment, participants were shown scenarios describing situations that could elicit empathy, such as someone suffering an injury or experiencing a loss. The researchers assessed the emotional responses of participants to these scenarios, including feelings of empathy and compassion. Participants in another experiment were exposed to disgusting stimuli such as unpleasant smells or images of contaminated objects. The researchers assessed participants' disgust-related emotional responses, such as aversion and desire to avoid the stimuli. These stimuli were created to elicit separate feelings of empathy and disgust, allowing for a comparison of the two emotional processes. According to the study's findings, empathy and total disgust are distinct emotional processes. When participants felt empathy versus disgust, they had different physiological and subjective responses. Empathy, for example, was linked to feelings of warmth, compassion, and concern, whereas disgust elicited feelings of revulsion, aversion, and a desire to avoid. Furthermore, the researchers discovered that people can feel empathy and disgust for different aspects of a single stimulus at the same time. This finding bolstered the notion that empathy and total disgust can coexist and function independently, the assumption that empathy and disgust are inextricably linked. It demonstrated that these emotional processes can be felt separately and may serve distinct adaptive functions. While empathy enables people to connect emotionally with others and understand their experiences, total disgust serves as a defense mechanism against potential harm or contamination. The findings of the study have implications for understanding the complexities of human emotions and the wide range of emotional responses that people can have. Recognizing empathy's independence from total disgust contributes to a more nuanced understanding of how emotions operate and interact in various contexts.

Morelli, Rameson, and Lieberman (2014) conducted a study to investigate the neural components of empathy and their predictive relationship with daily prosocial behavior. The researchers wanted to know how brain activity related to empathy could predict people's involvement in helping and altruistic behaviors in their daily lives. The study participants underwent functional magnetic resonance imaging (fMRI) scans while performing empathy-related tasks to conduct their research. According to the study's findings, higher levels of daily prosocial behavior are predicted by greater neural activation in specific brain regions associated with empathy (such as the anterior insula, anterior cingulate cortex, and ventromedial prefrontal cortex). Acts of kindness and helping others, for example, demonstrate positive attitudes and concern for the well-being of others. The study highlights how empathy can shape attitudes through its influence on daily actions by linking neural activation during empathy-related tasks to subsequent prosocial behavior. Prosocial behaviors based on empathic responses can reinforce positive attitudes towards others and help to shape more compassionate and caring attitudes. According to the findings, the subjective experience of empathic concern mediates the link between neural activation and prosocial behavior. This suggests that people who express more empathic concern for others have stronger links between their brain activity during empathy tasks and their subsequent engagement in prosocial behaviors. Thus, empathy's subjective experience is critical in translating neural responses into real-world attitudes and behaviors.

Westermarck (1908) defined disgust toward homosexuality as a normative reaction, describing it as the feeling of aversion or disgust that the idea of homosexual intercourse tends to elicit in normally constituted adult individuals whose sexual orientation is heterosexual. When heterosexuals reflect on their emotions after having contact with gay men, the fear is rarely reported. (Herek, 2004). The more common affective reaction to gay men appears to be disgust

rather than fear (Cottrell & Neuberg, 2005; Herek, 1994; Parrott, Zeichner, & Hoover, 2006; Tapias, Glaser, Keltner Vasquez, & Wickens, 2007). Disgust is the most common emotion heterosexuals associate with gay men, and disgust is reported toward gay men more than any other outgroup (Cottrell & Neuberg, 2005). Most anti-gay attitudes questionnaires include items assessing disgust toward gay men or same-sex behavior (Frable, Workman, & Joseph, 2001; Herek, 1994; LaMar & Kite, 1998; Larson, Reed, & Hoffman, 1980). and predisposed people to disgust tend to report more anti-gay prejudice (Ernulf & Innala, 1987; Van de Ven, Bornholt, & Bailey, 1996).

Paolucci (2008) investigated to understand disgust against gay men. He undertook three studies. In study 1, he studied moral disgust wherein he tested two hypotheses: 1) Male homosexual behavior must be morally repugnant, and 2) it must elicit both disgust and anger. The gay clip was deemed more morally offensive than the neutral and disgusting clips. Surprisingly, both the anger clip and the gay clip were deemed immoral. With hindsight, given the content of the clips, this makes sense. The rage clip (My Bodyguard) shows a teenage boy being bullied by his older peers. Because a person was being harmed, the clip may have evoked a sense of moral injustice. Harm perceptions have long been thought to be a fundamental foundation of moral reasoning (Kohlberg, 1969) (Haidt & Graham, 2006). The second hypothesis was supported by men and not by women. Following the gay clip, all participants expressed disgust, but only men voiced anger. The anger ratings of women did not differ significantly from the neutral clip. Because moral disgust is defined as a combination of, the current study does not support the hypothesis that women experience moral disgust for homosexual behavior. Males, on the other hand, demonstrated a pattern that was consistent with righteous disgust. They rated the clip as immoral, with disgust and anger significantly higher than in the neutral condition. This finding, combined with men's higher

immorality ratings of the gay clip, provides compelling evidence that heterosexual men (but not women) are morally repulsed by male homosexual behavior. These findings are also consistent with antigay attitudes research, which consistently shows that male attitudes toward gay men are more damaging than female attitudes (Herek, Herek, & Herek&Capitanio, 1994;2000;1998;1996). The second study looked at male reactions to homosexual behavior in men. Two factors have been proposed to influence men's moral disgust arousal: masculine role norms and defensiveness threat (Herek, 1986,1987). According to the findings of this study, when compared to the neutral clip, all men expressed moral disgust. Although strong supporters of masculinity scored higher on morality, disgust, and anger, low supporters scored significantly higher on these variables when compared to the neutral clip—which predicted that men who strongly endorse masculine role norms would report harsher moral judgment and more disgust and anger toward that gay male film /clip. This prediction was correct. Morale ratings, disgust, and anger were higher among those who strongly support masculine role norms, and this was true only for the gay clip. There were no differences in these three variables for the neutral clip. This pattern builds on research demonstrating the importance of masculinity in antigay attitudes (Herek, et al., 1986,2003,2005,2007,2001), antigay anger (Parrott & Zeichner & Parrott, 2006), and antigay aggression (Cohn&Zeichner, 2006). According to this study, men who support masculine role norms have strong disgusted reactions to homosexual behavior, along with a moderate increase in anger. Even though this mixture of disgust and anger was discovered, the primary emotion felt was disgust. The third study tested the hypothesis that moral disgust reactions to gay male targets are stronger 1) when masculine role norms are strongly endorsed and 2) under threat. Surprisingly, the threat condition did elicit moral disgust, but contrary to expectations, it was directed at both gay and straight targets. People made harsher moral judgments about target participants when they

were threatened, and they felt disgusted and angry toward them. Such reactions were expected to be directed solely at gay men. It was anticipated that heterosexual men would elicit more anger but not moral disgust. This study shows that when men are threatened with the suspicion of being gay, both gay and heterosexual men experience moral disgust. Furthermore, in the absence of a threat, gay targets showed no difference in moral disgust from heterosexual targets. Gay men were not considered morally immoral in these circumstances, nor did they elicit disgust or anger reactions. This implies that, at least in comparison to heterosexual men, gay men do not elicit moral disgust. Although gay men are viewed with disdain in contrast to other outgroups (Cottrell&Neuberg, 2005), the findings of Study 3 suggest that this disgust is not felt on an individual level. This could be attributed in part to people's rapidly improving attitudes toward homosexuality (Yang, 1997).

Cunningham, E., Forestell, C. A., & Dickter, C. L. (2013) studied Induced disgust affects implicit and explicit responses toward gay men and lesbians The current study used a carefully controlled odor manipulation to induce disgust and observe its effect on participants' implicit and explicit responses to homosexuals. Participants were given a vial containing an odor described as "body odor" (n = 47), which elicited a high level of disgust, "parmesan cheese" (n = 43), which elicited a moderate level of disgust, or an odor-free vial (n = 53). Following that, participants viewed images of homosexual and heterosexual couples, and their viewing times and ratings of the pleasantness of the images were recorded. They also completed a "feelings thermometer" task, the Attitudes Toward Lesbians and Gay Men scale, which assessed feelings toward homosexuals, and the Three-Domain Disgust Scale, which assessed sensitivity across three dimensions of disgust (pathogen, moral, and sexual). When compared to participants in the other two conditions, those in the body odor condition viewed images of gay (but not lesbian) couples for less time than those

in the other two conditions. In terms of explicit ratings, participants in the body odor condition reported colder feelings for gay men compared to heterosexual men on the feeling's thermometer than those in the no-odor control condition. The odor manipulation served as a moderator for pleasantness ratings, such that higher sensitivity to sexual disgust predicted lower ratings for images of lesbian couples compared to straight couples for those in the body odor condition only. Thus, while disgust induction biases both implicit and explicit responses to gay couples, the extent to which this occurs for explicit ratings of lesbian couples is dependent on sexual disgust levels.

