Ecospirituality: A New Pathway to Cope with Students' Depression, Anxiety and Stress

A thesis submitted to Jadavpur University for the
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Doctor of Philosophy in Arts (Education)

Submitted by
Sheikh Imran Pervez

Under the supervision of
Prof. (Dr.) Muktipada Sinha

Department of Education
Jadavpur University
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DEDICATED TO MY PARENTS

CERTIFICATE

This is to certify that the thesis titled **"Ecospirituality: A New Pathway to Cope with Students' Depression, Anxiety and Stress"** submitted by me for the award of the Degree of Doctor of Philosophy in Arts (Education) at Jadavpur University is based on the research I conducted under the guidance of Dr. Muktipada Sinha who is a professor at the Department of Education in Jadavpur University.

This thesis as a whole, or any part of it, has not been previously submitted for any degree or diploma, either here or elsewhere.

Countersigned by **Sheikh Imran Pervez**

Date:

[Prof. (Dr.) Muktipada Sinha]

Supervisor

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Date: **Sheikh Imran Pervez**

Place: Kolkata.

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AMOS Analysis of Moment Structures

ANOVA Analysis of Variance

APA American Psychological Association

AS Anxiety Score

CFI Comparative Fit Index

CMIN Chi-square Value

CR Critical Ratio

df Degree of Freedom

DS Depression Score

e1 Error in Measurement

ES Ecospirituality Score

H_0 Hypothesis

IBM International Business Machines Corporation

M Mean

Mdn Median

N Total Number of Students in the Group

p Probability Value

R^2 Squared Multiple Correlation

RMSEA Root Mean Square Error of Approximation

SD Standard Deviation

Sig. Statistical Significance

SPSS Statistical Package for the Social Sciences

SS Stress Score

LIST OF ACRONYMS (Continued)

TLI Tucker-Lewis Index

ρ Spearman's Coefficient

ρ^2 Spearman's Coefficient of Determination

$\chi 2$ Chi-square Value

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Abstract

Higher education students encounter a multitude of complexities and pressures in academic as well as in other aspects of life. During this period, individuals may experience mental health issues such as anxiety, stress, and depression. Spirituality is associated with improved psychological health and wellbeing. Ecospirituality which is rooted in a strong belief in the sacredness of nature and combines spirituality with the environment, can have a substantial impact on alleviating depression, anxiety, and stress among students. The current study aimed at exploring the influence of higher education students' ecospirituality on their depression, anxiety, and stress. The current students (academic session 2023 – 2024) studying in various undergraduate courses and the present students studying in different postgraduate courses at colleges and universities in West Bengal were the target population of the study. Through purposive sampling technique, the students of the sample were selected from twenty-three districts in West Bengal. The final sample size of this research was 1289. The data collection tools included one information schedule about the student, the Ecospirituality Scale constructed by Suganthi in 2019, and the DASS-21 constructed by Lovibond and Lovibond in 1995. Results showed that ecospirituality as well as depression, anxiety, and stress were varied in terms of socio-demographic and academic characteristics of the students. The study established that ecospirituality was negatively associated with depression, as well as anxiety and stress and it also significantly predicted the depression, as well as anxiety and stress of the higher education students. The study discussed on probable causes of the variation in the research constructs. The study provided recommendations and future research directions.

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CHAPTER I

CONTEXT OF THE STUDY

'The world is not a problem to be solved; it is a living being to which we belong. The world is part of our own self and we are a part of its suffering wholeness. Until we go to the root of our image of separateness, there can be no healing. And the deepest part of our separateness from creation lies in our forgetfulness of its sacred nature, which is also our own sacred nature."

- Vaughan-Lee (2013)

CHAPTER – I CONTEXT OF THE STUDY

1.1 Introduction

Environmental disasters affect human life in various ways including physical and mental health. Over the few decades the scientific community has increased interest in how environmental changes can affect individuals and society across the globe. In this context, various areas of interest have focused on human, animal, plant health and their respective ecosystem. Within these domains, there is an increasing body of scientific evidence regarding the influence of spirituality on human physical and mental well-being, as well as its interconnectedness with the environment (Moreno - Sanchez, 2022).

Spirituality refers to a personal and subjective encounter with the sacred, that is not influenced by institutions or intermediaries (Ferguson & Tamburello, 2015). This description emphasises the fundamental concept of spirituality. The spiritual experiences are often linked to emotions such as awe and a sense of surpassing oneself (Fuller, 2007; Keltner & Haidt, 2003). The spiritual perspective on nature can be juxtaposed with the instrumental perspective on nature which regards nature as a tool to be used for solely anthropocentric utilities. This cost-benefit analysis is incongruent with a spiritual perspective on nature, as determinations regarding its conservation or utilisation are not substantiated by logical cost-benefit analysis but rather influenced by core convictions about morality (Skitka et al., 2005, 2021). Ecospirituality encompasses beliefs and actions that recognise the spiritual importance of nature and the inherent spiritual connection between humans and the natural world. Spirituality is linked to the concepts of transcendence and life's purpose, and it differs from religiosity which focuses on identification, belief, and religious rituals within a certain tradition (Fuller, 2001; Saucier

& Skrzypińska, 2006; Willard & Norenzayan, 2017). Ecospirituality encompasses beliefs and behaviours from diverse cultural, moral, philosophical, and theological backgrounds, as well as non-traditional perspectives. Therefore, ecospirituality is a separate and unique concept from religiosity.

Mental health is an essential component of one's entire state of well-being. Depression is characterised by symptoms such as a persistent poor mood, lack of interest or pleasure, feelings of guilt, low self-esteem, disrupted hunger, disrupted sleep, or difficulty concentrating. Anxiety is primarily associated with physiological responses such as autonomic arousal and skeletal muscular tension, as well as environmental factors. On the other hand, stress is primarily characterised by symptoms such as irritation, impatience, and difficulties in achieving a state of relaxation. The National Mental Health Survey of India (2015-16) unveiled that approximately 15% of Indian adults require immediate assistance for one or more mental health problems, and one out of every 20 Indians experiences depression. An article in the Times of India published on October 1, 2023, reports that a study conducted by the Schizophrenia Research Foundation in Chennai revealed that more than 30% of pupils experience anxiety and depression. Among the 15,000 pupils that were assessed, 32% exhibited moderate to severe depression, while 30% experienced anxiety. The report emphasises the pressing necessity to tackle mental health concerns among students. An article published in the Hindustan Times on October 10, 2023, discloses that a significant 51% of school-aged children and teenagers experience anxiety, social isolation, and dysphoria (Shukla, 2023). Although stress is unavoidable, it is highly widespread (Blanco et al., 2008) and increasingly common among college students (Mackenzie et al., 2011). As per an article in the Times of India (April 4, 2022), a significant 63.5% of Indian students experienced stress because of academic pressure. The detrimental consequences of depression,

anxiety, and stress underscore the significance of addressing their prevalence among college students. Depression is linked to detrimental behaviours such as smoking, poor dietary choices, sedentary lifestyle, insufficient sleep patterns, and noncompliance with medical treatment recommendations (Doom and Haeffel, 2013). Individuals afflicted with anxiety disorders also have a diminished quality of life in comparison to individuals without heightened levels of anxiety (Barrera and Norton, 2009). An extensive examination of 13 studies found that those who are pursuing higher education experience a decrease in their quality of life and well-being when they report higher levels of stress (Ribeiro et al., 2018).

The involvement in natural surroundings has played a crucial role throughout history in shaping mental health care, with contemporary theoretical perspectives emphasising its importance in healthcare. Wilson's Biophilia Hypothesis, proposed in 1984, posits that humans have an innate need to form connections with other living organisms. On the other hand, Kaplan's Attention Restoration Theory, introduced in 1995, suggests that nature can enhance well-being by improving our ability to focus our attention. Shinrin-Yoku, also known as forest bathing, is a customary Japanese ritual that entails thoroughly engaging with nature by consciously utilising all five senses (Hansen et al., 2017). There has been a growing interest in these principles over time, which has resulted in the development of the modern idea of "green prescription" or the practice of spending time in nature to promote well-being and alleviate illness (Jepson et al., 2010). The use of nature-based activities in mental health care has shown promising results. Research has explored how engaging with nature can help to alleviate stress (Marselle et al., 2019) and decrease excessive thinking (Lopes, 2020). Applications have encompassed the utilisation of outdoor mindfulness, as demonstrated by Djernis et al. (2019), and the

incorporation of nature participation as a supplementary component in conventional return-to-work rehabilitation, as explored by Sahlin et al. (2015).

1.2 Concept of Ecospirituality

The precise definitions and relationship between religion and spirituality have been the subject of ongoing dispute. In their study, Pargament et al. (2013) provides a definition of spirituality as the pursuit of the sacred, whereas religion is described as the pursuit of significance within existing institutions that aim to assist spirituality. Taylor (2009) asserts that religion is associated with institutions, while spirituality is more personal and powerful. The author states that there are certain groups of thoughts that are generally more strongly linked to spirituality rather than religion. These ideas are typically related to nature and a strong appreciation for its worth and holiness. Ecospirituality is the expression of the spiritual bond between humans and the environment. The concept of comprehending the interrelationships between all living beings on earth and recognising their interdependency, while respecting their worth for preserving ecobalance, has been discussed by Lincoln (2000) and Bonfiglio (2012). Some individuals believe that ecospirituality refers to the interrelationship between the scientific study of ecology and spirituality (Bonfiglio, 2012). While there may be variations in practices and beliefs, they all indicate the existence of a spiritual aspect in ecology (Vaughan-Lee, 2013). According to Suganthi (2019), ecospirituality can be defined as the practice of treating the environment with reverence and care while living within its boundaries. The concepts associated with this definition encompass experiencing a sense of unity with the universe, valuing one's environment, recognising the potential consequences of disrupting the ecosystem's equilibrium, comprehending

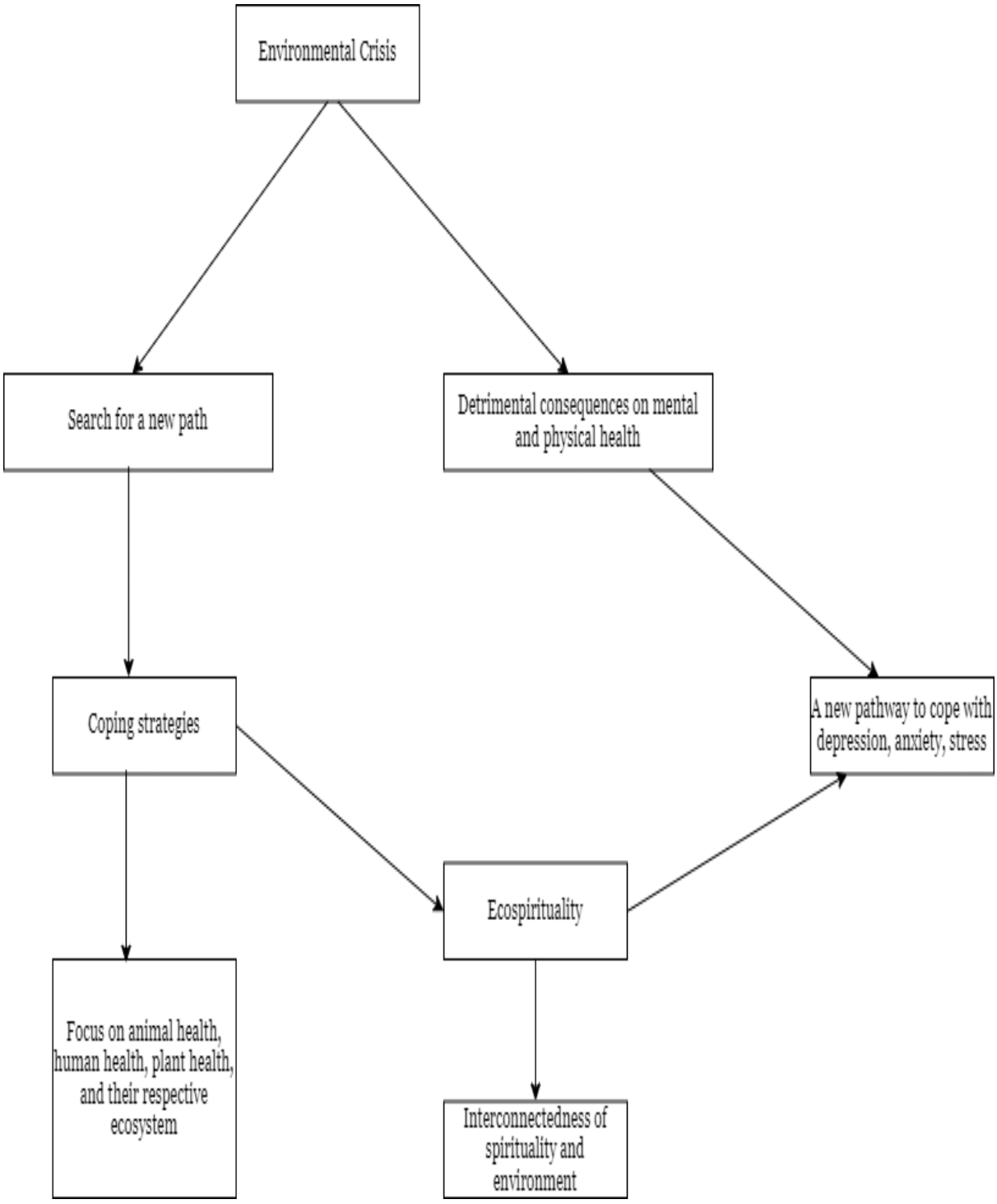
the ethical aspects, safeguarding, and preserving nature, and appreciating the wonder of comprehending the ecosystem.

Finding spiritual essence in nature originated as a structured discussion in the 1980s, at a period of turmoil in both the environmental movement and global faiths. The beginnings of this can be attributed to several philosophical perspectives, such as Spinoza's pantheistic philosophy, Romantic Naturphilosophie, and the writings of Henry David Thoreau and George Perkins Marsh. Notable individuals such as Mahatma Gandhi, Rudolf Steiner, and Carl Gustav Jung made significant contributions to the advancement of ecospirituality (Choné, 2017). Advocates of ecospirituality come from many backgrounds but have common ideals that emphasise the need to restore a sense of sacredness in our connection with environment and view the world as a living entity. This deep-seated belief, typically based on personal experiences, involves valuing nature, as well as practical knowledge and a moral dedication to safeguarding the environment and the entire globe. This existential dedication encompasses both a spiritual and therapeutic aspect, capable of promoting personal healing and contributing to the healing of the planet.