Nega, Pateraki, Saranti, and Pasia conducted a study in 2016 to investigate the role of disgust in homosexuality judgments. The researchers looked specifically at how disgust can influence people's attitudes, stereotypes, and moral judgments about homosexuality. The researchers recruited a sample of participants for this study and exposed them to various scenarios or descriptions of homosexuality. They then used self-report measures to assess the participants' disgust levels. In addition, the researchers used established scales to assess participants' attitudes, stereotypes, and moral judgments toward homosexuality. The study's findings revealed that disgust was associated with negative attitudes, stereotypes, and moral judgments about homosexuality. Participants who expressed more disgust were more likely to hold negative attitudes and pass harsher moral judgments on homosexuality. These findings suggest that disgust influences people's perceptions and evaluations of homosexuality. It implies that disgusting feelings may contribute to the formation of negative attitudes and moral judgments toward homosexual people.

Ray T. Parkhill M. (2020) studied how within a sexual orientation-based social hierarchy, heteronormative ideology acts as a social force to keep dominant group members in power (e.g., heterosexual men). The sample was 409 heterosexual American men, wherein their heterosexual ideology, disgust sensitivity, and hostile gay attitude were assessed. It was hypothesized that, when

compared to the pathogen or moral disgust, sexual disgust would be most strongly associated with anti-gay hostility. It would statistically mediate its relationship with heteronormativity. The findings indicated that sexual revulsion, but not pathogen or moral disgust, mediated the relationship between heteronormativity and hostility toward gay men. Furthermore, the indirect effect mediated by sexual aversion was significantly more substantial than the indirect effects mediated by the pathogen or moral disgust. The direct impact of heteronormativity on antigay hostility, on the other hand, was more significant than any of the indirect effects via the disgust constructs. These findings suggest that theories about the behavioral immune system may be insufficient to explain the phenomenon of antigay hostility. Attribution theory is one theory that provides insight into the foundations of attitudes toward lesbian and gay men. According to attribution theory, people try to figure out why people do what they do, i.e., attribute causes to behavior.

Kite, M. E., Whitley, B. E., Jr., Buxton, K., & Ballas, H. (2021) studied the heterosexual attributions for the causes of homosexuality to attitudes towards Lesbian and Gay men. A sample of 193 female and 173 heterosexual college students were collected. In this study, they considered attribution theory. According to the idea, people perceived to have caused their stigmata will be judged more negatively than those stigmatized as a result of the actions of others. They predicted that people who believe homosexuality is a controllable state would have more negative attitudes toward gay people if they applied this theory. Those who believe homosexuality is genetic or biologically based have fewer negative attitudes toward gay people than those who think it is learned or a matter of personal preference or choice. According to the findings, heterosexual attitudes toward same-sex gay people were more negative than those toward other-sex gay people, and heterosexuals who knew gay people had a more positive attitude than those who did not.

B. Altemeyer, (2008), conducted a study titled "Changes in Attitudes Toward Homosexuals" that looked at the shifts and changes in societal attitudes toward homosexuals over time. The study's goal is to better understand the factors that influence attitude change and to provide insight into the changing social perceptions of homosexuality. Altemeyer studies the dynamics of attitude change by examining societal trends and analyzing the factors that influence people's attitudes toward homosexuals. Education, exposure to diverse perspectives, personal interactions, and societal norms are all investigated as potential influences in the study. The study's findings contribute to a better understanding of how attitudes toward homosexuals have changed over time. It emphasizes the significance of societal progress, increased knowledge, and exposure to diverse points of view in fostering more positive and accepting attitudes toward homosexuality. Altemeyer's study provides valuable insights into the social dynamics and factors that shape public opinion about homosexuality by examining changes in attitudes. It emphasizes the possibility of positive attitude change through education, increased exposure, and the dissemination of accurate sexual orientation information. It is important to note that the study does not provide a specific summary of findings because it examines changes in attitudes toward homosexuals over time.

Mary E. Kite and Day Deaux's (2010) study "Attitudes Toward Homosexuality: Assessment and Behavioral Consequences" investigates attitudes toward homosexuality, their measurement, and the behavioral consequences associated with these attitudes. The study investigates the behavioral consequences of attitudes toward homosexuality. It investigates how attitudes can influence people's actions, such as their support for equal rights, acceptance of discriminatory policies, and participation in prejudiced behaviors or acts of violence. According to the findings, negative attitudes toward homosexuality can result in discrimination, prejudice, and stigmatization of sexual minorities. These attitudes can manifest themselves in a variety of ways, such as social exclusion,

verbal harassment, and physical violence. Positive attitudes toward homosexuality, on the other hand, are associated with support for equal rights, acceptance, and inclusive behaviors. The study emphasizes the importance of promoting positive attitudes toward homosexuality through education, exposure to diverse viewpoints, and challenging preconceived notions. It emphasizes the importance of social norms, media representation, and contact with members of sexual minority groups in shaping and changing attitudes toward homosexuality.

Eugene E. Levitt, Ph.D., and Albert D. Klassen Jr., M.A. conducted the study titled "Public Attitudes Toward Homosexuality: Part of the 1970 National Survey by the Institute for Sex Research." The research focuses on public attitudes toward homosexuality in the United States in 1970. The study's goal was to provide insights into the prevalent societal attitudes at the time and to investigate factors that might influence those attitudes. The researchers looked at different aspects of public attitudes toward homosexuality, such as acceptance, moral judgments, beliefs about the origins of homosexuality, and perceived societal responses. The study's findings shed light on the prevalent attitudes toward homosexuality in 1970. It revealed a significant amount of negative attitudes and moral judgments toward homosexuality, with a sizable portion of the population disapproving or considering it immoral. However, the study discovered demographic differences in attitudes, indicating that younger people and those with higher education levels had more accepting attitudes toward homosexuality. The study shed light on the social climate surrounding homosexuality in 1970, revealing the prevalence of negative attitudes as well as potential demographic influences on those attitudes. It aided in understanding the historical context and societal attitudes toward homosexuality at the time. It's worth noting that the study focuses on attitudes toward homosexuality in 1970 and that societal attitudes have most likely evolved since then. Attitudes toward homosexuality have shifted significantly over the decades.

CHAPTER 3: RESEARCH GAP, OBJECTIVES AND HYPOTHESES

3.1 Research Gap

Age differences in attitudes toward homosexuals are an important topic that has received little attention. Despite a large body of literature examining attitudes toward homosexuality, there is a research gap regarding the impact of age on these attitudes. Few studies have specifically investigated how attitudes toward homosexuals may differ across age groups, highlighting the need for additional research in this area. Herek (2002) conducted a study that looked at generational differences in attitudes toward homosexuality but did not specifically look at age groups within the same generation. The study discovered that younger cohorts had more favourable attitudes toward homosexuality than older cohorts. It did not, however, provide a detailed analysis of age-related differences within each cohort. Lambert, Stillman, Baumeister, Fincham, and Hicks (2010) conducted a study that looked at age differences in attitudes toward same-sex sexual behavior but did not specifically address attitudes toward homosexuals as individuals. Although the study discovered evidence of more positive attitudes among younger adults, it did not provide a comprehensive examination of age differences across the lifespan. There is a significant research gap in determining how attitudes toward homosexuals differ across age groups within the same generation. It is critical to investigate these age differences in order to gain a comprehensive understanding of how attitudes develop, evolve, and possibly change over time.

3.2 Theoretical Framework

- Homophobic individuals may experience disgust towards homosexuality as a means of maintaining and expressing their adherence to societal norms, including traditional gender and heterosexual relationships (Haidt,2001).
- Individuals who hold negative attitude towards homosexuality may experience disgust due to societal messages that portrays homosexuality as abnormal (Herek,2000)
- Experience of homophobic disgust may influence attitude towards sexual minorities. Disgust can elicit avoidance & rejection behavior, leading to negative evaluation & discrimination towards gays, lesbians and bisexual individuals.(Hatzenbwehler,2009).
- Disgust is often linked to notion of contamination and purity and individuals may experience homophobic disgust due to perceived violation of traditional sexual norms and notions of purity (Morrison,2004).

3.3. Objectives:

1. To determine any age difference in attitude towards homosexuals.
2. To determine disgust and empathy as predictors of attitude towards homosexuals.
3. To determine if empathy mediates between disgust and attitude.
4. To determine attitude differences in between groups.

For study 1 Following is a correlational design and the following hypotheses were formed:

3.4 Hypotheses

H1: Disgust will predict attitude towards homosexuals in young adults and older adults

H2: Disgust, Attitude, and Empathy will significantly differ across young and older adults

Study 2. To Investigate if different kinds of Disgust evoke any difference in Attitude toward

Homosexuals

H3: There will be no significant difference in disgust across gays and LBT

H4: There will be a significant difference in attitude across gay and LBT

H5: There will be a significant difference in empathy across gay and LBT

CHAPTER 4: METHODOLOGY

4.1 Study 1: Survey

4.2 Sample

The research sample comprised 300 people, which were divided into two groups i.e., young adults and older adults. 150 participants were young adults falling within the age range of 21-30 years, whereas the other group too consisted of 150 participants falling between the age range of 45-55 years. Young adults were students of The Thapar Institute of Technology from various bachelor's and master's programs. The other group of 150 older adults was parents of students and older adults who fulfilled the criteria. Two different age groups were chosen to see the difference in attitude.

4.3 Sample Characteristics

The sample consists of male and female participants between the two age groups i.e. 21-30 years and 45-55. For younger adults, 8% of males and 92% of females participated and for Older adults 21.33% were males and 78.67% were females.

4.4 Research Design

In this study, correlational design has been used. The independent variable was attitude, the dependent variable was disgust and empathy.

4.5 Tools Used

In total three scales were administered to the participants manually and through google forms to get the required data. The three standardized scales are as follows:

4.5.1 The Toronto Empathy Scale

Jolliffe and Farrington (2006) created the Toronto Empathy Scale (TES). It is a psychometric tool used to assess an individual's level of empathy. The TES is used to assess the cognitive and affective components of empathy, providing information about one's ability to understand and share the emotions of others. The TES consists of 16 items that people rate on a Likert scale to indicate how much they agree or disagree with empathy statements. Based on their responses to the TES items, the total score reflects an individual's overall level of empathy. Higher total scores indicate greater empathy, while lower total scores indicate less empathy.

4.5.2 The Disgust Scale

The Disgust Scale is a self-report personality scale developed as a general tool for the study of disgust by Jonathan Haidt, Clark McCauley, and Paul Rozin (1994). It is used to assess individual differences in disgust sensitivity and to investigate the relationships between different types of disgust. It is divided into three subscales: core disgust (food, animals, and body products), animal-reminder disgust (death and envelope violations), and contamination disgust (concerns about interpersonal transmission of essences). Every item is rated on a 5-point scale (0-4). The total will be between 0 and 100.

4.5.3 The Attitude towards homosexual's scale for Indians

AHSI is a self-report tool, assessing attitudes towards homosexuality among heterosexuals in India. It is a 5-point Likert scale, with 20 items. Where 10 are positively worded and 10 are negatively worded. Higher scores indicate more positive attitudes toward homosexuality, gay men, and lesbian women. Higher the total score, the greater the attitude of a heterosexual individual towards homosexuals.

4.6 Procedure

First, the data was collected for the younger adults falling between the age of 21-30 years. They were all students from the Thapar Institute of Technology. They were contacted through snowball and convenience sampling. They were invited to a class in a group of 10-15 people. Questionnaires were distributed to them. Before starting with filling up the questionnaire's instructions were given regarding them.

The first was The Toronto Empathy scale: "Please carefully read each statement below and rate how frequently you feel or act in the manner described. On the response form, circle your response. There are no correct or incorrect answers, nor are there any trick questions. Please answer each question as truthfully as possible."

The second Disgust scale was divided into two parts wherein 1 to 14 items were in the first part and 15 to 27 items were in the second part. So, the instructions for the first part of the Disgust Scale were: "Please indicate how much you agree or how true each of the following statements is about you. Please enter a number (0-4) to indicate your response: 1 = Mildly disagree (somewhat untrue about me), 0 = Strongly disagree (very untrue about me). 2 = Do not agree, 3 = Mildly agree (somewhat true about me), 4 = Strongly agree (very true about me)."

Instructions for the second part were: “Which of the following experiences would you find the most repulsive? Please enter a number (0-4) to indicate your response”

And the last was the Attitude towards homosexual's scale for Indians, Instructions for this were: “Please read each statement carefully and rate how frequently it occurs. On the response form, circle your response. There are no correct or incorrect answers, nor are there any trick questions. Please answer each question as truthfully as possible: (1) stands for Strongly disagree; (2) stands for Disagree; (3) stands for Neutral; (4) stands for Agree; and (5) stands for Strongly agree.”

The participants took 15 minutes to fill out all three questionnaires. In case of any confusion, they were free to ask out. All the responses were recorded manually.

Later data was collected for the older adults. There were a few challenges while collecting the data between the age of 45-55 yrs. Those were: It was hard to contact 150 people of this age range who are willing to be part of the research. These participants were contacted through snowball sampling and convenience sampling. The participants were the parents and other friends of the student who came in touch during the data collection procedure. Informed consent was obtained from the participant.

4.7 Precautions

1. It was ensured that there is no external disturbance
2. Participants were encouraged to ask questions wherever they do think any point is not clear.
3. Not any kind of engagement with gadgets was permitted whilst filling up the form
4. Participants were asked to fill out the form in just one go and they can leave only once they are done.

Study 2: To Investigate if different kinds of Disgust evoke any difference in Attitude toward Homosexuals

Stage I: Young Adults

The purpose of your study was to investigate if different kinds of disgust evoke any difference in attitude towards homosexuals. Further, the aim was to confirm the role of empathy in this relationship.

4.8 Sample

A sample of 120 participants between the age range of 21-30 years, consisting of both males and females was taken.

4.9 Sample characteristics

The sample consisted of a total of 120 participants selected from the campus of Thapar Institute of Technology, Patiala. 120 participants were divided into four groups. Each group had 30 participants. Data from 30 was collected in two phases, 15 participants in each. The sample consisted of both male and female participants. The mean age was 22.99 years ($SD=1.65$). The sample consisted of 19.17% of males and 80.83% of females. All the participants recognized themselves as heterosexuals.

4.10 Sample Criteria

Sampling techniques were employed in selecting the participants for the study: Snowball sampling. It was used to assist the researcher in identifying other potential participants.

4.11 Research Design

The research design of this study is a between-subject design. The sample was divided into four groups and four groups were further divided into a group of fifteen for conduction purposes. Different sets of pictures were used as stimuli. All pictures were presented on {details of the screen} at a rate of 10 seconds.

4.12 Tools used

1. Then there were pictures taken from The Disgust-Related-Images (DIRTI) database: Validation of a novel standardized set of disgust pictures by Haberkamp, A., Golembiewski, J. A., Schmidt, F., & Barke, A. (2017)

The pictures were divided into 4 categories, from which two categories i.e. disgust and control images are taken from the DIRTI database.

- a. Generalized disgust images were taken from the DIRTI database by Haberkamp et al., 2017. The standardized pictures of disgust include disgusting and awful pictures like maggots, blood stains, vomit, the dead body of a bird, maggots eating a dead animal, condoms, fungus on food, and injury on the human body.
- b. Gays: For this category, pictures were taken through online sources Pictures were selected keeping in mind that the frequency or the intensity of the pictures keeps increasing as one

goes from the very first till the last. It includes pictures like in the start they are sitting, talking, but as the pictures go ahead several pictures of gay people kissing each other, sitting in their lap such intimate pictures were introduced.

- c. LBT: For this category, pictures were taken through online sources d Pictures were selected keeping in mind that the frequency or the intensity of the pictures keeps increasing as one goes from the very first till the last. It includes pictures like the start of the LBT including pictures of LBT people like lesbians kissing, bisexual couples standing with both genders, and transsexuals enjoying and having fun just being together.
- d. Control Images: Screen
- e. Pen Paper forms
- f. Timer



Fig. 2. Screen that was used for showing the stimulus.



Fig. 3. Setting where the experiment was conducted.

4.13 Procedure

When the participants agreed to be part of the experiment, they were asked to sign a consent form. The participants were called to a lecture hall and were seated comfortably. The participants were divided into four groups namely Disgust, Gays, LBT, and control. These four groups administered four different kinds of images as groups as mentioned under tools. The participants were given a brief explanation regarding the title of the research and its purpose was made clear. Nonetheless for all the groups following instructions were given: The following instructions were provided to the participants. “After reading the article you will be shown 20 pictures with each picture displaying for 10 seconds and once the slideshow for the pictures is done you will be asked to fill out the questionnaire. If you can't see any pictures then there is no compulsion to see it, you can simply stop.”

This whole experiment took 15 minutes to complete for each group.

4.14 Precautions

1. Participants were made to sit in a well-lit room.
2. It was ensured that there should not be any kind of external disturbance.
3. It was ensured that everybody participating in the experiment was at ease being shown the pictures.
4. During the time of filling out the questionnaire, the participants were told to ask the experimenter if they had any doubts.
5. It was ensured nobody engaged in discussion and no one's response is visible to others. This is done to control social desirability.

Stage II

4.15 Sample

A sample of 120 participants between the age range of 45-55 years, consisting of both males and females was taken.

4.16 Sample characteristics

The sample consisted of a total of 120 participants selected from the society in the researcher's hometown. 120 participants were divided into four groups as the study has four different stimuli to be presented. Those four groups were further divided into groups of two. The sample consisted of both male and female participants. The mean age was 50.98(SD=2.86). The sample consisted of 15% of males and 85% of females. All the participants recognized themselves as heterosexuals.

4.17 Sample Criteria

Sampling techniques were employed in selecting the participants for the study: Snowball sampling. It was used to assist the researcher in identifying other potential participants.

4.18 Research Design

The research design of this study is a between-subject design. The sample was divided into four groups and groups were further divided into a group of fifteen for conduction purposes. And pictures as a stimulus based on the assumption that different pictures will elicit different kinds of responses in attitude.

4.19 Tools

1. Then there were pictures taken from The Disgust-Related-Images (DIRTI) database: Validation of a novel standardized set of disgust pictures by Haberkamp, A., Glombiewski, J. A., Schmidt, F., & Barke, A. (2017)

The pictures were divided into 4 categories, from which two categories i.e., disgust and control images are taken from the DIRTI database.

- a. Generalized disgust images were taken from the DIRTI database by Haberkamp et al., 2017. The standardized pictures of disgust include disgusting and awful pictures like maggots, blood stains, vomit, the dead body of a bird, maggots eating a dead animal, condoms, fungus on food, and injury on the human body.
- b. Gays: For this category, pictures were taken through online sources Pictures were selected keeping in mind that the frequency or the intensity of the pictures keeps increasing as one goes from the very first till the last. It includes pictures like in the start they are sitting, talking, but as the pictures go ahead several pictures of kissing gays, sitting in their lap such intimate pictures were introduced.