The present study has given the following conceptual framework on the basis of de Diego-Cordero et al. 2024-

Figure 1.1

Conceptual framework used in the present study



[Source: de Diego-Cordero et al. (2024). Ecospirituality and Health: A Systematic Review. *Journal of Religion and Health, 63*(2), 1285–1306]

1.2.1 Ecospiritual perspective in major Indian religions

There are number of thoughts in several bodies of literature from Hinduism, Islam, Christianity, Sikhism, Buddhism, and Jainism, which can be associated to the concept of ecospirituality.

1.2.1.1 Ecospirituality in Hinduism

The Vedic literature highlights the significance of safeguarding the nonhuman realm, specifically in the Rigveda. The Atharvaveda exhibits a strong connection with ordinary individuals and their surroundings. In ancient times, people regarded plants as their ancestors and siblings, viewing the act of cutting down trees as a sinful act and planting as a charitable deed. Agni is venerated for his role in cleansing the environment and eliminating the transgressions of the soil. The Sun is regarded as the primary provider of energy on Earth and is considered the most compassionate deity in the celestial hierarchy. In the Atharvaveda, the earth is referred to as the mother on several occasions, and the Vedic seers regarded the sun as the essence of the universe. Living organisms must coexist harmoniously as offspring of the Earth, and Indians have demonstrated affection and acceptance for other animals, treating plants as sacred beings and safeguarding the nonhuman natural environment without causing disruption. From the book 'Asian Perspectives on the World's Religions after September 11' edited by Sharma and Khanna (2013), we come to know that the Yajur Veda of 10th century BCE, contains a hymn with the following verse (10.17.1):

"There is peace in heavenly realm

There is peace in the environment

The water is cooling; herbs are healing

The plants are peace-giving

There is harmony in the celestial objects and perfection in knowledge;

Everything in the universe is peaceful

Peace pervades everywhere.

May that peace come to us!”

1.2.1.2 Ecospirituality in Islam

The Qur'an and prophetic traditions serve as the main foundations of Islamic environmental ethics, incorporating them into Islamic legal principles. The fundamental principles of Islamic ecological ethics consist of tawhid (the belief in the unity of God), khilafah (the responsibility of humans as stewards), and akhirah (the concept of the afterlife). Tawhid is the doctrine that affirms Allah as the creator of the cosmos and asserts that all aspects of existence demonstrate a fundamental unity amongst diversity. According to Muslim scholars, the universe is believed to be regulated by principles of unity, balance, and harmony. They suggest that nature serves as a source of inspiration for comprehending the actions of the Divine in the process of creation (Saniotis, 2004; Foltz et al. 2003). Khilafah is a notion in Islamic environmental ethics where the Qur'an states that mankind are responsible for taking care of Allah's creation. Khalid (1996) asserts that the concept of stewardship encompasses the idea that humans are allies of the environment, rather than its rulers. Akhirah, also known as the hereafter, highlights the fact that humans have a responsibility as Allah's stewards on earth and will be held responsible in the afterlife for any deviation from the right path. Every succeeding generation has a responsibility to enhance the state of the planet, and no generation is

entitled to contaminate it in a manner that exhausts resources and deteriorates biological systems (Manzoor, 1984; Weeramantry, 1988).

1.2.1.3 Ecospirituality in Christianity

From a Christian standpoint, the connection between nature and spirituality is transcendental and ontological, as all things are owned by God. Humanity must take responsibility for how it receives and handles the gift of creation. St. Francis of Assisi, revered as the patron of ecologists, possesses a profound bond with environment because of his close relationship with God. Ecospirituality is more than simply establishing a connection with nature; it involves adopting an approach towards the natural world that is guided by Christian principles. These principles are based on fundamental ontological truths, including the concept that God created everything ex nihilo (out of nothing), that creation is the property of God, that humans are entrusted with the responsibility of caring for creation, and that creation serves as a reflection of its Creator (Duke, 2020). Hildegard of Bingen, a Benedictine mystic from the twelfth century, introduced the idea of 'viriditus', which refers to the divine force of God's Spirit that brings about greenness and vitality. Viriditas embodies the concept of vitality, development, and fecundity emanating from the life-generating force of God into mankind and the natural world (Shore-Goss, 2016). Pope Francis' Encyclical Letter Laudato sí (2015) presents a Christian ecospirituality that centres on a perspective of the universe and existence that is grounded in a trinitarian personal God. The scripture asserts that every creature possesses inherent worth and is seen as valuable by God, rather than being entirely submissive to the well-being of people (Messias, 2024).

1.2.1.4 Ecospirituality in Sikhism

The Sri Guru Granth Sahib affirms that nature is a manifestation of the Creator, and that every living entity in the world is a manifestation of the Creator. The Creator is the fundamental link in all of existence, yet the true nature of the Creator remains unknowable. The Sri Guru Granth Sahib challenges the notion that human conflict is directed towards nature and that human dominance is achieved by controlling nature. The history of the Gurus is replete with tales of their profound affection for animals, birds, trees, flora, rivers, mountains, and the sky. Additionally, a significant number of Sikhs adhere to a strict vegetarian lifestyle, prioritising self-control and inner mastery over the domination of nature. The Sri Guru Granth Sahib proclaims the Earth as a dharmsaal, highlighting its role as a space for virtuous conduct and underscoring the importance of equality and justice in interpersonal connections. It demonstrates that genuine tranquilly can solely be attained when one's desires and greed are restrained and reduced. Attaining eternal serenity is achieved by recognising the inherent divinity in everything. The Guru has bestowed to Nanak the revelation of God, including the three realms of existence - the aquatic domain, the terrestrial realm, and the wooded landscapes. By acknowledging the fundamental nature of divinity in everything, individuals might attain tranquilly and a serene state of mind, so averting the fervent flames of longing from consuming them (Singh, 2021).

1.2.1.5 Ecospirituality in Buddhism

The Buddhist perspective is intrinsically environmentally conscious and in harmony with the natural surroundings. This position is substantiated by a variety of

scriptures, such as the e Mahiratnakuta Sutra, Thich Nhat Hanh, and the Dalai Lama. Kaza (1993) contends that the Buddha and Buddhist monks exemplify ecologically conscious behaviour through their modest ways of living and adherence to vinaya regulations that forbid deforestation, consumption of wild animal meat, and water pollution. Key Buddhist teachings, such as paticcasamuppada (the concept of interdependent co-arising), anatta (the idea of not-self), sunnata (the notion of emptiness), and tathagatagarbha (the concept of the womb of suchness), are also regarded as having ecological importance. The teachings embody a holistic worldview that links all sentient beings, including people and animals, without any hierarchy or duality (Swearer, 2006). Swearer (2006) posits that existential beings are interconnected through the Buddhist concept of shared suffering, known as dukkha, which also encompasses nature. From a moral and cosmological perspective, the principles of karma and rebirth connect all living beings in a karmic cycle that is typically categorised into three levels of existence and five or six realms of rebirth. The ideas of tathagatagarbha (womb of suchness) and global Buddha nature (buddhakaya) refer to a shared foundation of interconnectedness or mutual transformation.

1.2.1.6 Ecospirituality in Jainism

Jacobi (1884) states that the Akaranga Sutra, one of the significant Jaina scriptures, portrays a universe teeming with life, drawing from the life narrative of Mahavira, the twenty-fourth esteemed teacher. According to Jainism's doctrine of karma, every living being will eventually undergo a new existence as part of the continuous cycle of samsara, which can only be stopped when one achieves spiritual emancipation, known as kevala. Mahavira established guidelines to facilitate individuals on their journey

towards freedom, by reducing and eradicating karma via the practice of nonviolent conduct. The leader directed his male and female religious followers to refrain from causing harm to any living beings, which encompassed activities such as consuming food, moving from one place to another, excreting waste, and receiving nourishment. Jainism's reverence for the natural world sets it apart as arguably the most environmentally conscious religious tradition. In the second section of the Akaranga Sutra, Mahavira counsels his disciples to alter their perspective about the observation of large trees, acknowledging their inherent worth due to their aesthetic appeal, robustness, and grandeur. This work also emphasises the enduring nature of human avarice and the exploitation of the environment. According to Chappel (2001), the Jaina worldview is closely linked to the belief that the planet possesses emotions and that the earth reacts in a similar manner to human presence.

1.3 Key principles of Ecospirituality

The analysis of the data demonstrated that ecospirituality can be characterised by five principles: tending, dwelling, reverence, connectedness, and sentience (Lincoln, 2000).

- **Tending**

Tending is a dynamic aspect of connection, encompassing the act of taking care of oneself to be capable of taking care of others. Tending is the act of nurturing, caring for, actively engaging with, and participating in the world to find meaning and fulfilment in life. Josselson (1992) defines tending as an active aspect of connectedness.

- **Dwelling**

Dwelling is the act of coexisting with both the visible and invisible aspects of existence. According to Schuster (1992), dwelling can be defined as a manner of existing in the world that involves caring for and respecting the sanctity of people, the planet, and the enigmatic nature of human existence in the context of time and place. The concept of dwelling is based on the actions of assessing, evaluating, contemplating, reflecting, focusing, sharpening one's perception, and being conscious. The presence of harmony and equilibrium in both the internal and external perception of the world contributes to a sense of dwelling. The state of harmony is further strengthened when individuals actively endorse and participate in decisions and endeavours that promote tranquilly, both inside themselves and in their external surroundings.

- **Reverence**

Reverence is a deep and physical feeling of respect and admiration for the sacred and awe-inspiring, rooted in the understanding that humanity is intimately connected to and part of the earth. This path of reverence entails experiencing a profound sense of admiration and respect while actively engaging in actions aimed at the restoration and improvement of oneself, others, and the environment. Ecospiritual reverence promotes the restoration and harmony of oneself, others, and the environment.

- **Connectedness**

Connectedness is a notion that pertains to ecospiritual encounters, characterised by an inherent connection with the cosmos and the perception that the profound enigma of existence permeates every individual component of the universe.

- **Sentience**

Sentience is the state of having knowledge or awareness. Cummings (1991) suggests that humans live a magical life in a magical universe. We can perceive and describe this amazement through the nature of sentience.

1.4 Importance of Ecospirituality

Ecospirituality is fostered by ideas and ethical perspectives that result in environmentally friendly attitudes and actions. It plays a crucial role in facilitating the shift towards environmentally conscious societies by offering perspectives and ethical values that motivate individuals to work towards sustainability. Ecospirituality is a holistic term that covers a range of ecological ideas and practices, emphasising the importance of environmental well-being. It is often associated with the belief that Earth is a reservoir of happiness for all living beings, and that humans should avoid asserting dominance over animals and environment. The lack of consideration for ecological concerns is a clear indication of societal ignorance, as it affects not just individuals but also social, political, and cultural structures. However, this issue has a global impact as it pertains to the collective human population, since we choose actions that have both advantageous and harmful consequences on the natural surroundings in our daily lives. Ecospirituality advocates for ecological transformation by promoting a change in thinking, adopting personal practices, and participating in social and institutional activities, all with the goal of protecting our earth (de Diego-Cordero, 2024). In his 2015 Encyclical "Laudato Si," Pope Francis examines the increasing recognition of humanity's ethical responsibility to cultivate a more profound reverence for the environment and

nature. Ecospirituality highlights the profound interconnection between humans and the natural environment. The relationship between personal and philosophical dimensions of human behaviour is frequently exemplified by Gaianism's conviction that Earth functions as a superorganism (Lovelock, 2000. Julia Hill demonstrated her spiritual connection to nature by protesting deforestation while living atop a California redwood (Taylor, 2009). Ecospirituality is of great importance in several cultural settings. Australian indigenous peoples hold the belief that holy locations are inhabited by living spirits (Hubert, 1994), whereas in India, the presence of deities in sacred groves influences the way these sites are seen as spiritual assets (Malhotra et al., 2001). Land that holds spiritual significance for a society or individual is considered sacred and distinguished from land that lacks such significance. This procedure transforms the type of moral consideration assigned to the land, regulating it based on the principle of purity rather than causing harm. The widespread and enduring dominance of the utilitarian perspective on nature presents a difficulty in achieving a sustainable future, as opting to protect nature frequently entails significant society and personal financial burdens. Ecospirituality, which is the concept that nature holds spiritual importance, could be an undervalued factor in decision-making processes that require economic sacrifices to protect the environment. Ecospirituality is a powerful tool for promoting a more sustainable environment and enhanced well-being. By incorporating ecospirituality into our studies and efforts, we can construct a more sustainable future for all individuals. The healthcare field has been greatly impacted by nature and involvement in natural settings for many years. This influence may be seen in the architecture of hospitals and care facilities, as well as in the everyday clinical application of treatment planning. Within the field of occupational therapy, there has been a growing interest in the role of spirituality as a means of informing professional practice and care. This interest has been particularly

prominent in the last fifty years, as evidenced by studies conducted by Wilson in 2010 and Newbigging et al. in 2017. The incorporation of spirituality, environment, and health has been a longstanding and important element in nursing, dating back to its origins. Nightingale, an advocate for the environment and spirituality, incorporated these components into the educational programmes and practical application of nursing (Dossey, 2000). Nursing theorists have prioritised the issue of environment in their theoretical frameworks. In the 1980s and 1990s, holistic nurses advocated for caring for the environment and shifting towards a more ecocentric awareness (Kleffel, 1996). In recent years, numerous nurses have observed the correlation between spirituality, environment, and health through different means (Delaney & Barrere, (2009). Clark et al. (2003) advocated for the integration of natural therapeutic environments in hospitals to cater to spirituality. Meanwhile, Galek et al. (2005) created a tool to meet the spiritual requirements of hospitalised patients and highlighted nature and environment as crucial aspects of spirituality. Ecospirituality can address health concerns and reduces the negative impacts of socioeconomic factors on health (Lestar & Böhm, 2020). Research has shown that ecospirituality can successfully guide humanity towards enhanced well-being in relation to both the environment and global health (Keaulana et al., 2021).