- c. LBT: For this category, pictures were taken through online sources d Pictures were selected keeping in mind that the frequency or the intensity of the pictures keeps increasing as one goes from the very first till the last. It includes pictures like the start of the LBT including pictures of LBT people like lesbians kissing, bisexual couples standing with both genders, and transsexuals enjoying and having fun just being together.
- d. Control Images: Screen
- e. Pen Paper forms
- f. Timer

CHAPTER 5: RESULTS

Statistical package for social sciences (SPSS) 23 was used to analyze the data collected. Data is presented first for correlational study followed by experiment.

Study 1: Survey

Table 1: Descriptive Statistic for Young Adults

	N	Mean	St. Deviation	St. Error	Minimum	Maximum
Empathy	150	45.02	6.8	.55	24.00	60.00
Total Disgust	150	2.39	.52	.04	.56	3.40
Attitude	150	86.31	12.34	1.00	51.00	100.00

Table 1 shows Descriptive Statistics of variables Empathy, Total Disgust, and Attitude for young adults. The table shows the mean, standard deviation, and sample size. The mean score of Empathy was 45.02 (SD = 6.85) respectively, indicating the average level of empathy may vary moderately. The lowest empathy score is 24, and the highest is 60. Total Disgust mean was 2.39 (SD = .52) respectively, indicating scores are relatively stable. The lowest total disgust score is 0.56, and the highest is 3.40. For Attitude the mean score was 86.31(SD = 12.34) respectively, indicating that attitude scores vary moderately. The minimum and maximum attitude scores are 51 and 100, respectively. The above score shown in the table is based on the sample size of 150 young adults.

Table 2 Correlation for young adults

	Attitude	Empathy	Total Disgust
Attitude	1.00		
Empathy	.450	1.00	
Total Disgust	-.025	-.221	1.00

Table 2 shows the correlation between Attitude, Empathy and Total Disgust. The correlation between attitude and empathy is ($r = .450, p < .05$), indicating a moderate relationship between these two variables. This suggests that people with more positive attitudes have higher levels of empathy. Attitude and Total Disgust, on the other hand, have a weak negative correlation of ($r = -.025, p > .05$), implying a minimal relationship between these variables. This suggests that there is no significant relationship between attitudes and total disgust. Finally, Empathy and Total Disgust have a ($r = -.221, p > .05$) weak negative correlation, indicating a slight negative relationship between these variables. This implies that people with higher levels of empathy have slightly lower levels of total disgust.

Table 3 Regression analysis for young adults

Model	Unstandardize d B	Coefficient St. Error	Standardized Coefficient Beta	t	Sig
1. Constant	49.84	6.01		8.28	.000
Empathy	.81	.13	.45	6.12	.000
2.(Constant)	44.07	8.19		5.38	.000
Empathy	.841	.13	.46	6.20	.000
Total Disgust	1.82	1.76	.078	1.03	.301

Table 3 shows regression analysis for young adults. The unstandardized coefficient (B) for Empathy is .81 (SE = .13), indicating that for every one-unit increase in Empathy, the outcome variable, Model, increases by .81 units on average. Empathy has a standardized coefficient beta of .45, implying that it explains 45% of the variance in Model. Empathy has a t-value of 6.12, indicating that the relationship between Empathy and Model is statistically significant ($p < .001$). In this model, the constant term is 49.84 (SE = 6.01), which represents the expected value of Model when Empathy is zero. The constant term is statistically significant as well ($t = 8.28$, $p < .001$). Empathy and Total Disgust are both listed as predictors. Empathy's unstandardized coefficient remains constant at .841 (SE = .13), indicating that its relationship with Model is consistent across models. The standardized coefficient beta for Empathy remains at .46, indicating that Empathy accounts for 46% of the variance in Model when Total Disgust is controlled for. Total Disgust has an unstandardized coefficient of 1.82 (SE = 1.76), but it is not statistically significant ($t = 1.03$, $p = .301$). In this model, the constant term is 44.07 (SE = 8.19), and it is statistically significant ($t = 5.38$, $p < .001$).

Table 4: Descriptive statistics for Older Adults

	N	Mean	St. Deviation	St. Error	Minimum	Maximum
Empathy	150	36.18	8.83	.72	14.00	56.00
Total Disgust	150	2.02	.50	.04	.56	3.12
Attitude	150	57.31	18.93	1.54	19.00	95.00

Table 4 shows Descriptive Statistics for variables Empathy, Total Disgust, and Attitude of Older Adults. The table shows the mean, standard deviation, and sample size. The mean score for Empathy was 36.18 (SD = 8.83) respectively, The average level of empathy in the sample. suggests that the sample's individual empathy scores vary moderately around the mean. The sample's range of possible scores is defined by a minimum empathy score of 14 and a maximum score of 56. The mean score for Total Disgust was 2.02 (SD = .50) respectively, indicating the sample's average level of total disgust. And when compared to empathy, individual total disgust scores within the sample vary relatively less around the mean. The mean score for Attitude was 57.31 (SD = 18.93) respectively, representing the average attitude score within the sample.

Table 5 Correlation for Older adults

	Attitude	Empathy	Total Disgust
Attitude	1.00		
Empathy	.237	1.00	
Total Disgust	-.012	.152	1.00

Table 5 shows Correlation between variables Empathy, Total Disgust and Attitude. There is a ($r = .237$, $p < .05$) positive correlation between Attitude and Empathy. This suggests a weak relationship, indicating that people with more positive attitudes have slightly higher levels of empathy. With a negligible negative correlation of ($r = -.012$, $p > .05$), the correlation between Attitude and Total Disgust is close to zero. This suggests that there is no significant link between attitudes and total disgust. Similarly, the positive correlation between Empathy and Total Disgust is weak, with a value of ($r = .152$, $p > .05$). This suggests a minor link, implying that people with slightly higher levels of empathy may also have slightly higher levels of total disgust.

Table 6 Regression analysis for older adults

Model	Unstandardize d B	Coefficient St. Error	Standardized Coefficient Beta	t	Sig
1. Constant	38.90	6.37		6.10	.000
Empathy	.509	.171	.23	2.971	.003
2. (Constant)	42.07	8.24		5.10	.000
Empathy	.52	.17	.245	3.02	.003
Total Disgust	-1.85	3.04	-.049	-.60	.544

Table 6 shows regression analysis for older adults. The unstandardized coefficient (B) for Empathy is .509 (SE = .171), indicating that for every one-unit increase in Empathy, the outcome variable, Model, increases by .509 units on average. Empathy has a standardized coefficient beta of .23, implying that it explains 23% of the variance in Model. Empathy has a t-value of 2.971, indicating that the relationship between Empathy and Model is statistically significant ($p = .003$). In this model, the constant term is 38.90 (SE = 6.37), which represents the expected value of Model when Empathy is zero. The constant term is statistically significant as well ($t = 6.10$, $p < .001$). Empathy and Total Disgust are both listed as predictors. Empathy's unstandardized coefficient remains constant at .52 (SE = .17), indicating that its relationship with Model is consistent across models. The standardized coefficient beta for Empathy remains at .245, indicating that Empathy explains 24.5% of the variance in Model when Total Disgust is controlled for. Total Disgust has an unstandardized coefficient of -1.85 (SE = 3.04), but it is not statistically significant ($t = -0.60$, $p = .544$). In this model, the constant term is 42.07 (SE = 8.24), and it is statistically significant ($t = 5.10$, $p < .001$).

Table 7 Descriptive statics for Total Adults

	Mean	St. Deviation	N
Empathy	40.60	9.04	300
Total Disgust	2.20	.54	300
Attitude	71.81	21.57	300

Table 7 shows Descriptive statistics of Total Adults for variables Empathy, Total Disgust and Attitude. The table shows the means, standard deviation, and sample size. For empathy the mean score for total adults was 40.60 (SD = 9.04) respectively, showing that adults have moderate levels of empathy. For total disgust the mean was 2.20 (SD = .54) respectively, showing that participants reported a low level of total disgust. For Attitude mean was 71.81 (SD = 21.57) respectively, which shows attitude among adults differ significantly. The results infer that adults in the study have a moderate level of empathy, a low level of total disgust, and a diverse range of attitudes

Table 8 Correlation for Total Adults

	Attitude	Empathy	Total Disgust
Attitude	1.00		
Empathy	.528	1.00	
Total Disgust	.214	.152	1.00

Table 8 shows correlation for total adults. There is a ($r=.528$, $p<.001$) positive correlation between Attitude and Empathy. This indicates a moderate relationship, implying that people with more positive attitudes have higher levels of empathy. The correlation coefficient between Attitude and Total Disgust is ($r=.214$, $p<.05$). This indicates a weak positive association, implying that people with more positive attitudes have slightly higher levels of total disgust. Similarly, the correlation between Empathy and Total Disgust is ($r=.152$, $p<.05$), indicating a marginally positive

relationship. This implies that people with higher levels of empathy may also have higher levels of total disgust.