1.5 Ecospirituality and Mental Health

The prevalence of mental diseases is increasing worldwide, especially in low and middle-income nations experiencing rapid urbanisation (de Diego-Cordero et al. 2024). Various factors, including less physical activity, heightened violence, poverty, social isolation, overcrowding, and pollution, contribute to the emergence of these disorders. Environmental crises have significant impacts on physical and mental health, social well-

being, and mental health in both the short and long term. The relationship with nature can be viewed from two perspectives: as a conduit that elicits strong good emotions and connection, or as a source of danger when recognising the reduction of one's significance within the universe. Nevertheless, being exposed to natural disasters or having knowledge about them might elicit substantial tension or anxiety in certain individuals, resulting in feelings of frustration and powerlessness owing to the unavoidable repercussions of environmental crises (Bellehumeur et al., 2022). Most of the past studies have demonstrated a favourable correlation between exposure to natural environments and mental well-being (de Diego-Cordero et al. 2024). Green areas promote physical exercise and foster social solidarity, hence mitigating mental health issues (Nawrath et al., 2022). Wilson's Biophilia Hypothesis (1984) proposed that people have an innate need to form connections with other living organisms, while Kaplan's Attention Restoration Theory (1995) indicated that engaging with nature can enhance well-being by improving focused attention. Shinrin-Yoku, also known as forest bathing, is a therapeutic practice that emerged in the 1980s. It has gained significant recognition and is now being used in mental health care settings, such as wandering in nature near healthcare institutions (Hansen et al., 2017). Urbanisation leads to the adoption of sedentary lifestyles and bad eating habits, both of which contribute to the development of mental problems. Hence, it is suggested that urban regions strive to achieve equilibrium by preserving the presence of green places. Engaging with nature facilitates the enhancement of well-being and the prevention of both physical and mental ailments, and this association can serve as a therapeutic and rehabilitative intervention (Martínez-Soto et al, 2014). Spirituality has emerged as a crucial determinant in attaining optimal mental well-being, enhancing the ability to cope with disease, and extending one's lifespan. While it does not provide direct protection against sickness, it does have a favourable impact on psychological and

physical well-being, serving to cope with and adjust to an illness (Skoko et al., 2021). Elevated levels of spirituality contribute to an enhanced quality of life in terms of mental, social, and environmental aspects (Vitorino et al., 2018). Fisher (2011) asserts that spiritual health is the primary aspect of individuals' overall health and well-being, encompassing and unifying all other dimensions of health. He defines spiritual health as a dynamic state of existence, manifested in the quality of relationships individuals have in four domains of spiritual well-being: personal, communal, environmental, and transcendental. In order to clarify the connection between the four categories, Fisher introduces the concept of progressive synergism which suggests that the broader domains of spiritual well-being not only rely on, but also enhance, the ones they encompass. Heard et al. (2022) in their study noticed several instances where participants experienced a heightened sense of self, connection to others, and connection to their 'personally sacred' by spending time in local natural environments and being able to create these experiences themselves. Thus, ecospirituality can play crucial role for advancing mental well-being and ensuring fairness in environmental matters.

1.6 Ecospirituality and Depression, Anxiety, Stress among students

Higher education students encounter a multitude of problems and pressures, such as academic rigour, peer influence, forming new social connections, unfamiliar subjects, anxiety about meeting expectations, poor academic performance, concerns about future career prospects, financial strain, and feelings of isolation (Mofatteh, 2021). During this period, individuals may experience mental health issues such as anxiety, stress, and depression. Certain students experience a singular problem, whilst others experience multiple challenges concurrently (Koenig, 2018). Depression is a psychiatric condition

defined by emotional anguish, hopelessness, and dissatisfaction. Individuals suffering from depression may encounter disrupted sleep patterns and alterations in their eating habits. Individuals experiencing this condition may exhibit symptoms such as diminished self-esteem, contemplation of mortality, pessimism towards the future, as well as fatigue and impaired cognitive focus. These observations are supported by the World Health Organization (2023). Globally, it is projected that more than 300 million individuals have depression (Chodavadia et al. 2023). College and university students are typically more susceptible to depression and stress (Kumaraswamy, 2013). Stress is a significant element of mental health, as it is regarded as a contributing factor to both physical health and overall well-being. Stress is a psychological or physiological reaction that occurs when an individual interacts with their environment and evaluates the stimuli they encounter (Selye, 1984). Stress is a condition characterised by any form of alteration that induces physical, emotional, or psychological burden (Scott, 2024). Anxiety is a state awareness and fear about uncertain future events, which impacts all elements of physical, cognitive, and emotional behaviour. To assist students in managing these circumstances, it is imperative to furnish them with the requisite assistance and resources. An individual afflicted with anxiety typically encounters challenges in focusing, retaining information, and forming essential connections between events or individuals. Anxiety is the most seen mental disorder diagnosis that is frequently overlooked or disregarded (Ozen et al. 2010). Hamaideh et al. (2022) established significant correlations between depression, stress, and anxiety, along with demographic, health-related, and lifestyle factors. To assist students in managing these circumstances, it is imperative to furnish them with the requisite assistance and resources.

Research indicates that spending time in nature has positive effects on both mental and physical well-being. These benefits include a decrease in stress, depression, and

anxiety, as well as an enhancement in healing rates (Robbins, 2020). Nature immersion therapy have evolved as a viable alternative method for reducing stress, depression, and anxiety. These therapies utilise the exposure to natural environmental stimuli to produce physiological relaxation, which may enhance immune functioning and assist in disease prevention. Several approaches have been created for nature immersion therapy, such as Shinrin-Yoku, mindfulness, yoga, physical activity, and Tai-Chi in natural environments. Shinrin-Yoku, sometimes referred to as forest bathing, is linked to favourable health outcomes for both the physical and mental well-being of individuals (Hansen et al., 2017). Contemporary studies suggest that interacting with nature can lower blood pressure, heart rate, and muscle tension (Shanahan et al., 2016). Additionally, observing natural landscapes can alleviate fear and anxiety and elicit positive emotions such as tranquilly, enjoyment, rejuvenation, healing, and a sense of being fully present in nature. This is achieved by heightened sensory input and perceptiveness (Ulrich, 1981). The Connectedness to Nature Scale (CNS) was initially developed by Mayer and Franz (2004), who discovered that individuals exposed to a nature reserve had a notably more favourable mood compared to those exposed to an urban location.

The ecological self-model posits that the welfare of both the human self and the natural world are interconnected, and this connection is inherent in a type of active spirituality (Baillie, 2003). Recent research indicates that the process of finding meaning, as represented by a spiritual perspective, can have a major influence on several psychological elements of wellness (Laubmeier et al., 2004). Spirituality, as described by Burris (1999), refers to the internal experience and belief system of an individual. It provides significance to one's existence and enables them to go beyond their current circumstances. Research repeatedly shows that embracing spirituality is associated with improved psychological health and wellbeing (Labbe & Fobes, 2010). Kamitsis et al.

(2013) proposed that spirituality can have a substantial impact on the beneficial outcomes resulting from interacting with nature and one's psychological well-being. Thus, ecospirituality which is rooted in a strong belief in the sacredness of nature and combines spirituality with the environment, can have a substantial impact on alleviating depression, anxiety, and stress among students.

1.7 The rationale of this study

In recent years, there has been a growing body of literature in philosophy and psychology focused on ecospirituality. This field aims to define ecospirituality, create tools for measuring it, and explore its connection to mental health problems such as depression, anxiety, and stress. These efforts are motivated by the significant challenges of mental health issues faced by society in various aspects of life, due to population growth, increased work demands, and other factors. Hence, to maintain optimal mental well-being and effectively manage conditions such as depression, anxiety, and stress, it is imperative that we cultivate the qualities associated with ecospirituality. Students at higher education level face various adversities in various aspects of life. Ecospirituality could be the healing construct against their psychological distress. To determine the prevalence of ecospirituality among higher education students and whether it can effectively address their mental health concerns i.e. depression, anxiety, and stress, it is crucial to analyse these phenomena within a scientific framework. The current study provides a rationale for investigating the presence and magnitude of ecospirituality, as well as depression, anxiety, and stress levels among students in higher education.

1.8 Operational definition of the key terms

- **Depression**

Depression refers to a category of mental diseases defined by a deep and enduring sense of melancholy or dissatisfaction, as well as a lack of interest in formerly enjoyable activities and disruption in daily functioning. The current study assesses student's' depression using the score on the depression scale of DASS-21 (Lovibond & Lovibond, 1995).

- **Anxiety**

Anxiety, as described by the American Psychological Association (APA), is an emotional state characterised by feelings of tension, worrisome thoughts, and physiological changes such as elevated blood pressure. It is an exaggerated and enduring concern and apprehension over ordinary circumstances. The current study classified anxiety according to the American Psychological Association (APA) and assessed it using the score on the anxiety scale within the DASS-21.

- **Stress**

Stress is the heightened strain that individuals experience from daily activity or specific events or phenomena. The current study defined stress as a score on stress scale of the DASS-21, which is determined by seven items that assess the individual's ability to relax, their level of nervous arousal, and their tendency to become easily upset, irritated, irritable, and over-reactive. The stress scale is responsive to levels of persistent non-specific arousal.

- **Ecospirituality**

Ecospirituality refers to the understanding of the interconnectedness and sacredness of all organisms on Earth and acknowledging their mutual dependence (Lincoln, 2000; Bonfiglio, 2012). Suganthi (2019) defines ecospirituality as an attitude of deep respect towards the environment, manifested by responsible stewardship while living within its boundaries. Ecospirituality emphasises more on the aspect of relating oneself with the sacred rather than finding the sacred.

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CHAPTER II

THE PROBLEM OF THE STUDY

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2.1 Literature review

In order to perform a comprehensive study of previous research, the researcher initially identified both theoretical and empirical studies pertaining to ecospirituality and depression, anxiety, stress. Subsequently, the focus was limited down to studies specifically undertaken in the realm of education and higher education. The researcher looked into the primary research databases such as Scopus, Web of Science, PubMed, ERIC, ScienceDirect, Directory of Open Access Journals (DOAJ), JSTOR, and PsycINFO. The researcher selected a total of 153 database entries, and from these, the researcher reviewed eight relevant studies (from 2002 to 2021) on spirituality and mental health, twenty relevant studies (from 2000 to 2023) on ecospirituality, and thirty-two studies (from 2007 to 2022) on depression, anxiety, stress to identify the knowledge gap for the current study. The subsequent works were reviewed-

2.1.1 Review on Spirituality and Mental Health

In their study, **Negi et al. (2021)** investigated the influence of several dimensions of spirituality on the levels of stress, anxiety, and depression experienced by engineering students. 914 engineering students from the Indian Institute of Technology Roorkee, India were surveyed to gather data. In this study, a self-administered questionnaire and the DASS-21 scale were utilised to assess spirituality, as well as levels of depression, anxiety, and stress. The Pearson correlation was employed to analyse the association between dimensions of spirituality and levels of stress, anxiety, and depression. The independent sample t-test was used to investigate gender differences in spirituality, stress, anxiety, and depression among engineering students. The study's findings

demonstrated a significant relationship between universal consciousness and anxiety levels among engineering students. Female students' sense of spirituality is stronger than male students.

Bożek et al. (2020) conducted a study to examine the interconnections of spirituality, health-related behaviours, and psychological well-being in the framework of acquired knowledge and learning. A survey was done using a questionnaire among 595 students from six distinct universities, pursuing academic programmes with a specific emphasis on either the human body encompasses both the physical and mental aspects of a person. The findings indicated that there is beneficial correlation among spirituality, health-related behaviours, and psychological well-being. Furthermore, the connection between spirituality and health is influenced by health-related behaviours.

In their study, **Kao et al. (2020)** reviewed the association between religion/spirituality and mental health. Historically, emotional disorders have been regarded as spiritual issues, and religious organisations have played a significant role in providing mental healthcare. Nevertheless, progress in the field of medicine and the writings of Freud have prompted a change in perspective, resulting in a heightened curiosity regarding the intersection of mental well-being and religion/spirituality. The study demonstrated that religion/spirituality can have a protective and therapeutic role in emotional distress, leading to the development of clinical therapies that aim to address these associations.

Baumsteiger and Chenneville (2015) investigated religiosity and spirituality in the context of mental health research. A total of 123 participants were assessed regarding their spiritual views, relationships, and personal growth. The findings demonstrated a considerable impact of spirituality on both mental well-being and daily functioning. The study revealed that spirituality and religiosity are distinct yet interconnected concepts,

with the presence of negative connotations associated with religiosity being relatively uncommon. The study highlighted the significance of comprehending the intricacies involved in evaluating religiosity and spirituality in order to enhance studies on mental health.

Koenig (2012) conducted a comprehensive study examining the relationship between religion/spirituality and both mental health and physical health. The analysis was founded on a comprehensive evaluation of primary data-driven quantitative research studies that were published in peer-reviewed academic journals from 1872 to 2010. It also incorporated a small number of influential publications that had been published since 2010. Studies had demonstrated a positive correlation between higher levels of religious/spiritual beliefs and improved mental well-being, as well as a greater ability to cope with health issues. These benefits have physiological ramifications that affect physical well-being, susceptibility to diseases, and response to therapy. Incorporating spirituality into patient care is crucial for delivering exceptional care and attending to spiritual requirements in clinical practice. Health professionals should possess knowledge of the scientific base, comprehend the rationale of incorporating spirituality into patient treatment, and possess the ability to do so with sensitivity. It is advisable to do a concise assessment of the patient's spiritual background, particularly in cases of severe or long-term medical conditions. If necessary, the healthcare provider should direct patients to pastoral care services. It is of utmost importance to honour the religious/spiritual beliefs of patients, and healthcare workers should seek guidance from a chaplain when needed. When doing spiritual history or interventions, it is important to prioritise the patient's needs and preferences, so that the patient feels empowered and in charge. Healthcare practitioners should acquire knowledge of religious/spiritual

beliefs and practices from various faith traditions, particularly when patients are admitted to hospitals, are critically sick, or are approaching the end of their lives.