Table 9 Regression analysis for Total Adults

Model	Unstandardize d B	Coefficient St. Error	Standardized Coefficient Beta	t	Sig
1. Constant	20.72	4.88		4.24	.000
Empathy	1.25	.11	.52	10.72	.000
2. (Constant)	10.78	6.00		1.79	0.73
Empathy	1.20	.117	.50	10.29	.000
Total Disgust	5.41	1.94	.13	2.784	.006

Table 9 shows regression analysis for total adults. The unstandardized coefficient (B) for Empathy is 1.25 (SE = .11), indicating that for every one-unit increase in Empathy, the outcome variable, Model, increases by 1.25 units on average. Empathy has a standardized coefficient beta of .52, implying that it explains 52% of the variance in Model. Empathy has a t-value of 10.72, indicating that the relationship between Empathy and Model is statistically significant ($p < .001$). In this model, the constant term is 20.72 (SE = 4.88), which represents the expected value of Model when Empathy is zero. The constant term is statistically significant as well ($t = 4.24$, $p < .001$). Empathy and Total Disgust are both listed as predictors. Empathy's unstandardized coefficient remains constant at 1.20 (SE = .117), indicating that its relationship with Model is consistent across models. The standardized coefficient beta for Empathy remains at .50, indicating that Empathy explains 50% of the variance in Model when Total Disgust is controlled for. Total Disgust has an unstandardized coefficient of 5.41 (SE = 1.94), implying that for every unit increase in Total Disgust, there is an average increase of 5.41 units in Model. Total Disgust has a statistically significant coefficient ($t = 2.784$, $p = .006$). In this model, the constant term is 10.78 (SE = 6.00), and it is not statistically significant ($t = 1.79$, $p = 0.073$).

Table 10 Independent Sample t-Test

Variable	Equal variance assumed	Mean Diff.	Equal Variance not assumed	t- value
	df		St. Error	
Empathy	2.98	8.83	.91	9.6
	2.80	8.83	.91	9.6
Total Disgust	298	.36	.05	6.14
	297.34	.36	.05	6.14
Attitude	298	29	1.84	15.71
	256.81	29	1.84	15.71

Table 10 Shows Independent sample t- test for Total adults. When assuming equal variances, the t-test revealed a significant difference between groups for the variable Empathy ($t(2.98) = 9.6$, $p < .001$). The mean difference between groups in Empathy scores was 8.83, with a standard error of .91. Similarly, there was a significant difference ($t(2.80) = 9.6$, $p < .001$) for Empathy under the equal variance not assumed condition, with the same mean difference of 8.83 and standard error of .91. The t-test revealed a significant difference between groups for the variable Total Disgust, assuming equal variances ($t(298) = 6.14$, $p < .001$). The standard error for the mean difference in Total Disgust scores was .36. The t-test still showed a significant difference ($t(297.34) = 6.14$, $p < .001$) under the equal variance not assumed condition for Total Disgust, with the same mean difference of .36 and standard error of .05. The t-test revealed a significant difference between the groups for the variable Attitude, assuming equal variances ($t(298) = 15.71$, $p < .001$). With a standard error of 1.84, the mean difference in Attitude scores was 29. Similarly, with the same mean difference of 29 and standard error of 1.84, there was still a significant difference ($t(256.31) = 15.71$, $p < .001$) under the equal variance not assumed condition for Attitude. Overall, the results

show significant differences in Empathy, Total Disgust, and Attitude between the groups. The t-values and p-values indicate the significance of the differences, whereas the mean differences and standard errors indicate the magnitude and precision of the differences between groups.

Table 11 Descriptive Statistics for young adults

		N	Mean	St. Deviatio n	Std. Error	Lower bound	Upper bound
Empathy	Control	30	48.06	5.00	.91	46.19	49.93
	Disgust	30	45.76	6.57	1.20	43.31	48.22
	Gay	30	47.83	7.10	1.29	45.18	50.48
	LBT	30	36.26	7.39	1.34	33.50	39.02
	Total	120	44.48	8.10	.74	43.01	45.94
TotalD	Control	30	2.02	.50	.09	1.83	2.21
	Disgust	30	2.56	.50	.09	2.38	2.75
	Gay	30	2.56	.59	.10	2.34	2.79
	LBT	30	2.88	.33	.06	2.76	3.01
	Total	120	2.51	.57	.05	2.40	2.61
Attitude	Control	30	94.9	4.27	.78	93.33	96.52
	Disgust	30	85.73	14.46	2.64	80.33	91.13
	Gay	30	87.16	13.24	2.41	82.22	92.11
	LBT	30	67.60	12.42	2.68	62.96	72.23
	Total	120	83.85	15.39	1.40	81.07	88.64

Table 11 shows Descriptive Statistics of four groups: Control, disgust, gay, lgbt and in total with variables Empathy, Total Disgust and Attitude. For Empathy in Control group the mean score was 48.06(SD = 5.00), for Disgust the mean score was 45.76(SD = 6.57), For Gay group the mean score was 47.83(SD = 7.10), For LGBT group the mean score was 36.26 (SD = 7.39). And in total of all 4 groups the mean score for empathy was 44.48(SD = 8.10).For Total Disgust in Control group the mean score was 2.02 (SD = .50), For disgust group the mean was 2.56(SD = .50), For Gay group the mean score was 2.56(SD = .59), For LGBT group the mean was 2.88(SD = .33). And in total of 4 group the mean for Total Disgust was 2.51(SD = .57)

For Attitude in Control group the mean score was 94.9 (SD = 4.27), for Disgust group the mean score was 85.75 (SD = 14.46), For Gay group the mean score was 87.16 (SD = 13.24), for LGBT group the mean score was 67.60 (SD = 12.42).And in total for four group the mean for Attitude

was 83.85(SD = 15.39). These findings indicate that the four groups differ in terms of empathy, total disgust, and attitude scores.

Table 12 Analysis of Variance (ANOVA) for Young Adults

		Sum of squares	df	Mean Square	F	Sig.
Empathy	Between Groups	2796.70	3	932.23	21.51	0.00
	Within Groups	5027.26	116	43.33		
	Total	7823.96	119			
Total Disgust	Between Groups	11.63	3	3.87	15.94	0.00
	Within Groups	28.22	116	.24		
	Total	39.86	119			
Attitude	Between Groups	12043.49	3	4014.49	28.81	0.00
	Within Groups	16159.10	116	139.30		
	Total	28202.59	119			

Table 12 shows the one-way ANOVA conducted to examine the empathy, Total Disgust, and Attitude across the four groups that are control, disgust, gay, and LGBT. Empathy, attitude and disgust scores are significantly different across disgust, gay, control and LGB groups. It means that the empathy scores of the different groups being compared differ significantly., $F(3, 116) = 21.511, p < 0.001$., $F(3, 116) = 15.94, p < 0.001$. $F(3, 116) = 4014.49, p < 0.001$.

Table 13: Table Tukey's (HSD) post hoc for young adults

D.V		(I)Group	(J) Group	Mean Difference	St. Error	Sig.	Lower Bound	Upper Bound	
Empathy	Tukey HSD	Control	Disgust	2.30	1.69	.531	-2.13	6.73	
			Gay	.233	1.69	.999	-4.19	4.66	
			LBT	11.80	1.69	.000	7.36	16.23	
		Disgust	Control	-2.30	1.69	.531	-6.73	2.13	
			Gay	-2.06	1.69	.618	-6.49	2.36	
			LBT	9.50	1.69	.000	5.06	13.93	
		Gay	Control	-.233	1.69	.999	-4.66	4.19	
			Disgust	2.0	1.69	.618	-2.36	6.49	
			LBT	11.56	1.69	.000	7.13	15.99	
	LBT	Control	-11.80	1.69	.000	-16.23	-7.36		
		Disgust	-9.50	1.69	.000	-13.93	-5.06		
		Gay	-11.56	1.69	.000	-15.99	-7.13		
	Bonferroni	Control	Disgust	2.30	1.69	1.00	-2.26	6.86	
			Gay	.233	1.69	1.00	-4.32	4.79	
			LBT	11.80	1.69	.000	7.23	16.36	
		Disgust	Control	-2.30	1.69	1.00	-6.86	2.26	
			Gay	-2.0	1.69	1.00	-6.62	2.49	
			LBT	9.50	1.69	.000	4.93	14.06	
		Gay	Control	-.23	1.69	1.00	-4.79	4.32	
			Disgust	2.06	1.69	1.00	-2.49	6.62	
			LBT	11.56	1.69	.000	7.00	16.12	
	LBT	Control	-11.80	1.69	.000	-16.36	-7.23		
		Disgust	-9.50	1.69	.000	-14.06	-4.93		
		Gay	-11.56	1.69	.000	-16.12	-7.00		
	Total D	Tukey HSD	Control	Disgust	-.54	.127	.000	-.87	-.21
				Gay	-.54	.127	.000	-.88	-.21
				LBT	-.86	.127	.000	-1.19	-.53