Hadzic (2011) carried out a study to review the significance of spirituality in mental health. Initial research indicates a favourable correlation between spirituality and mental well-being. Nevertheless, the study encountered difficulties arising from the absence of a clear and exact definition of spirituality, as well as the problem of differentiating it from religiosity. Contemporary research faces challenges in obtaining dependable findings and comprehending the adverse consequences of these ideas. Developing context-specific conceptions of spirituality and recognising the distinctions across various religions are of utmost importance. Significant advancements in this discipline require the incorporation of context-specific, accurate, and standardised definitions of spirituality through new studies.

Koenig (2009) conducted a review study to explore the relation between religion and (or) spirituality, and mental health, focusing on depression, suicide, anxiety, psychosis, and substance abuse. The article provided an analysis of a previous comprehensive review, then subsequently outlined more current investigations conducted in the United States, Canada, Europe, and other nations. The study concluded that spirituality as well as religious ideas and practices can provide significant solace, and optimism. However, they can also become intertwined with neurotic and psychotic disorders, making it challenging to ascertain whether they are beneficial or detrimental.

Leibrich (2002) stressed the significance of taking into account both spirituality and mental health in relation to one's personal experience. She emphasised the significance of communication, specifically through personal anecdotes, and the juxtaposition between communication and control. Leibrich employed the term "discovery" rather than "recovery" to delineate the process by which individuals

effectively cope with mental illness. Leibrich posited that the fundamental concerns regarding spirituality and mental health are rooted in wisdom and belief, as opposed to standardised categories and definitions. She cautioned against reviving antiquated prejudices and emphasises the importance of achieving equilibrium in our lives, since civilizations frequently cultivate a culture of assigning blame and fostering guilt.

2.1.2 Review on Ecospirituality

In their study **Billet et al. (2023)** investigated the relationship between ecospirituality and moral concern for nature. The finding suggested that ecospirituality may be a unique pathway to moral concern for nature, as it robustly predict the moralization of nature, over and above environmental attitudes, environmentalist identity, and political orientation. Individuals with a stronger inclination towards ecospirituality exhibited a greater tendency to consider nature as an integral part of their moral sphere and perceived the deterioration of nature as a transgression against moral principles. Ecospirituality is a reliable predictor of the type of moralization that emphasises sacred values and prioritises principled reasoning rather than a cost-benefit approach. The participants' predilection for certain thinking patterns could have significant ramifications for their decision-making about environmental issues and might even have a role in their voting behaviour.

Itel (2023) conducted a study to explore the sociological and historical dimensions of ecospirituality and various currents that make up ecospirituality. The subjects were 95 people in France, French-speaking Switzerland (Romandie), and Belgium, mostly aged 35 to 50, who practiced ecospirituality. The research revealed that the intuitive knowledge within the realm of ecospirituality is rooted in personal experiences, encompassing bodily sensations and emotional responses. The process of

establishing a connection with nature involves engaging with sensory experiences, cultivating sensitivity, and embracing non-rational techniques. This ultimately fosters a profound sense of belonging and facilitates personal growth and self-expansion. The French speaking ecospirituals drew upon a combination of embodied and cognitive knowledge, serving as a supplementary element to scientific discourses aiming to address the ecological issue by rational means.

Winslow (2023) conducted a study to examine the nature and its capacity to mitigate the climate issue. Anthropological data indicates that early hominids had a profound and close connection with the animals they lived with and the environmental phenomena they encountered. Jonathan Edwards, an 18th-century theologian, preacher, poet, and naturalist, establishes a link between the manifestation of God's fundamental beauty in nature and the unrestricted and ongoing bestowal of common grace accessible to all individuals. A Christology refers to a theological perspective that explores the metaphysical interconnection between God, people, and the biosphere. In the current ecological crisis, experiencing grace through the rejuvenating splendour of nature is an immediate consequence of the Spirit, necessitating only one's humanity. This study was a part of the 'Understanding Reality (Theology and Nature)' initiative, headed by Prof. Dr. Johan Buitendag, at the University of Pretoria.

In their study, **Bellehumeur (2022)** sought to investigate the potential advantages of incorporating spirituality into positive psychology as a means of enhancing individuals' well-being in the face of climate change and its associated effects on stress and mental health. It has been determined that the discipline of positive psychology has undergone a progressive transformation, characterized by a notable inclination towards the incorporation of spirituality. Within the context of climate change, the incorporation of spirituality into the positive psychology framework has the potential to stimulate

cognitive processes, motivate physical actions, and foster introspection, contemplation, and interpersonal connections with the natural environment and those who share similar beliefs. This methodology mitigates the risk of fixating on a one aspect and instead offers a diverse perspective on the several dimensions that contribute to an individual's overall state of well-being. The study's findings indicated the emergence of a novel form of consciousness, wherein individuals increasingly perceive and evaluate their quality of life through spiritual and relational dimensions, as opposed to materialistic considerations. During periods of climate crisis, it is imperative to employ adaptation strategies and embrace a holistic approach in order to effectively address the imminent challenges posed by physical, psychological, and philosophical transformations.

Heard (2022) conducted a study to examine the phenomenon of ecospirituality, which refers to the individual's subjective encounter with spirituality in natural surroundings. The investigation focused on a community-oriented group composed of persons inside the forensic mental health system in Ontario, Canada. The research employed a qualitative approach, utilizing interpretative phenomenological analysis and semi-structured interviews as the primary methods of data collection and interpretation. The findings of the study indicated that individuals who engaged in ecospirituality practices reported an augmented sense of connection with the natural environment, a heightened feeling of tranquillity, and a strengthened connection with their own personally sacred beliefs. Additionally, they documented an increase in resilience and the establishment of significant interpersonal relationships. The study proposed that it would be beneficial to improve the availability of natural environments for persons inside mental health systems, while also advocating for the promotion of personal agency and autonomy within these settings.

Willmore (2022) conducted a study that examined the principles of holistic education and their application in promoting teachers' well-being, with a particular emphasis on the incorporation of ecospirituality. The concept of holistic education aims to foster a sense of interconnectedness by emphasizing humanistic, spiritual, and ecological comprehension. The amalgamation of spiritual identity development and natural connection has the potential to enhance an individual's overall well-being, fortitude, and capacity to make meaningful contributions to society. Nevertheless, conventional educational systems frequently overlook the inclusion of the spiritual aspect, resulting in a condition known as nature-deficient disease. This study demonstrated that the incorporation of spiritual and ecological identity development has a positive impact on the overall growth and well-being of individuals. The integration of spirituality and nature within educational settings has the potential to facilitate profound personal and socio-environmental changes.

In his master's thesis**, Billet (2021)** examined three fundamental inquiries pertaining to ecospirituality: (1) the definition of ecospirituality, (2) the characteristics of individuals who identify as ecospiritual, and (3) the significance of ecospirituality in the preservation of nature. A 12-item assessment tool for ecospirituality was developed and verified to investigate these inquiries. There was a negative correlation between ecospirituality and the perception of nature as a resource that may be used for practical purposes. The Ecospirituality Scale received widespread endorsement, and it showed little correlation with political inclination and other demographic factors. Ecospirituality accurately anticipated the decision-making processes of individuals in environmentally significant areas, whereby nature is seen as a sacred and highly esteemed value. This inclination was manifested through many means: giving more significance to deontological principles in guiding environmental choices, explicitly rejecting any

compromises between nature and economic benefits, and unreservedly supporting the Green Party through voting. The study concluded ecospirituality as a newly emerging subject in the field of psychology and could play a significant role in elucidating the motivations behind individuals' willingness to make the necessary sacrifices to adopt a more environmentally conscious way of living.

van Klinken (2021) conducted a study to explore Wangari Maathai's admiration to the restoration of indigenous tree species and the recognition of indigenous technologies, while also endorsing Maathai's use of traditional symbols, myths, and ritual activities as a means to foster eco-spirituality. Wangari Maathai, a renowned figure in activism and academia, is recognized for her advocacy in favour of safeguarding indigenous knowledge in response to environmental issues. Maathai asserted that the alignment of one's Christian identity and engagement with biblical texts is harmonious, as both avenues provide spiritual principles conducive to the restoration of ecological well-being. Nevertheless, she proposed that fully utilizing this compatibility necessitates a thorough reassessment of the Bible and the Christian tradition, disentangling them from their historical associations with colonization and exploitation.

Lestar and Böhm (2020) did a research study to thoroughly evaluate the interdisciplinary literature in order to analyse the interconnectedness of spirituality, pro-environmental behaviour, climate policy, and sustainability organizations. The researchers conducted a discussion regarding the tendency of individuals, particularly those associated with spiritual organizations and social movements, to adopt simplicity and austerity as a strategy for moving towards a future marked by increased sustainability. Scholars from several academic disciplines, including as new economics, stationary economics, degrowth, and deep sustainability management, are increasingly recognizing the importance of simplicity and its connection to intrinsic values, such as a

feeling of belonging and attachment. These ideals have been recognized as beneficial to both persons and the natural environment. The hypothesis proposed by the authors, known as Koehrsen's theory, explores the significance of religion within the framework of sustainability transitions. The authors contended that while the concepts of religious greening, awareness-raising coalitions, and a proactive stance towards climate change are significant subjects within the field of ecology and religion, their effectiveness in comprehending sustainability transitions may be doubtful if they are solely confined to rhetoric and communication centred around existing systems.

The primary objective of **Suganthi**'s **(2019)** study was to perform a comprehensive literature assessment on the topic of ecospirituality and its multifaceted aspects. In order to establish the ecospirituality assessment scale, a survey was administered to a sample of 527 individuals employed across several organizational settings. The dataset was divided into two distinct samples in order to carry out both exploratory and confirmatory factor analyses. The application of exploratory factor analysis yielded five distinct aspects of ecospirituality, specifically identified as dwelling, caring, revering, experiencing, and relating. The reliability, convergent validity, and discriminant validity were assessed by the use of structural equation modelling in confirmatory factor analysis. Four models were built and subsequently evaluated by comparing their model fit indices. In order to validate the ecospirituality scale, a second study was conducted with a sample size of 321 respondents. This validation process involved comparing the ecospirituality scale with three other scales related to the construct. The research conducted in this study resulted in the creation of a comprehensive ecospirituality scale consisting of 20 elements.

The discourse surrounding the theological aspects of environmentalism, specifically Dark Green Religion, is expanding. It implies that adherents of this faith have

a profound connection to the natural world, view it as sacred, and reject the belief that humans are the centre of the universe. **Koehrsen (2018)** examined the validity of the 'para religious' concept of Dark Green Religion. His study conducted in Northern Germany has uncovered compelling evidence of the presence of Dark Green Religion. However, the study also indicated the prevalence of anthropocentric orientations among the population.

Indian philosophy is based on the idea that people should try to figure out their place and role in the world in terms of how faith and nature are connected. In his article, **Singh (2018)** tried to explore the context of eco-spirituality and sustainability on the line of Swami Vivekananda's vision. The ethical principles of sustainable development necessitate that the current generation exercises responsible utilization of environmental resources, with the aim of safeguarding the inherent ecological and cultural value of our legacy. The essay posited that Swami Vivekananda's perspective on environmental awareness is rooted in the inherent moral obligations of the natural order, which he propagated through his Ramakrishna Mission and his scholarly analysis of Vedanta and Yoga philosophy. Swami Vivekananda placed significant emphasis on the significance of spiritual enlightenment and the promotion of interfaith harmony, advocating for the cultivation of profound moral ideals and the recognition of the cosmic identity inherent in humanity.

Choné, (2017) argued for the adoption of a qualitative, global, symbolic, and intuitive epistemology grounded in spiritual enlightenment. Ecospirituality posits that the environmental catastrophe is predominantly attributable to Western societies and argues against seeking remedies just within the confines of 'shallow ecology'. The proposition pushes for the reestablishment of a sacred connection with nature, emphasizing the perception of the Earth as a sentient creature. Since the 1980s, there has

been a noticeable rise in the spiritual dimensions of ecology, which has led to the questioning and re-evaluation of the traditional dichotomy between environment and society. Environmental activities have been impacted by earth religions, environmental ethics, and deep ecology.

Dhiman (2016) conducted a study to find whether the current economic and social development strategies could adequately cater the human desire for spiritual advancement or not. The study revealed that by incorporating spiritual growth with the pursuit of material progress, the sustainability of material success could be enhanced. Integrating sustainable practices with spiritual awareness has the potential to address the issues encountered by civilization and the environment. By incorporating spirituality and sustainability into our daily lives, we can contribute to the healing of both humans and the environment. This makes sustainability not just a practical choice, but also a morally significant one with deep spiritual implications.

In her study **Crowe (2013)** sought to ascertain whether transformative learning took place in an introductory environmental science course, leading to enhanced environmental attitudes and behaviours. The findings indicated that there was an enhancement in environmental attitudes and behaviours in both the control and experimental classes. However, the experimental class exhibited notable and statistically significant gains. Additionally, the study revealed that certain participants were aware of how their religious beliefs encouraged the responsible management of the environment, which subsequently influenced their actions. The study revealed that there was a modest association between pro-environmental views and pro-environmental behaviours, however the strength of these associations was limited. The study additionally discovered that students' insufficient environmental consciousness constituted a prominent motif, pertaining to the initial three stages of transformation in Mezirow's

learning theory: the disorienting problem, self-reflection, and critical evaluation of assumptions. The incorporation of the instructor's own experiences was a vital element in fostering active and engaged learning, as it facilitated students' ability to establish connections with the knowledge and critically analyse their own lives. The establishment of transparency between students and instructors diminished the gap between pupils and questioned the traditional perception of the teacher as an unquestionable authority. The study determined that transformative learning is an effective mechanism for facilitating long-lasting changes and fundamental shifts in thinking that support the preservation of the environment. However, additional research is required to explore the influence of spirituality in these processes.

Sideris (2013) examined whether the ecospirituality rooted on scientific principles, which prioritises scientific reasoning above direct interactions with the natural world in daily life, can foster environmental values. The New Genesis movement, commonly referred to as The Epic of Evolution, seeks to establish environmental habits on a spirituality that is rooted in scientific principles, presenting science as the contemporary sacred narrative. Advocates of the New Genesis perspective consider scientific worldviews to be the main means of reviving the sense of magic, awe, significance, and worth in the natural world. They contend that humanity's emerging geological consciousness, fuelled by current scientific understanding, will empower us to steer the future progression of the cosmic phenomenon, initiating an "Ecozoic" epoch characterised by enhanced closeness and concord between humans and the Earth. Nevertheless, the author expressed doubt regarding the New Genesis narrative, asserting that although it may be an engrossing and satisfying tale, it lacks the ability to warrant widespread acceptance among the populace due to its lack of consensus.

Hrynkow & O'Hara (2011) carried out a study to explore the possibility of cultivating and developing a new form of environmentally conscious Catholic spirituality by analysing the biocentric viewpoint in current teachings and practices. The paper posited that the condemnation expressed in the preceding remark towards biocentric sensitivity and ecospirituality can hinder the successful fostering of a meaningful, durable, and sustainable peace. In order to tackle the interrelated socioeconomic and ecological issues, a comprehensive and unified approach is required. Biocentric ecospirituality can assist in redirecting the cumulative impacts of human activities. A reformed Catholic Social Teaching, integrating an environmentally conscious understanding of human nature, may discern social, political, economic, and ecological behaviours that cause misery and hinder human well-being. Seeking guidance from specialists in the fields of ecotheology and ecospirituality will facilitate continued progress in this crucial domain. A Catholic Social Teaching, which combined ecological spirituality and biocentric viewpoints, can enhance the productive functioning and prosperity of the Earth community under conditions of peace and justice.

Delaney & Barrere (2009) conducted a phenomenological investigation to examine and elucidate the encounter of environmental meditation through the utilization of a novel, spirituality-centred meditation intervention that concentrated on ecospirituality among patients diagnosed with cardiovascular disease. The study included a convenience sample of 6 women and 2 men, whose ages ranged from 42 to 64 years, with a mean age of 57 years. From a total of 8 journals and the researchers' field notebooks, 85 noteworthy phrases or sentences were selected. These were then transformed into concise meanings and subsequently grouped into 4 thematic clusters: Entering a New Time Zone, Environmental Reawakening, finding a New Rhythm, and Becoming a Healing Environment. The results of this study offer initial evidence for

holistic nurses and other healthcare practitioners to incorporate ecospirituality meditation into their treatment of patients with cardiovascular disease.

In her article, **Smith (2009)** explored ecospirituality as a crucial dimension in education for sustainability. The primary objective of the UNESCO Decade for Education for Sustainable Development is to advance the principles of environmental stewardship. However, it is frequently observed that this initiative tends to overlook the inclusion of a spiritual dimension. The divergence between human beings and the natural world has resulted in apprehension and the utilization of natural resources for personal gain. Religious institutions are undergoing a process of reformation in order to effectively respond to the prevailing worldwide ecological catastrophe. The cultivation of positive ecospiritual experiences that are suitable for a particular age group is of utmost importance in fostering a genuine sense of environmental care. This is particularly significant due to the potential development of "ecophobia" among children. This paper advocated for the utilization of ecospirituality education.

Lincoln (2000) did a phenomenological study to elucidate the experience of holistic nurses regarding ecospiritual consciousness. All 36 participants in her research were enrolled in the initial phase of a four-part training program offered by the American Holistic Nurses' Association Certificate Program in Holistic Nursing, with the intention of studying holistic nursing. The subjects consisted exclusively of women, with ages spanning from 32 to 63 years. The analysis of data revealed that ecospiritual consciousness consists of five fundamental elements: tending, dwelling, reverence, connectivity, and sensibility. Tending arises from a knowledgeable and active involvement with life. Tending is shown through acts of nurturing, loving, actively engaging, and actively participating with the world in order to attain significance and abundance in life. Dwelling is the act of existing in the presence of both the visible and the

invisible. The act of uncovering the inherent mystery in all creation evokes a profound and widespread feeling of reverence, embodying both the sacred and the awe-inspiring. Connectedness was defined as an inherent and intimate relationship with the universe, where the profound enigma of existence is perceived to exist inside every individual component of the universe. The study participants reported experiencing conscious states in which they were able to alleviate tension and unpleasant emotions by undergoing a transformative process, such as releasing, accepting, or attaining a sense of connection or transcendence.

2.1.3 Review on Depression, Anxiety and Stress

Hamaideh et al. (2022) conducted a study to determine the frequency and factors associated with depression, anxiety, and stress among university students in Jordan who were placed under "home-quarantine" as a result of the COVID-19 pandemic. The study conducted was a descriptive cross-sectional analysis. 1,380 Jordanian university students were included in the study using a convenience sampling method to obtain data. Data was collected from the participants using the DASS-21 through a survey conducted on the internet. The rates of depression, anxiety, and stress at various levels were 78.7%, 67.9%, and 58.7%, respectively. These rates were shown to be greater throughout the period of "home-quarantine." Significant associations were observed between depression, stress, and anxiety, along with demographic, health-related, and lifestyle factors.

Hossain et al. (2022) aimed to ascertain the extent of anxiety, depression, and stress experienced by university students and investigate how these mental health factors relate to their sociodemographic variables. Data was gathered from 351 students using a self-administered questionnaire. The questionnaire included sociodemographic

information and the Depression, Anxiety, and Stress Scale (DASS-21). The data collection period was from December 8, 2019, to January 23, 2020. The results indicated that most individuals experienced a low or moderate degree of stress, which was found to be correlated with gender and place of residence (urban or rural). Over 40% of pupils experienced highly intense anxiety. The findings indicated a correlation between the anxiety level of pupils and their gender, place of living (urban or rural), and family type. The findings also indicated a correlation between the students' depression level and factors such as their housing type, family structure, and birth order. The studies also revealed that female students exhibit higher levels of depression, stress, and anxiety compared to their male counterparts.

Deng et al. (2021) examined the frequency of depressed symptoms, anxiety symptoms, and sleep disruptions among university students throughout the pandemic. A comprehensive search of English and Chinese databases was carried out up until January 1st, 2021. The assessment of the studies' quality was conducted using a modified version of the Newcastle-Ottawa scale. The occurrence of depressive symptoms, anxiety symptoms, and sleep disruptions were combined using random-effects meta-analysis. A total of eighty-nine studies were considered. The combined prevalence of depressive symptoms, anxiety symptoms, and sleep problems was 34%, 32%, and 33%, respectively. The prevalence rates varied according on geographic locations, diagnostic criteria, educational attainment, undergraduate year of study, socioeconomic status, living arrangements, and gender. In summary, this study found a higher occurrence of depressed symptoms and anxiety symptoms compared to the prevalence observed in similar people before the pandemic.

The objective of **Fauzi et al. (2021)** was to determine the occurrence and potential causes of stress, anxiety, and depression in undergraduate health science

students. A survey comprising socio-demographic variables and DASS-21 was employed to evaluate psychological distress. The findings indicated that 65% of the students experienced stress, 85.1% experienced anxiety, and 51.4% experienced depression. Inadequate sleep and weariness were identified as risk factors for anxiety and depression, while experiencing low-grade fever and frequent headaches were associated with increased risk of anxiety and stress. A significant percentage of health science students were experiencing stress, anxiety, and depression.

Karing (2021) examined the prevalence of depression, anxiety, and stress among university students in Germany during the initial lockdown period. The study also explored the connections between potential risk and protective factors and all three outcome variables. The survey encompassed a total of 2,548 university students. The study was conducted during the initial lockdown phase in Germany in 2020. The findings indicated that the students, on average, had mild symptoms of depression and anxiety, as well as moderate levels of perceived stress. Significantly, 35.9% of the students exhibited a moderate-to-severe degree of depression, 27.7% disclosed moderate to severe indications of anxiety, and 25.1% experienced elevated levels of stress. Mindfulness and optimism were the primary protective factors against depression, anxiety, and stress. Conversely, COVID-related stressors such as concerns about academic and financial difficulties, the impact of the pandemic and media coverage, and the experience of quarantine, along with personal characteristics like neuroticism, older age, and being female, were identified as risk factors for exacerbating mental health problems and stress.

In their study, **Meeks et al. (2021)** examined the prevalence of depression, anxiety, and stress among students and faculty/staff at a Midwestern university, with the aim of comparing these rates across the two groups. The sample consisted of 448

individuals, including both students and faculty/staff, from a Midwestern institution. The study employed an electronic survey that consisted of the Depression, Anxiety, and Stress Scale, which comprised 21 questions. Additionally, the survey investigated individual coping strategies and perceived obstacles to accessing mental health services. Findings indicated that around 33% of the campus community encountered severe or exceedingly severe symptoms. Notable disparities were seen between faculty/staff and students in terms of coping strategies and perceived obstacles to seeking professional mental health care.

In their study, **Astutik et al. (2020)** sought to quantify the prevalence and intensity of depression, anxiety, and stress, as well as identify the factors that contribute to these mental health conditions, among undergraduate students attending a newly built remote campus in Indonesia. The cross-sectional study took place in Banyuwangi, East Java, between September and December 2017. A total of 229 pupils were picked using cluster sampling in a random manner. The assessment of mental health state was conducted with the Depression, Anxiety, and Stress Scale. The study revealed that the rates of depression, anxiety, and stress among these students were 25.0%, 51.1%, and 38.9% correspondingly. Education level shown a correlation with depression and stress, but not with anxiety. The probabilities of depression were considerably higher among fifth semester students in comparison to seventh semester students. None of the variables had a significant association with the manifestation of anxiety. The study determined that students in their fifth semester exhibited a higher susceptibility to depression, anxiety, and stress in comparison to students at an advanced stage of education.

In their study, **Gao et al. (2020)** conducted a longitudinal investigation to analyse the disparities between genders in terms of depression, anxiety, and stress among college

students during their four years of academic study. Additionally, the researchers aimed to investigate potential factors connected to anxiety specifically among first-year students. The study examined a total of 1892 undergraduate students from 15 universities in China, comprising 898 girls and 994 males. The students were observed for a duration of four years and were administered a survey that included the Depression Anxiety Stress Scale-21 questionnaire, as well as their socio-demographic information and educational background. The findings indicated that, on average, both female and male college students experienced a moderate level of anxiety over the initial three years. Female students exhibited considerably greater levels of anxiety compared to male students in both the first and second years. However, there was no notable gender disparity in the average levels of depression and stress among the students. A much greater number of female students exhibited anxiety levels over the usual threshold, while a higher percentage of male students reported varying degrees of depression. No substantial gender disparities were observed in relation to stress issues. There was a strong positive association between anxiety and introversion. Anxiety levels among female freshman were shown to be linked to their body image, drinking patterns, and academic achievement.

Ramón-Arbués et al. (2020) conducted a study to determine the frequency of depression, anxiety, stress symptoms, and related factors among a group of college students. A cross-sectional study was conducted to assess psychological distress in a sample of 1074 college students using the Depression, Anxiety, and Stress Scale (DASS-21). The survey revealed a moderate occurrence of depression (18.4%), anxiety (23.6%), and stress (34.5%) symptoms among students. Problematic Internet use, smoking, sleeplessness, and low self-esteem were each found to be independently related with symptoms of depression, anxiety, and stress. Females, cohabitation with family, having a

stable romantic relationship, frequent alcohol consumption, and poor nutritional habits were found to be significantly correlated with symptoms of stress. Not having a stable romantic relationship was significantly associated with depressive symptoms, while frequent alcohol consumption was significantly associated with symptoms of anxiety. The study found that there is a moderate occurrence of depression, anxiety, and stress symptoms among college students.

Amir Hamzah et al. (2019) conducted a study to assess the frequency of depression, anxiety, and stress among first-year undergraduate students at the University of Malaya, and to identify the factors that were linked to depression, anxiety, and stress. This study followed a cross-sectional design. In the first phase of data collection, the mental health status of the respondents was evaluated using the Depression, Anxiety and Stress Scale-21 (DASS-21) questionnaire. During the second phase, anthropometric measurements such as height, weight, waist circumference, and blood pressure were recorded. Out of a total of 1602 pupils, the occurrence of moderate to extremely severe depression was 21%, anxiety affected 50%, and stress affected 12% students. Evidence indicated that students residing with individuals not part of their immediate family were more prone to experiencing depression, anxiety, and stress. Individuals having a preexisting medical history were found to have a higher likelihood of experiencing anxiety.

In their study, **Dalky and Gharaibeh (2019)** assessed the levels of depression, anxiety, and stress in college students in Jordan. Additionally, they investigated the students' knowledge and understanding of the mental health resources that are accessible to them. A sample of 600 participants was assessed using the Depression, Anxiety, and Stress Scale. Students responded to inquiries regarding the use of mental health resources available on campus. The findings revealed that college students exhibit

a moderate degree of sadness, a severe degree of anxiety, and a moderate degree of stress. 50% of the participants were unaware of the availability of psychological support services, although 54.4% of them reporting experiencing problems.

Vasugi, S & Hassan (2019) conducted a study to determine the extent of depression, anxiety, and stress experienced by postgraduate students. Additionally, it examined the relationship between depression, anxiety, and stress in connection to gender, marital status, and age. The study employed a quantitative survey and correlational research methodology. A clustered random sampling method was used to choose participants from the entire population of postgraduate students (179) in the Faculty of Education. The DASS-21 was employed as an assessment instrument to measure levels of depression, anxiety, and stress in postgraduate students. The study findings indicated that most of the participants experience a moderate level of depression, anxiety, and stress. Concurrently, there existed significant relationships among depression, anxiety, and stress. Nevertheless, there were no notable disparities in the level of depression, anxiety, and stress when considering demographic variables such as gender, marital status, and age.

Haq et al. (2018) conducted a psychometric study on depression, anxiety and stress among university students. This study examined the correlation between depression, anxiety, and stress among university students and their socio-demographic attributes. A total of 361 pupils' data was gathered utilising the DASS-21 scale. The findings indicated that male students exhibited higher levels of despair, stress, and anxiety compared to their female counterparts. The parameters were not significantly influenced by family type. Perceptions were also influenced by the residential status and educational background of parents. Students whose parents with higher levels of education exhibited reduced symptoms of depression, anxiety, and stress.