		Disgust	Control	.54	.12	.000	.21	.87
			Gay	-.00	.12	1.00	-.33	.33
			LBT	.31	.12	.066	-.65	.01
		Gay	Control	.54	.12	.000	.216	.88
			Disgust	.000	.12	1.00	-.33	.33
			LBT	-.31	.12	.066	-.64	.01
		LBT	Control	.86	.12	.000	.53	1.19
			Disgust	.31	.12	.066	-.01	.65
			Gay	.31	.12	.066	-.01	.64
	Bonferroni	Control	Disgust	.54	.12	.000	-.88	-.20
			Gay	.54	.12	.000	-.88	-.20
			LBT	.86	.12	.000	-1.20	-.52
		Disgust	Control	.54	.12	.000	.20	.88
			Gay	-.00	.12	1.00	-.34	.34
			LBT	-.31	.12	.084	-.65	.02
		Gay	Control	.54	.12	.000	.20	.88
			Gay	.00	.12	1.00	-.34	.34
			LBT	-.31	.12	.084	-.65	.02
		LBT	Control	.86	.12	.000	.52	1.20
			Disgust	.31	.12	.084	-.023	.65
			Gay	.31	.12	.084	-.02	.65
Attitude	Tukey HSD	Control	Disgust	9.20	3.04	.016	1.25	17.14
			Gay	7.76	3.04	.058	-.17	15.71
			LBT	27.33	3.04	.000	19.38	35.27
		Disgust	Control	-9.20	3.04	.016	-17.14	-1.25
			Gay	-1.43	3.04	.965	-9.37	6.51
			LBT	18.13	3.04	.000	10.18	26.07
		Gay	Control	-7.7	3.04	.058	-15.71	.17
			Disgust	1.4	3.04	.965	-6.51	9.37
			LBT	19.56	3.04	.000	11.62	27.51
		LBT	Control	-27.33	3.04	.000	-35.27	-19.38

		Disgust	-18.13	3.04	.000	-26.07	-10.18
		Gay	-19.56	3.04	.000	-27.51	-11.62
Bonferroni	Control	Disgust	9.20	3.04	.019	1.01	17.38
		Gay	7.76	3.04	.073	-.41	15.94
		LBT	27.33	3.04	.000	19.15	35.51
	Disgust	Control	-9.20	3.04	.019	-17.38	-1.01
		Gay	-1.43	3.04	1.00	-9.61	6.74
		LBT	18.13	3.04	.000	9.95	26.31
	Gay	Control	-7.76	3.04	.073	-15.94	.41
		Disgust	1.43	3.04	1.00	-6.74	9.61
		LBT	19.56	3.04	.000	11.38	27.74
	LBT	Control	-27.33	3.04	.000	-35.51	-19.15
		Disgust	-18.13	3.04	.000	-26.31	-9.95
		Gay	-19.56	3.04	.000	-27.74	-11.38

Table 13 shows Tukey's (HSD) post-hoc test which was conducted to examine the pairwise differences among four groups. The Control group scores significantly higher on empathy than the Disgust and LGBT groups. When compared to the other groups, the Control group has significantly higher Total Disgust scores. In terms of Total Disgust scores, the Disgust, Gay, and LGBT groups do not differ significantly.

Table 14 Descriptive statics for older adults

		N	Mean	St. Deviation	Std. Error	Lower bound	Upper bound
Empathy	Control	30	31.90	4.04	.73	30.38	33.41
	Disgust	30	31.36	3.67	.67	429.99	32.73
	Gay	30	34.16	4.94	.90	32.31	36.01
	LBT	30	32.50	4.17	.76	30.94	34.05
	Total	120	32.48	4.31	.39	31.70	33.26
TotalD	Control	30	1.50	.19	.03	1.43	1.57
	Disgust	30	2.39	.29	.05	2.28	2.50
	Gay	30	2.40	.35	.15	2.33	2.54
	LBT	30	2.46	.49	.06	2.33	2.59
	Total	120	2.20	4.9	.04	2.11	2.28
Attitude	Control	30	92.96	4.27	.89	91.13	94.79
	Disgust	30	77.93	10.48	1.91	74.01	81.84
	Gay	30	61.46	6.57	1.20	59.01	63.92
	LBT	30	53.40	4.32	.79	51.78	55.06
	Total	120	71.44	16.80	1.53	68.40	74.47

Table 14 shows Descriptive Statistics of four groups in older adults: Control, disgust, gay, lbt and in total with variables Empathy, Total Disgust and Attitude. For Empathy in Control group the mean score was 31.90(SD = 4.40), for Disgust the mean score was 31.36(SD = 3.67), For Gay group the mean score was 34.16(SD = 4.94), For LGBT group the mean score was 32.50 (SD = 4.17). And in total of all 4 groups the mean score for empathy was 32.48(SD = 4.31). For Total Disgust in Control group the mean score was 1.50 (SD = .19), For disgust group the mean was 2.39(SD = .29),

For Gay group the mean score was 2.44(SD = .29), For LGBT group the mean was 2.46(SD = .35). And in total of 4 groups the mean for Total Disgust was 2.20(SD = .49).

For Attitude in Control group the mean score was 92.96 (SD = 4.90), for Disgust group the mean score was 77.93 (SD = 10.48), For Gay group the mean score was 61.46 (SD = 6.57), for LGBT group the mean score was 53.40 (SD = 4.32). And in total for four group the mean for Attitude was 71.44(SD = 16.80). The findings show that empathy, total disgust, and attitude scores differ across groups.

Table 15 Analysis of Variance (ANOVA) for Young Adults

		Sum of squares	df	Mean Square	F	Sig.
Empathy	Between Groups	132.63	3	44.21	2.46	.06
	Within Groups	2081.33	116	17.94		
	Total	2213.96	119			
Total Disgust	Between Groups	19.38	3	6.46	76.30	0.00
	Within Groups	9.82	116	.08		
	Total	29.21	119			
Attitude	Between Groups	27914.09	3	9304.69	190.04	0.00
	Within Groups	5679.50	116	48.96		
	Total	33593.59	119			

Table 15 shows the one-way Anova conducted to examine the empathy, Total Disgust and Attitude across the four groups that are control, disgust, gay and lbt. Empathy: There was no statistically significant difference between groups in empathy scores ($F(3, 116) = 2.46, p = .066$). While there is some evidence of differences in empathy scores between groups, the observed difference did not reach statistical significance, according to these findings. For Total Disgust: The difference in total disgust scores between groups was statistically significant ($F(3, 116) = 76.309, p < .001$). These findings indicate that there are statistically significant differences in total disgust scores between the groups. For Attitude: The difference in attitude scores between groups was statistically significant ($F(3, 116) = 190.042, p < .001$). These findings show significant differences in attitude scores between groups, with statistically significant differences observed.

Table 16 . Tukey's post hoc test of older adults

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Empathy	Control	Disgust	.533	1.09369	.962	-2.3176	3.3842
		Gay	-2.26	1.09369	.168	-5.1176	.5842
		LGBT	-.60	1.09369	.947	-3.4509	2.2509
	Disgust	Control	-.53	1.09369	.962	-3.3842	2.3176
		Gay	2.80000	1.09369	.056	-5.6509	.0509
		LGBT	-1.13333	1.09369	.729	-3.9842	1.7176
	Gay	Control	2.26667	1.09369	.168	-.5842	5.1176
		Disgust	2.80000	1.09369	.056	-.0509	5.6509
		LGBT	1.66667	1.09369	.427	-1.1842	4.5176
	LGBT	Control	.60000	1.09369	.947	-2.2509	3.4509
		Disgust	1.13333	1.09369	.729	-1.7176	3.9842
		Gay	1.66667	1.09369	.427	-4.5176	1.1842
TotalD	Control	Disgust	-.88533*	.07514	.000	-1.0812	-.6895
		Gay	-.93467*	.07514	.000	-1.1305	-.7388
		LGBT	-.95867*	.07514	.000	-1.1545	-.7628
	Disgust	Control	.88533*	.07514	.000	.6895	1.0812
		Gay	-.04933	.07514	.913	.2452	.1465
		LGBT	-.07333	.07514	.763	-.2692	.1225
	Gay	Control	.93467*	.07514	.000	.7388	1.1305
		Disgust	.04933	.07514	.913	.1465	.2452
		LGBT	.02400	.07514	.989	-.2199	.1719
	LGBT	Control	.95867*	.07514	.000	.7628	1.1545
		Disgust	.07333	.07514	.763	.1225	.2692
		Gay	.02400	.07514	.989	-.1719	.2199
Attitude	Control	Disgust	15.03333*	1.80668	.000	10.3239	19.7427
		Gay	31.50000*	1.80668	.000	26.7906	36.2094
		LGBT	39.56667*	1.80668	.000	34.8573	44.2761

Tukey HSD

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound

Disgust	Control	-15.03333*	1.80668	.000	-19.7427	-10.3239
	Gay	16.46667*	1.80668	.000	11.7573	21.1761
	LGBT	24.53333*	1.80668	.000	19.8239	29.2427
Gay	Control	-31.50000*	1.80668	.000	-36.2094	-26.7906
	Disgust	-16.46667*	1.80668	.000	-21.1761	-11.7573
	LGBT	8.06667*	1.80668	.000	3.3573	12.7761
LGBT	Control	-39.56667*	1.80668	.000	-44.2761	-34.8573
	Disgust	-24.53333*	1.80668	.000	-29.2427	-19.8239
	Gay	-8.06667*	1.80668	.000	-12.7761	-3.3573

Table 16 shows Tukey's post-hoc test for older adults Empathy: There were no statistically significant differences in Empathy scores between the control, disgust, and LGBT groups.

Tota Disgust: Total Disgust scores differed statistically significantly between all pairs of groups: control-disgust, control-LGBT, and disgust-LGBT. The Control group performed significantly better than the Disgust and LGBT groups. For Attitude: All pairs of groups had statistically significant differences in Attitude scores: Control-Disgust, Control-LGBT, and Disgust-LGBT. The Control group performed significantly better than the Disgust and LGBT groups.

CHAPTER 6: DISCUSSION

The study aims to investigate empathy and disgust as predictors of attitudes towards homosexuals. In this study, there were six hypotheses of which two are rejected, one was partially accepted, and three were accepted.

6.1 Disgust will predict attitudes towards homosexuals in young and older adults.

It was hypothesized that disgust will predict attitudes towards homosexuals in young and older adults. When a regression analysis was done for younger adults and (Table 3) for older adults (Table 6), it was seen that disgust is neither predicting attitude in younger adults nor its older adults toward attitude homosexuals. There is no relationship between total disgust and attitude. Olatunji et al. (2007) investigated the relationship between disgust propensity (a dispositional proclivity to experience disgust) and attitudes toward various objects and behaviors in young adults. The study found no statistically significant relationship between disgust propensity and attitudes, implying that the experience of total disgust does not necessarily influence or predict attitudes in young adults. Disgust's Differential Influence on Specific Attitudes. Although there is no overall relationship between total disgust and attitude, Tybur et al. (2009) research suggests that disgust may selectively influence specific attitudes related to domains that elicit disgust responses, such as hygiene or moral violations. This suggests that, while there may not be a general relationship between total disgust and attitude, disgust experiences may still influence certain attitudes associated with disgust-relevant domains. Moral Foundations are Mediating Factors. According to moral foundations theory, different moral foundations shape attitudes and judgments, including purity/sanctity, which is closely related to disgust. However, Koleva et al. (2012) found that while disgust influences purity/sanctity-related attitudes, they do not mediate the relationship between disgust sensitivity and attitudes in general. This adds to the evidence that there is no broad relationship between total disgust and attitude in young adults. Disgust's Differential Influence on Specific Attitudes, although there is no overall relationship between total disgust and attitude, research by Inbar et al. (2012) suggests that disgust may selectively influence specific attitudes in older adults related to moral judgments and cleanliness concerns. This suggests that, while there may not be a general relationship between total disgust and attitude, disgust experiences may still influence certain attitudes associated with disgust-relevant domains. Cognitive Appraisal and

Values are Mediating Factors, in older adults, cognitive appraisal processes and personal values may mediate the relationship between total disgust and attitude. Erskine et al. (2011) discovered that individuals' cognitive appraisals of disgust-inducing stimuli, as well as their personal values, play important roles in shaping attitudes. This suggests that cognitive interpretations and value systems, rather than total disgust itself, influence attitude formation and judgment in older adults, emotional regulation processes may also contribute to the lack of correlation between total disgust and attitude. According to Carstensen et al. (2011), older adults prioritize positive emotional experiences and engage in emotion regulation strategies, which may reduce the influence of disgust on attitudes. This demonstrates the potential role of emotional regulation in reducing the impact of total disgust on attitude formation in older adults.

Hence the results were not significant and the hypothesis got rejected. Therefore, Disgust doesn't predict attitudes in younger and older adults towards homosexuals.

6.2 Disgust, Attitude, and Empathy significantly differ across young adults and older adults

It was hypothesized that disgust, attitude, and empathy significantly differ across young adults and older adults. Independent sample t-Test was done (Table 11), and there was a difference seen. Gruhn, Scheibe, and Baltes (2007) conducted research on age-related differences in emotional reactivity, including disgust, across adulthood. They discovered that older adults have lower emotional reactivity, including lower disgust responses, than younger adults. These findings imply that emotional processing changes with age, which influences the intensity of disgust experiences. Empathy, or the ability to understand and share the emotions of others, is an important aspect of social interaction. Gruhn and colleagues (2013) used self-report measures and behavioral observations to investigate age differences in empathy. According to the findings, older adults reported higher levels of empathy than young adults. Behavioral observations, on the other hand, suggested that young adults were more accurate in perceiving and responding to the emotional states of others. This suggests that young and old adults may have different subjective experiences and behavioral expressions of empathy. Krosnick and Alwin (1989) investigated the development of political attitudes across the lifespan. They discovered that young adults are more open to changing their attitudes and are influenced by external sources such as peers, media, and

educational experiences. In contrast, older adults have more stable attitudes, which are often shaped by long-term socialization processes.

6.3 There will be no significant difference in disgust across gays and LBT

It was hypothesized that there is no significant difference in disgust across gay and LBT group. Turkey's post hoc analysis (Table 14&17) was done to see pairwise comparisons of each group. It was seen that there is a significant difference in disgust across gay and LBT. Individual differences in personal attitudes and disgust sensitivity may account for the significant differences in total disgust scores among groups exposed to various types of images. According to Haidt et al. (1997), individuals differ in their personal attitudes and sensitivity to disgust. Individual differences in disgust sensitivity, as well as attitudes toward gays or LGBTQ people, may influence the intensity of disgust experienced, resulting in significant differences in total disgust scores. Familiarity with a specific group or category may influence disgust responses and contribute to differences in total disgust scores observed. According to Cottrell and Neuberg (2005), exposure to images of specific groups, such as gays or LGBTQ people, may elicit stronger disgust responses among people who are unfamiliar with or have negative attitudes toward that group. Familiarity may heighten the disgust experience, resulting in significant differences in total disgust scores.

Hence the results were not significant, and the hypothesis is rejected. Therefore, there is a significant difference in disgust across gays and LBT group.

6.4 There will be a significant difference in attitude across gay and LBT

It was hypothesized that there is a significant difference in attitude across gay and LBT groups. And when Turkey's post hoc analysis (Table 14&17) was done it is seen that different groups had different attitude scores toward homosexuals. According to Fazio et al. (1992), emotional priming via exposure to specific images may activate related attitudes, resulting in significant differences in attitude scores. Disgusting images or images of LGBTQ people may elicit emotional responses that activate disgust-related attitudes or attitudes toward LGBTQ people, resulting in significant differences in attitude scores when compared to neutral images. Stereotype activation and attitude bias may contribute to the observed differences in attitude scores. Research by Devine (1989)

indicates that exposure to images of gays or LGBTQ individuals may activate stereotypes or preexisting attitudes, which can influence subsequent attitudes. Positive or negative stereotypes associated with LGBTQ individuals may lead to variations in attitudes, resulting in significant differences in attitude scores. Individual differences in personal beliefs and values may account for the significant differences in attitude scores observed among groups exposed to various types of images. According to Eagly and Chaiken (1993), individuals have distinct beliefs and values that shape their attitudes. Personal beliefs or values concerning disgust, sexual orientation, or LGBTQ rights may influence attitudes toward disgusting images or images of gays and LGBTQ people, resulting in significant differences in attitude scores. The observed differences in attitude scores may be explained by cognitive processing and persuasion strategies. According to Petty and Cacioppo (1986), cognitive processing of persuasive messages can influence attitudes. Exposure to emotional images may activate various cognitive processes, influencing the formation of attitudes. The images' persuasive power, combined with cognitive processing, may lead to significant differences in attitude scores.

Hence the results were significant and the hypothesis is accepted. Therefore, there exists a significant difference in attitude across gay and lbt groups.

6.5 There will be a significant difference in empathy across gay and LBT

It was hypothesized that there is a significant difference in empathy across gay and lbt. When Turkey's post hoc test was analyzed (Table 14&17), it was seen that there exists a significant empathy across gay and lbt groups. According to Hatfield et al. (1994), emotional contagion, or the automatic mimicry of other people's emotions, may explain the significant differences in empathy scores. Because of the salience and distinctiveness of these stimuli, disgusting images or images depicting LGBTQ individuals may elicit stronger emotional responses, leading to higher empathy scores when compared to neutral images. Differences in empathy scores may be explained by stereotype activation and empathetic bias. According to Dovidio et al. (2010), exposure to images of gays or LGBTQ people can activate stereotypes or preconceived notions, which can influence empathetic responses. Positive or negative stereotypes about LGBTQ people can lead to varying levels of empathy, resulting in significant differences in empathy scores. Familiarity with a specific group or category may influence empathetic responses and contribute to observed empathy differences. According to Cuddy et al. (2007), exposure to images of specific

groups, such as LGBTQ people, may elicit stronger empathetic responses among people who have personal or social connections with that group. Individuals' ability to understand and empathize with the experiences of others may be enhanced by familiarity, resulting in higher empathy scores. Individual differences in emotional regulation and disgust sensitivity may account for the significant differences in empathy scores observed between groups exposed to different types of images. According to Rozin et al. (2008), individuals differ in their sensitivity to disgust and ability to regulate emotions. Individuals with higher disgust sensitivity may experience stronger emotional responses to disgusting images, influencing their empathy scores.

Hence, the results are partially accepted. Therefore, it is seen that there exists a significant change in empathy across gay and lbt groups.

CHAPTER 7: CONCLUSION, LIMITATIONS AND FUTURE IMPLICATIONS

7.1 Conclusion

The aim of the study is to investigate empathy and disgust as predictors of attitude toward homosexuals. In conclusion, empathy serves as a critical moderator between disgust and attitudes toward homosexuals. While disgust is commonly associated with negative attitudes towards homosexuals, empathy can intervene and lessen the impact of disgust, resulting in more positive attitudes and less prejudice. According to research, people with higher levels of empathy are better able to understand and share the feelings of others (Davis, 1996). This empathic ability enables people to move past their initial disgust and adopt a more compassionate attitude toward homosexuals. By promoting understanding, acceptance, and recognizing the shared humanity of individuals regardless of sexual orientation, empathy can counteract the negative influence of disgust on attitudes toward homosexuals. According to Batson et al. (1999), older adults are more likely to engage in prosocial behaviors and have higher levels of altruism. Their increased empathetic responses may fuel their prosocial motivation, resulting in more positive attitudes toward others, therefore it supports our results where we found that empathy has a moderating effect on the attitude of older adults. Empathy, as a result, becomes an essential component in promoting positive attitudes and creating a more inclusive society.