Patil et al (2018) conducted a study to evaluate the levels of depression, anxiety, and stress among medical students and analyse their socio-demographic characteristics. This study was conducted on the entire group of 101 medical students in their seventh semester. Within the sample of 101 students, there were 58 males and 43 girls. The study utilised a pre-designed, pre-tested, semi-structured questionnaire consisting of two parts: socio-demographic information and the DASS 21. In the study, anxiety exhibited a greater prevalence in comparison to depression and stress, with male students demonstrating a higher inclination towards anxiety than female students.

In their study, **Abdel Wahed and Hassan (2017)** examined the frequency of psychological mood disorders and their correlation with certain parameters. A cross-sectional questionnaire-based study was conducted among medical students at Fayoum University. The assessment conducted using a condensed version of DASS-21, in conjunction with a pretested Sociodemographic questionnaire. Out of the 442 students that took part in the study, the occurrence of stress, anxiety, and depression at different levels was found to be 62.4%, 64.3%, and 60.8% correspondingly. Female sex, older age, and BMI were found to have a significant association with higher stress and anxiety ratings. There was a positive correlation between depression score and age, as well as a negative correlation with socioeconomic status. Additionally, pupils from different governorates had higher depression scores. The survey concluded that a significant percentage of medical students were experiencing depression, stress, and anxiety. Significant characteristics related with this condition included being female, advancing age, and being overweight or obese.

Alim et al. (2017) conducted a study to evaluate the levels of depression, anxiety, and stress among first-year MBBS students. This study was conducted in Khulna Medical College, Bangladesh from December 2009 to July 2010. It was a cross-sectional and

descriptive study. A sample of 105 pupils was selected for this purpose. The users provided their personal information and completed the Bengali version of DASS-21 scale. The study revealed that the prevalence rates of depression, anxiety, and stress among students were 54.3%, 64.8%, and 59.0%, respectively. There was no discernible correlation between gender disparity and the presence of depression, anxiety, or stress. There was a positive correlation between age and the presence of depression and stress. The prevalence of depression, anxiety, and stress among first year MBBS students was exceedingly high.

Basudan et al. (2017) tried to assess the prevalence and severity of depression, anxiety, and stress among undergraduate dental students by employing the Depression, Anxiety, and Stress Scale (DASS-21). The cross-sectional survey was done throughout the months of November and December in 2014. Out of the 289 dental students that were invited, 247 students were considered as final sample. The survey was conducted among eligible participants using a self-reported questionnaire consisted of the validated DASS-21 scale and questions regarding demographic features and strategies for stress management. 55.9% of the study participants exhibited elevated levels of depression, while 66.8% showed heightened levels of anxiety. Additionally, 54.7% of the subjects displayed abnormal levels of stress. A multiple linear regression analysis identified several predictors: gender, satisfaction with faculty relationships, satisfaction with peer relationships, and dentistry as the first choice for field of study. The standardised coefficients indicated the correlation and magnitude of the predictors for each subscale. In order to manage stress, students partook in a range of activities including reading, watching television, and seeking emotional solace from others.

Ediz et al. (2017) conducted a study involving 928 medical students in Turkey used the Depression, Anxiety, and Stress Scale and Beck Depression and Anxiety

Inventories to assess their mental well-being. Results showed that 30.5% of students had mild to moderate depression, while 8.5% had severe to extremely severe depression. Female students had a higher prevalence of depression and anxiety. First-year students, those in disadvantaged economic situations, and those dissatisfied with their medical education had a higher prevalence of depression. Both Beck inventories and anxiety scales could be used for non-clinical evaluation.

In their study, **Fawzy & Hamed (2017)** aimed to identify the prevalence of depression, anxiety, and stress symptoms among medical students enrolled in a public university in Upper Egypt. Additionally, they intended to establish the association between these mental health conditions and the students' socio-demographic factors. The research employed a cross-sectional design and involved a total of 700 students. The study included a self-administered questionnaire to gather information on socio-demographic variables, as well as the use of the Depression Anxiety Stress Scale (DASS 21) and the Pittsburgh Sleep Quality Index (PSQI) questionnaire. A significant prevalence of depression (65%), anxiety (73%), and stress (59.9%) was documented. The stress scores exhibited a statistically significant increase compared to the scores for anxiety and depression. 55.7% of the individuals experienced poor sleep quality. It was found that females, individuals residing at the University campus or students' residence facility, those in the preclinical years, and those with inferior academic achievement had higher scores of DASS and PSQI compared to their counterparts. Notable associations were observed between stress and depression, anxiety, and PQSI scores. The study's findings indicated that depression, anxiety, and stress symptoms were prevalent among medical students in Egypt.

Moutinho et al. (2017) conducted a study to determine the prevalence of anxiety, depression, and stress among medical students at a Brazilian medical school throughout

all semesters, as well as to evaluate the factors related with these conditions. A cross-sectional study was conducted on students from all twelve semesters of a medical school in Brazil. Students completed a survey that consisted of questions about their socio-demographic characteristics, religiosity (measured using the Duke Religion Index), and mental health (measured using the DASS-21 Scale). A total of 761 students, accounting for 75.4% of the participants, completed the questionnaire. Among them, 34.6% reported experiencing depressive symptomatology, 37.2% exhibited anxiety symptoms, and 47.1% had signs of stress. Statistically significant disparities were observed in the levels of anxiety between the first and tenth semesters, as well as between the first and eleventh semesters. Similarly, a significant difference in depression was reported between the first and second semesters. Furthermore, variations in stress levels were identified between the seventh and twelfth semesters, the tenth and twelfth semesters, and the eleventh and twelfth semesters. The factors linked to stress was female gender, anxiety, and depression. Depression was associated with female gender, intrinsic religiosity, anxiety, and stress. Anxiety was influenced by the course semester, depression, and stress.

Basu et al. (2016) conducted a study to determine the frequency of Depression, Anxiety, and Stress among Nursing students at a tertiary care teaching institution in Kolkata. A descriptive cross-sectional study was conducted at the School of Nursing in a tertiary care Government teaching hospital in Kolkata from April 2016 to May. The study involved 129 students who were assessed using the DASS 21 scale. The data were analysed using SPSS 23, with percentages being utilised. Approximately one-third (33.33%) of the students exhibited varying degrees of depression, while more than half (56.59%) had moderate to intense levels of anxiety. Additionally, around one-fourth (23.26%) reported moderate to extreme levels of stress.

Rathnayake & Ekanayaka (2016) investigated the prevalence of depression, anxiety, and stress, as well as the factors related with these conditions, among undergraduate nursing students in Sri Lanka. The cross-sectional study was conducted in the Department of Nursing, Faculty of Allied Health Sciences, University of Peradeniya. A deliberate sample of 92 undergraduate nursing students successfully filled out a pre-tested self-administered questionnaire. The Sinhala version of the Depression, Anxiety and Stress Scale was used to assess levels of depression, anxiety, and stress. Among the sample, 59.8% reported symptoms of anxiety, while a significant majority of 82.6% expressed symptoms of stress. The study revealed a strong positive correlation between depression and anxiety, between depression and stress, and between anxiety and stress. The variables linked to depression included age, academic year of the students, satisfaction with the nursing programme, physical well-being factors, possible stressors, self-rated physical health, and self-rated mental health. The variables associated with anxiety were age, self-rated physical health, and self-rated mental health. The variables related to stress were possible stressors, self-rated physical health, and self-rated mental health.

In their study, **Wani et al. (2016)** examined the impact of gender and faculty on levels of stress, anxiety, and depression. Additionally, the study aimed to determine the extent of stress, anxiety, and depression among male and female students in the fields of science and arts. The study comprised a sample of 260 students. The DASS-42 scale was used to quantify levels of stress, anxiety, and depression. The results indicated that female students are more susceptible to stress, anxiety, and depression compared to male students. Science students exhibit a higher prevalence of stress, anxiety, and depression compared to arts students. The findings also demonstrated that both gender and faculty exert a substantial influence on stress, anxiety, and depression.

Beiter et al. (2015) examined possible factors associated with depression, anxiety, and stress in a group of university students. The ultimate sample comprised 374 undergraduate students aged 18 to 24 who were enrolled at Franciscan University in Steubenville, Ohio. Participants were administered a survey that included demographic inquiries, a portion prompting them to assess the degree of concern related to various obstacles encountered in everyday life (such as academics, family, and sleep), and the 21-item version of the Depression Anxiety Stress Scale (DASS21). The findings revealed that the primary concerns were centred around academic performance, the burden of achieving success, and future plans after graduation. From a demographic standpoint, the individuals who had the highest levels of stress, anxiety, and depression were students who had transferred from another institution, students in their later years of study, and those who resided off-campus.

Kugbey et al. (2015) investigated the influence of social support from family, friends, and significant others on the levels of depression, anxiety, and stress among undergraduate students at the University of Ghana. A sample of 165 students from all academic levels participated in the study. They were given standardised questionnaires to assess social support, depression, anxiety, and stress. The research revealed that 57% of the participants reported varying degrees of depression ranging from light to extremely severe. Additionally, 84% of the respondents experienced mild to extremely severe anxiety, while 49% reported mild to extremely severe stress. The degree of depression was strongly determined by the support received from friends and significant others. However, the level of anxiety was not significantly influenced by any type of social support. On the other hand, the level of stress experienced by students was significantly predicted by the support they received from their family. Subsequent examination revealed notable disparities between sexes in the degrees of depression, anxiety, and

stress. Nevertheless, the academic proficiency of students exerted a noteworthy impact on their level of depression, whereas it did not have a similar influence on their stress and anxiety levels.

Kulsoom et al. (2015) examined the characteristics of depression, anxiety, and stress among students and their possible underlying causes. A total of 575 medical students from all five years of study actively engaged in the study by anonymously completing the Depression, Anxiety, and Stress Scale-21 (DASS-21) questionnaire on two occasions. There were two distinct periods when studying was important: the pre-examination period, which occurred 2-3 weeks before a major exam, and the post-examination period, which took place during normal classes. The majority included offspring of expatriate labourers in Saudi Arabia, encompassing individuals of Arab, South Asian, and North American descent. The incidence of depression, anxiety, and stress was significant, but it decreased to some degree following the examinations. Saudi individuals and those who had participated in the premedical university preparatory programme (UPP) exhibited elevated DASS-21 scores. Higher levels of depression, anxiety, or stress were predicted by smoking and being female. The pupils attributed their high DASS-21 scores mostly to the curriculum and scheduling.

Iqbal et al. (2015) evaluated the occurrence of depression, anxiety, and stress among medical undergraduate students. A cross-sectional survey was conducted using a self-administered, pre-designed, pre-tested anonymous questionnaire that included the Depression Anxiety Stress Scale (DASS 42). The questionnaire included information on basic socio-demographic factors (such as age, gender, and semester) and personal characteristics (such as alcohol and nicotine usage, and academic performance). A majority of the participants experienced depression (51.3%), anxiety (66.9%), and stress (53%). There was a higher incidence of illness among students in the 5th semester

compared to students in the 2nd semester. Women reported greater scores compared to men. The perception of self-assessment in academics was positively correlated with higher scores.

In their study, **Chernomas and Shapiro (2013)** examined the impact of stress, depression, and anxiety (SDA) on nursing students enrolled in a undergraduate programme. They discovered that SDA can hinder the learning process, negatively influence academic performance, and impede the ability to function effectively in clinical practice. The study identified clinical practice, coping mechanisms, personal matters, and the juggling of school, work, and personal life as the primary themes. The results indicated that to enhance students' mental health and academic performance, it was important to take into account curriculum design, comprehension of programme requirements, and improved accessibility to mental health support services.

Kumaraswamy (2013) authored a comprehensive review article that details the studies conducted over the past thirty years, with a particular focus on stress, anxiety, and depression. The study examined stress levels in college students, the characteristics of psychiatric illnesses, emotional difficulties, and the psychological challenges faced by college students. The need of counselling in addressing students' emotional issues was highlighted, along with the recommendation to establish student counselling clinics as a preventive step. It was also urged to raise awareness among college students about the availability of counselling services. All colleges should implement a mandatory mentor-mentee system. Each college should establish a student health committee comprising mental health specialists. Regular seminars and workshops should be arranged for instructors and college students, focusing on various psychological disorders and their corresponding coping techniques.

Shamsuddin et al. (2013) conducted a study with the objective of determining the prevalence of depression, anxiety, and stress among university students, as well as identifying factors associated with these conditions. A cross-sectional study was undertaken on a sample of 506 students, aged between 18 and 24 years, who were enrolled in four public universities located in the Klang Valley region of Malaysia. They were evaluated using the Depression Anxiety Stress Scale-21 (DASS-21) through a confidential, self-administered questionnaire. Information regarding socio-demographic factors, family features, and living arrangements was also collected. The analysis revealed that 27.5% of all students experienced moderate depression, while 9.7% experienced severe or extremely severe depression. Additionally, 34% of students reported moderate anxiety, while 29% reported severe or extremely severe anxiety. Furthermore, 18.6% of students had moderate stress scores, and 5.1% had severe or extremely severe stress scores. Older students (20 years and above) and individuals born in rural regions exhibited significantly higher ratings in both depression and anxiety. Higher stress scores were substantially more prevalent among older students (20 years and above), females, Malays, and individuals from families with either low or high incomes, as opposed to those with moderate incomes.

Bayram & Bilgel (2008) investigated the prevalence of depression, anxiety, and stress in a cohort of Turkish college students. The Depression Anxiety and Stress Scale (DASS-42) was administered anonymously to 1,617 pupils in their individual classrooms. Among the respondents, 27.1% experienced depression at a moderate severity level or higher, 47.1% experienced anxiety at a moderate severity level or higher, and 27% experienced stress at a moderate severity level or higher. Female pupils had elevated levels of anxiety and tension. First and second year students had higher levels of sadness, anxiety, and stress compared to their peers. Students who expressed contentment with

their schooling exhibited lower levels of depression, anxiety, and stress compared to those who did not express contentment.

Inam (2007) evaluated the frequency of anxiety and depression among medical students at a medical college in Saudi Arabia. A cross-sectional study was conducted on premedical students in their first, second, and third years at the College of Medicine, Qassim University. The Self-administered questionnaire, known as the Aga Khan University Anxiety and Depression Scale (AKUADS), was utilised to evaluate levels of anxiety and depression. During the research period, the college had a combined enrolment of 288 male students and 105 female students. The male and female response rates were 68.7% and 99.0% respectively. The overall incidence rates of anxiety and depression were 66.6% in females and 44.4% in males. Neither males nor females reported any suicidal ideation.