The experiments were conducted, the results indicated that Empathy scores were significantly different due to between groups, according to Dovidio et al. (2010), exposure to images of gays or LGBTQ people can activate stereotypes or preconceived notions, which can influence empathetic responses. Positive or negative stereotypes about LGBTQ people can lead to varying levels of empathy, resulting in significant differences in empathy scores. There was a significant difference among the scores of Total disgust was also seen. Due to the between-group design, all four groups had different levels of disgust signifying that exposure to different sets of images elicited different responses. According to Cottrell and Neuberg (2005), exposure to images of specific groups, such as gays or LGBTQ people, may elicit stronger disgust responses among people who are unfamiliar

with or have negative attitudes toward that group. Familiarity may heighten the disgust experience, resulting in significant differences in total disgust scores.

There was a significant difference to see in the attitude towards homosexuals. Due to between-group design. According to Fazio et al. (1992), emotional priming via exposure to specific images may activate related attitudes, resulting in significant differences in attitude scores. Disgusting images or images of LGBTQ people may elicit emotional responses that activate disgust-related attitudes or attitudes toward LGBTQ people, resulting in significant differences in attitude scores when compared to neutral images. Stereotype activation and attitude bias may contribute to the observed differences in attitude scores. The significant difference in attitudes between the two age groups demonstrates the influence of age, cognitive changes, socio-cultural context, and life experiences on attitude formation and expression. Understanding these differences allows society to promote intergenerational understanding, empathy, and effective communication across age groups.

7.2 Limitations and future implications

Studies were done in different setting for both the groups I.e., younger and older adults. This makes it difficult for two groups to compare particularly in case of experiment. Due to the unequal distribution of males and females, gender differences couldn't be seen. Heart Rate variability, facial electromyography along with the questionnaires would have given stronger results. Only one visual stimulus was used research suggests that multi modal stimuli is much more effective.

Campaigns should focus more on developing empathy in the target audience.

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APPENDIX A: INFORMED CONSENT

Study title: Empathy and Disgust as predictors of Attitude towards Homosexuals.

The overall experiment will have 3 stages. First participants will be given a news article to read. In the second phase, they will be shown a ppt with 20 slides. And at last, they will be asked to fill out the questionnaire.

- Participation in the study is completely voluntary.
- Data will be kept confidential and the subject's identity will be protected.
- Subject's participation will take approximately 10-15 minutes

If you are still interested in participating and assisting with this research project, please complete the consent form below. Keep the top of this form for future reference. You can contact me at mlakhanpal_ma21@thapar.edu if you have questions, comments, or concerns now or in the future about your participation in this study. Thank you very much for your time and consideration.

Subject's Demographic details:

Name: _____

Date of birth: _____ Age: _____ Gender: _____

I, _____, give my consent for the participation.

I understand that:

- My data will be used for research.
- My participation is voluntary
- My information will be kept confidential. I have read the information above and any questions I asked have been answered to my satisfaction.

I Give consent for my participation in this study. Signed: _____

Date: _____

Appendix B: Toronto Empathy Scale

Rate How you frequently feel about the following statements.

S.No.	Statements	Never	Rarely	Sometimes	Often	Always
1	When someone else is feeling excited, I tend to get excited too.	0	1	2	3	4
2	Other people's misfortunes do not disturb me a great deal	0	1	2	3	4
3	It upsets me to see someone being treated disrespectfully	0	1	2	3	4
4	I remain unaffected when someone close to me is happy	0	1	2	3	4
5	I enjoy making other people feel better	0	1	2	3	4
6	I have tender, concerned feelings for people less fortunate than me	0	1	2	3	4
7	When a friend starts to talk about his/her problem, I try to steer the conversation toward something else	0	1	2	3	4
8	I can tell when others are sad even when they do not say anything	0	1	2	3	4
9	I find that I am "in tune" with other people's moods	0	1	2	3	4

10	I do not feel sympathy for people who cause their own serious illnesses	0	1	2	3	4
11	I become irritated when someone cries	0	1	2	3	4
12	I am not really interested in how other people feel	0	1	2	3	4
13	I get a strong urge to help when I see someone who is upset	0	1	2	3	4
14	When I see Someone treated unfairly, I do not feel very much pity for them.	0	1	2	3	4
15	I find it silly for people to cry out of happiness	0	1	2	3	4
16	When I see someone being taken advantage of, I feel kind of protective towards him/her.	0	1	2	3	4

Appendix B :The Disgust Scale

Please indicate how much you agree with each of the following statements, or how true it is about you.

Please write a number (0-4) to indicate your answer: 0 = Strongly disagree (very untrue about me), 1 = Mildly disagree (somewhat untrue about me) 2 = Neither agree nor disagree, 3 = Mildly agree (somewhat true about me), 4 = Strongly agree (very true about me)

____ 1. I might be willing to try eating monkey meat, under some circumstances.

____ 2. It would bother me to be in a science class and to see a human hand preserved in a jar.

____ 3. It bothers me to hear someone clear a throat full of mucous.

____ 4. I never let any part of my body touch the toilet seat in public restrooms.

____ 5. I would go out of my way to avoid walking through a graveyard.

____ 6. Seeing a cockroach in someone else's house doesn't bother me.

____ 7. It would bother me tremendously to touch a dead body.

____ 8. If I see someone vomit, it makes me sick to my stomach.

____ 9. I probably would not go to my favorite restaurant if I found out that the cook had a cold.

____ 10. It would not upset me at all to watch a person with a glass eye take the eye out of the socket.

____ 11. It would bother me to see a rat run across my path in a park.

____ 12. I would rather eat a piece of fruit than a piece of paper

___ 13. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.

___ 14. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart attack in that room the night before.

How disgusting would you find each of the following experiences?

Please write a number (0-4) to indicate your answer: 0 = Not disgusting at all, 1 = Slightly disgusting, 2 = Moderately disgusting, 3 = Very disgusting 4 = Extremely disgusting.

___ 15. You see maggots on a piece of meat in an outdoor garbage pail.

___ 16. You see a person eating an apple with a knife and fork

___ 17. While you are walking through a tunnel under a railroad track, you smell urine.

___ 18. You take a sip of soda and then realize that you drank from the glass that an acquaintance of yours had been drinking from.

___ 19. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.

___ 20. You see someone put ketchup on vanilla ice cream, and eat it.

___ 21. You see a man with his intestines exposed after an accident.

- ____22. You discover that a friend of yours changes underwear only once a week.
- ____23. A friend offers you a piece of chocolate shaped like dogdoo.
- ____24. You accidentally touch the ashes of a person who has been cremated.
- ____25. You are about to drink a glass of milk when you smell that it is spoiled
- ____26. As part of a sex education class, you are required to inflate a new unlubricated condom, using your mouth.
- ____27. You are walking barefoot on concrete, and you step on an earthworm.

APPENDIX C: Attitude towards Homosexual Scale for Indians

Please read each statement below carefully and rate how frequently. Circle your answer on the response form. There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

(1) for Strongly disagree (SD); (2) for Disagree(D); (3) for Neutral(N); (4) for Agree(A); (5) for Strongly agree.

	Statements	SD	D	N	A	SA
1	Homosexuality is abnormal	1	2	3	4	5
2	I avoid contact with homosexuals whenever I can	1	2	3	4	5
3	Homosexuals do not deserve to attend religious ceremonies or enter places of worship	1	2	3	4	5
4	Homosexuals are as normal as heterosexuals	1	2	3	4	5
5	I would like to participate in gay parades like Delhi Queer Pride Parade	1	2	3	4	5
6	I find it hard to understand how somebody could be attracted to someone of the same sex	1	2	3	4	5
7	In friendship, a person's nature is more important than his or her sexual orientation	1	2	3	4	5
8	Homosexuals should be given equal status in the society	1	2	3	4	5
9	If I was an employer, I would not hire a homosexual	1	2	3	4	5

10	Lesbian women are not real women	1	2	3	4	5
11	If any child's teacher was homosexual, I would complain to the school authorities	1	2	3	4	5
12	It would not bother me if I found out that my sibling was a homosexual	1	2	3	4	5
13	Demonstrations and marches supporting homosexuality should be banned	1	2	3	4	5
14	I would not mind supporting an organization that supports LGBT rights	1	2	3	4	5
15	I would be happy to attend a same-sex marriage	1	2	3	4	5
16	Acceptance of homosexuality is eroding the morals and values of our Indian society	1	2	3	4	5
17	Homosexual marriages are unacceptable to me	1	2	3	4	5
18	I would not hesitate to hug a person of the same sex, even if I knew she or he is a homosexual	1	2	3	4	5

19	Every person should have the right to love whosoever they want irrespective of their sex	1	2	3	4	5
20	I would not mind hanging out with a homosexual friend	1	2	3	4	5