2.2 Statement of the Problem

Prior researches have pointed out the significance of ecospirituality as well as mental health concerns such as depression, anxiety, and stress, among students in higher education globally. However, there is a scarcity of study on the topic of assessing the influence of higher education students' ecospirituality on their depression, anxiety, and stress. Therefore, it can be inferred that researchers have yet to address the void in the current knowledge base of this specific topic. The present researcher also identified that there have been no studies undertaken on this specific topic in India, particularly in West Bengal.

To fill the knowledge gap, the researcher has identified the research problem- ***"The relationship between higher education students' ecospirituality and their depression, anxiety, stress."***

2.3 Delimitations

The study was delimited to the following-

a) The study was conducted only in West Bengal.
b) The population and sample were delimited to current students of academic session 2023-24 at higher education level (i.e., undergraduate students, postgraduate students).
c) Very few social-demographic characteristics (Gender, Age, Habitat, Family Type, Religion, Social Category) of the participants were considered, along with their basic academic details (Course Level, Stream of Study).
d) Ecospirituality and depression, anxiety, stress, were measured using self-reported questionnaires only.
e) The study did not take into account the scores of individual dimensions in the Ecospirituality Scale. Instead, it measured the ecospirituality construct by considering the total score of the all twenty items in the Ecospirituality Scale.
f) Only 1289 students from 26 colleges and 10 universities were included in this study.

2.4 Research Questions

In order to explore the identified research problem, research questions of the present study were specified as-

a. What is the prevalence of ecospirituality among higher education students?
b. Whether socio-demographic, and academic factors result in variation in the higher education students' ecospirituality?

c. What are the levels of depression, anxiety and stress among higher education students?

d. Whether socio-demographic and academic factors are related to higher education students' depression, anxiety and stress?

e. Whether the higher education students' ecospirituality is related to their depression, anxiety and stress?

2.5 Objectives

Based on the research questions following objectives were identified-

a) To check the prevalence of ecospirituality among higher education students.

b) To check for variation in ecospirituality of the higher education students with respect to their socio-demographic and academic factors.

c) To check the levels of depression among higher education students.

d) To investigate the associations between levels of depression and socio-demographic characteristics (Gender, Age, Habitat, Family Type, Religion, Social Category) as well as academic characteristics (Course Level, Stream of Study) of the higher education students.

e) To check the levels of anxiety among higher education students.

f) To investigate the associations between levels of anxiety and socio-demographic characteristics (Gender, Age, Habitat, Family Type, Religion, Social Category) as well as academic characteristics (Course Level, Stream of Study) of the higher education students.

g) To check the levels of stress among higher education students.

h) To investigate the associations between levels of stress and socio-demographic characteristics (Gender, Age, Habitat, Family Type, Religion, Social Category) as

well as academic characteristics (Course Level, Stream of Study) of the higher education students.

i) To find out the relationship between ecospirituality and depression among higher education students.

j) To find out the relationship between ecospirituality and anxiety among higher education students.

k) To find out the relationship between ecospirituality and stress among higher education students.

2.6 Hypotheses

Based on the research objectives, following null hypotheses were constructed-

$H_0$1: There is no significant difference in Ecospirituality Score of the students in terms of Gender.

$H_0$2: There is no significant relationship between Ecospirituality Score and Age of the students.

$H_0$3: There is no significant difference in Ecospirituality Score of the students in terms of Habitat.

$H_0$4: There is no significant difference in Ecospirituality Score of the students in terms of Family Type.

$H_0$5: There is no significant difference in Ecospirituality Score of the students in terms of Religion.

$H_0$6: There is no significant difference in Ecospirituality Score of the students in terms of Social Category.

$H_0$7: There is no significant difference in Ecospirituality Score of the students in terms of Course Level.

$H_0$8: There is no significant difference in Ecospirituality Score of the students in terms of Stream of Study.

$H_0$9: There is no significant relationship between Levels of Depression and Gender of the students.

$H_0$10: There is no significant relationship between Depression Score and Age of the students.

$H_0$11: There is no significant relationship between Levels of Depression and Habitat of the students.

$H_0$12: There is no significant relationship between Levels of Depression and Family Type of the students.

$H_0$13: There is no significant relationship between Levels of Depression and Religion of the students.

$H_0$14: There is no significant relationship between Levels of Depression and Social Category of the students.

$H_0$15: There is no significant relationship between Levels of Depression and Course Level of the students.

$H_0$16: There is no significant relationship between Levels of Depression and Stream of Study of the students.

$H_0$17: There is no significant relationship between Levels of Anxiety and Gender of the students.

$H_0$18: There is no significant relationship between Anxiety Score and Age of the students.

$H_0$19: There is no significant relationship between Levels of Anxiety and Habitat of the students.

$H_0$20: There is no significant relationship between Levels of Anxiety and Family Type of the students.

$H_0$21: There is no significant relationship between Levels of Anxiety and Religion of the students.

$H_0$22: There is no significant relationship between Levels of Anxiety and Social Category of the students.

$H_0$23: There is no significant relationship between Levels of Anxiety and Course Level of the students.

$H_0$24: There is no significant difference in Anxiety Score in terms of Stream of Study of the students.

$H_0$25: There is no significant relationship between Levels of Stress and Gender of the students.

$H_0$26: There is no significant relationship between Stress Score and Age of the students.

$H_0$27: There is no significant relationship between Levels of Stress and Habitat of the students.

$H_0$28: There is no significant relationship between Levels of Stress and Family Type of the students.

$H_0$29: There is no significant relationship between Levels of Stress and Religion of the students.

$H_0$30: There is no significant relationship between Levels of Stress and Social Category of the students.

$H_0$31: There is no significant relationship between Levels of Stress and Course Level of the students.

$H_0$32: There is no significant relationship between Levels of Stress and Stream of Study of the students.

$H_0$33: There is no significant relationship between Ecospirituality Score and Depression Score of the students.

$H_0$34: There is no significant relationship between Ecospirituality Score and Anxiety Score of the students.

$H_0$35: There is no significant relationship between Ecospirituality Score and Stress Score of the students.

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CHAPTER III

METHOD AND PROCEDURE

CHAPTER III METHOD AND PROCEDURE

The Method and Procedure chapter constructs an overall picture of the research design and its implementation by the researcher. The method section gives insight about the population and sample of the study, variables, data collecting tools and validity as well as reliability of the tools. The procedure section depicts data collection, quality of the collected data, its tabulation and analysis technique.

3.1 Method

The present researcher aimed to study the role of ecospirituality in coping with depression, anxiety, and stress among higher education students in West Bengal. To fulfil that purpose, the researcher initiated a mixed mode survey (mostly 'paper and pencil survey' and few 'web-based survey') in the all twenty-three districts in West Bengal. Purposive sampling technique was used in this study. The research approach of the study was fundamentally quantitative along with qualitative explanations.

3.1.1 Study Design

Cross-sectional surveys can offer a comprehensive depiction of the prevailing phenomena, beliefs, trends, attitudes, opinions, or values within a population. Its purpose is to validate the present state or facilitate informed enhancements. Ecospirituality and depression, anxiety, stress can be precisely measured in this cross-sectional survey design framework. So, the researcher applied cross-sectional survey design for this study.

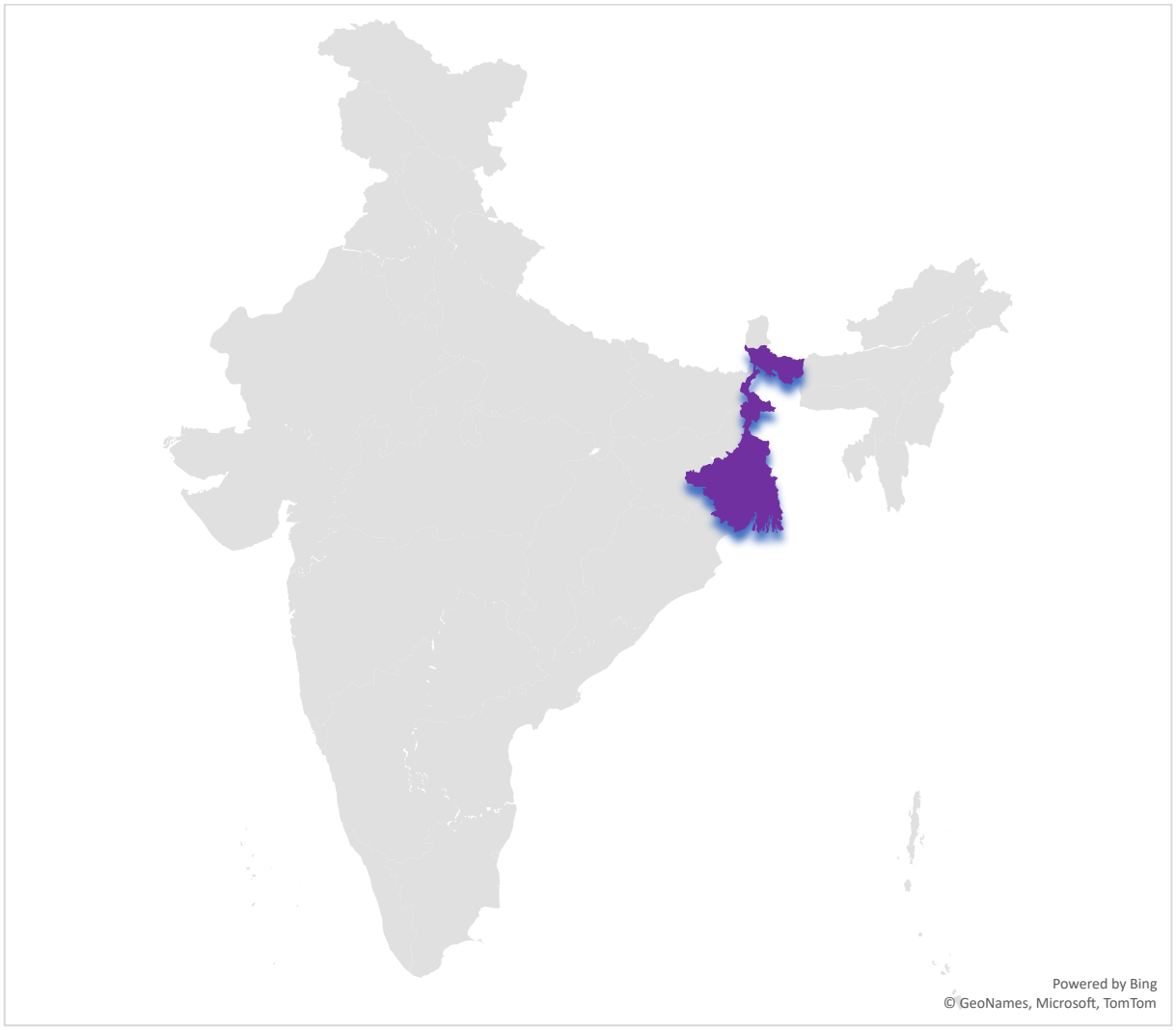
3.1.2 Population

The current students (academic session 2023 – 2024) studying in various

undergraduate courses and the present students studying in different postgraduate courses at colleges and universities in West Bengal were the target population of the study. The latest available AISHE (2021 - 2022) report revealed that the total number of students studying at undergraduate and postgraduate level in West Bengal was 24,90,352. The present survey was conducted in 2023 - 2024. In between 2021 - 22 to 2023 - 24, no such revolutionary incident happened that could positively or negatively impact on students' enrollment and retention in higher education institutions in West Bengal. So, for the present study, the population estimation was around 25 lakhs.

Figure 3.1

Geographical distribution of the Population highlighted in violet colour

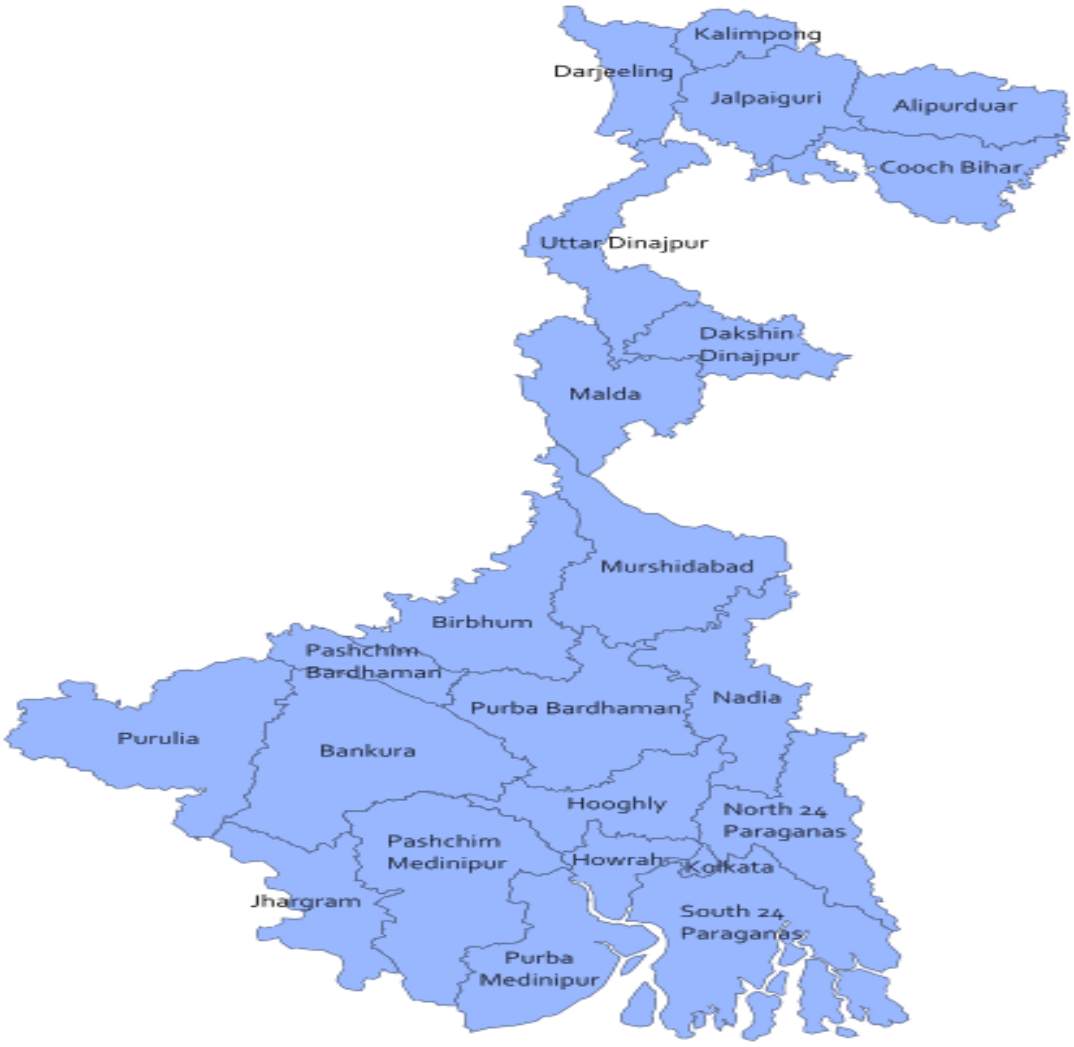


3.1.3 Sample

A precise sample size that represents the population is necessary for undertaking any quantitative study. The calculated sample size required for 25 lakhs students at 95% confidence level and 5% margin of error was 385. The sample size of this current research was 1289 which was more than three times higher than the required sample size. Through purposive sampling technique, the students of the sample were selected from twenty-three districts in West Bengal.

Figure 3.2

Region of the collected Sample shown with names



3.1.4 Variables

The theoretical assumptions on ecospirituality and depression, anxiety, stress as well as research trends in this field paved the way for selecting some variables. The explanatory variables were broadly categorized into two groups namely socio-demographic variables and academic variables. The category of socio-demographic variables included six variables i.e., Gender, Age, Habitat, Family Type, Religion, Social Category. The academic variables included two variables i.e., Course Level, Stream of Study. Here, the construct ecospirituality was measured by the variable Ecospirituality Score that was obtained from Ecospirituality Scale constructed by Suganthi in 2019. Likewise, the constructs depression, anxiety, and stress were measured by the variables namely Levels of Depression, Levels of Anxiety, and Levels of Stress respectively obtained from the scores in DASS-21 constructed by Lovibond and Lovibond in 1995.

The operational variables are-

a) Gender: Categorical variable considering only two categories i.e., Male and Female.
b) Age: Non-discrete variable considering the biological age (in years) of the students.
c) Habitat: Categorical variable considering the living locality of the students, has three categories only i.e., Panchayat, Municipality, and Municipal Corporation.
d) Family type: Categorical variable considering two types viz, Nuclear Family, and Joint Family.
e) Religion: Categorical variable considering three categories viz, Hinduism, Islam, and Christianity.
f) Social category: Categorical variable considering four categories i.e., Unreserved, Scheduled Caste, Scheduled Tribe, and Other Backward Class.

g) Course level: Categorical variable considering two levels of higher education namely Undergraduate, and Postgraduate.

h) Stream of study: Categorical variable considering only four streams namely Science, Humanities, Commerce, Engineering.

i) Ecospirituality Score: Non-discrete variable obtained from the Ecospirituality scale administered in the present study.

j) Levels of Depression: Categorical variable consisting of five levels obtained from the score on Depression scale of DASS-21 administered in the present study.

k) Levels of anxiety: Categorical variable consisting of five levels obtained from the score on Anxiety scale of DASS-21 administered in the present study.

l) Levels of stress: Categorical variable consisting of five levels obtained from the score on Stress scale of DASS-21 administered in the present study.

Figure 3.3

Chart showing Categorical Variables of the study

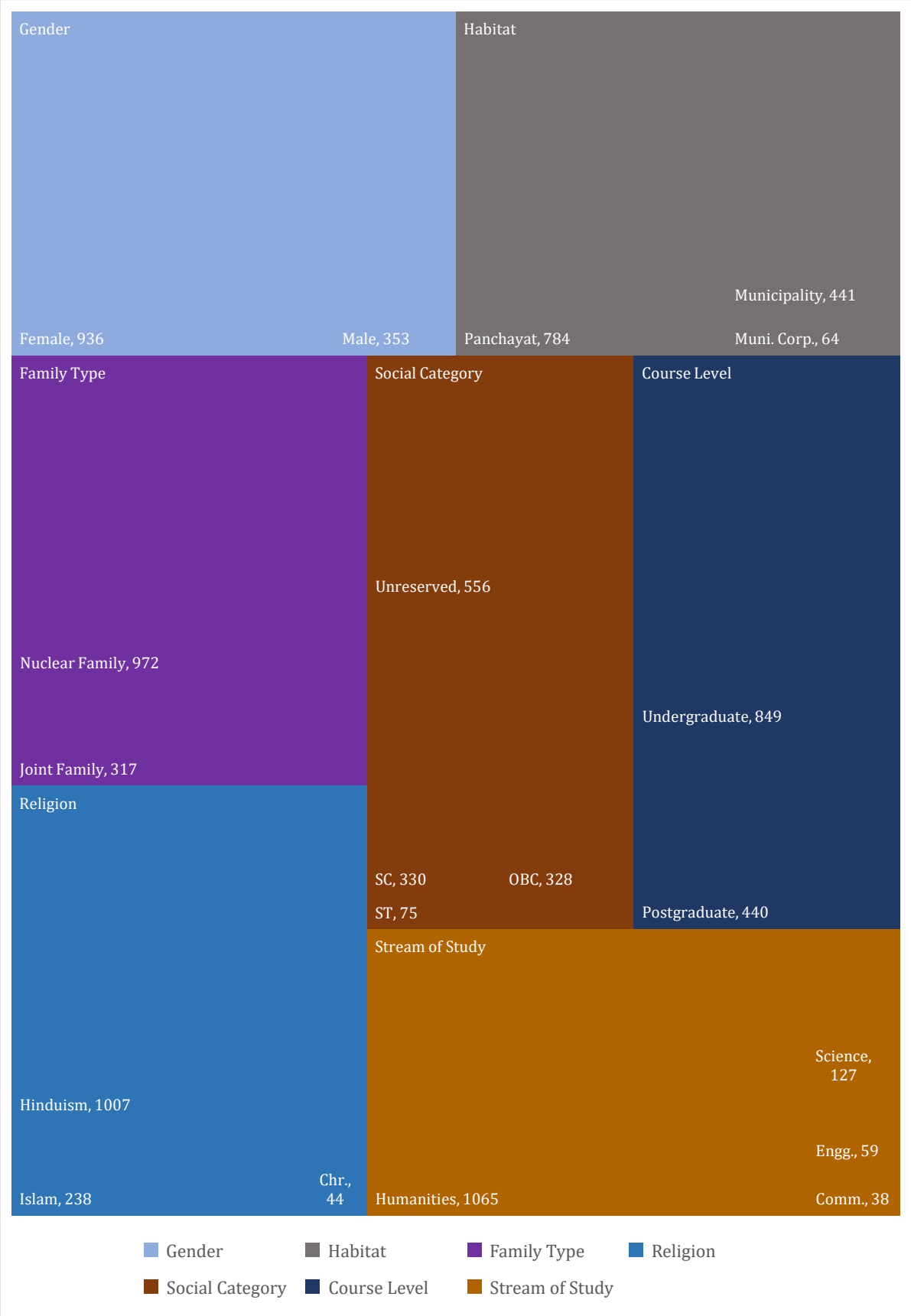


Table 3.1

Distribution of Sample data based on the explanatory variables

Variable / Level	Number of Students	Percentage within Sample
Gender		
Female	936	72.6%
Male	353	27.4%
Age		
Range (18years to 25years)	1289	100%
Habitat		
Panchayat	784	60.8%
Municipality	441	34.2%
Municipal Corporation	64	5%
Family Type		
Nuclear Family	972	75.4%
Joint Family	317	24.6%
Religion		
Hinduism	1007	78.1%
Islam	238	18.5%
Christianity	44	3.4%
Social Category		
Unreserved	556	43.13%
Scheduled Caste	330	25.6%
Scheduled Tribe	75	5.82%
Other Backward Class	328	25.45%
Course Level		
Undergraduate	849	65.9%
Postgraduate	440	34.1%
Stream of Study		
Science	127	9.9%
Humanities	1065	82.6%
Commerce	38	2.9%
Engineering	59	4.6%

Table 3.2

Distribution of Sample data based on Educational Institution

Educational Institution	Number of Students	Percentage within Sample
College		
Acharya Brojendra Nath Seal College	21	1.63%
Balurghat Mahila Mahavidyalaya	10	0.78%
Barasat Government College	23	1.78%
Bolpur College	8	0.62%
Chandernagore College	27	2.09%
Chandraketugarh Sahidullah Smriti Mahavidyalaya	11	0.85%
Dr. B. R. Ambedkar College	17	1.32%
Dr. Gour Mohan Roy College	29	2.25%
Govt. General Degree College, Narayangarh	8	0.62%
Haldia Government College	14	1.09%
Hooghly Mohsin College	49	3.80%
Jagannath Kishore College	12	0.93%
Jangipur College	25	1.94%
Jhargram Raj College	9	0.70%
Kalimpong College	13	1.01%
Kalna College	26	2.02%
Lilabati Mahavidyalaya	10	0.78%
Malda College	14	1.09%
Malda Women's College	8	0.62%
Manikchak College	7	0.54%
Moyna College	6	0.47%
Rammohan College	33	2.56%
Serampore College	48	3.72%
Sukanta Mahavidyalaya	17	1.32%
Taki Government College	12	0.93%
Uluberia College	107	8.30%
University		
Bankura University	15	1.16%
Cooch Behar Panchanan Barma University	112	8.69%
Diamond Harbour Women's University	167	12.96%
Jadavpur University	282	21.88%
Kazi Nazrul University	46	3.57%
Murshidabad University	31	2.40%
Raiganj University	16	1.24%
University of Gour Banga	11	0.85%
University of Kalyani	19	1.47%
University of North Bengal	26	2.02%

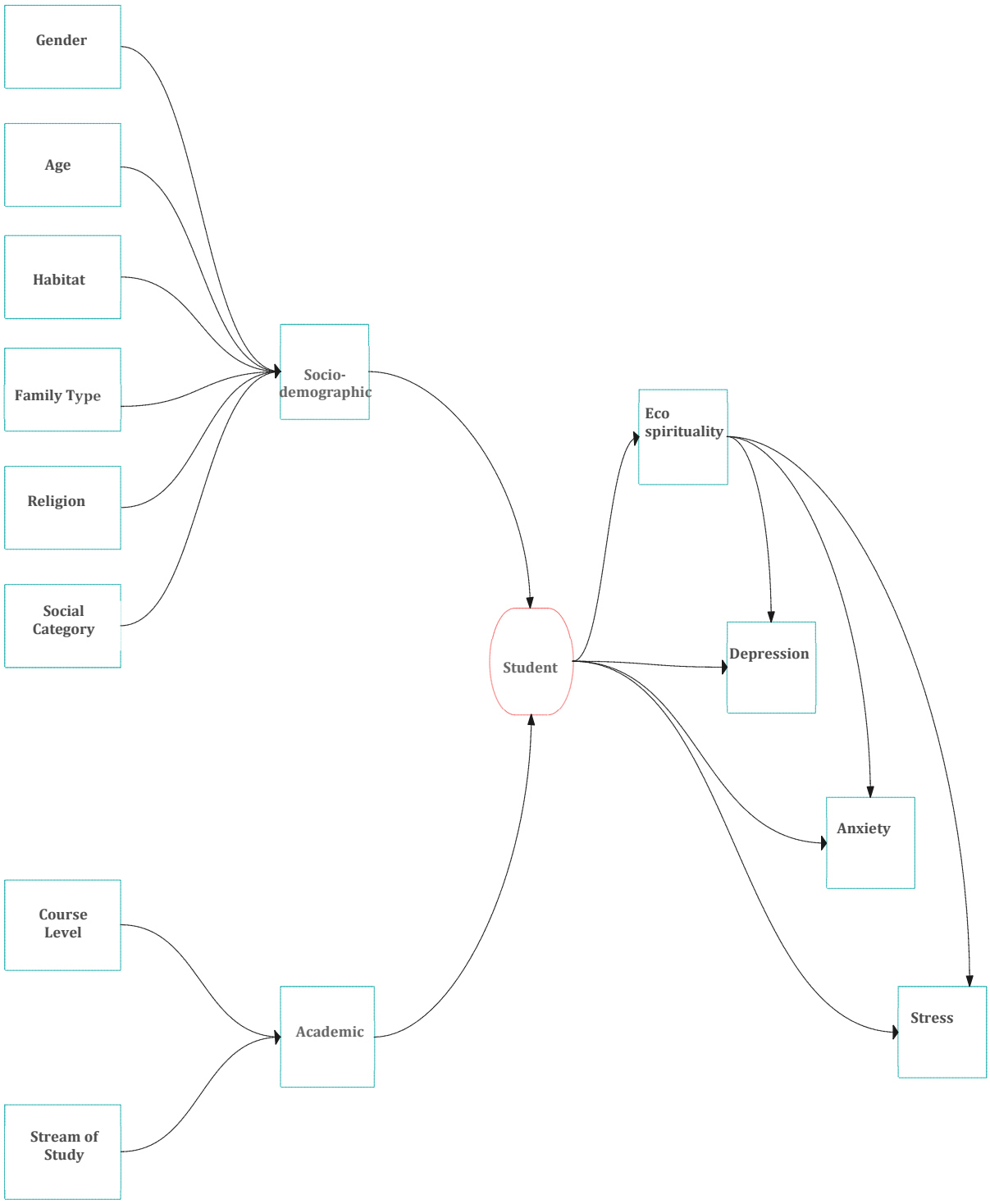
Table 3.3

Distribution of sample data based on district of Educational Institutions

District of Educational Institutions	Number of Students	Percentage within Sample
Alipurduar	10	0.78%
Bankura	15	1.16%
Birbhum	8	0.62%
Cooch Behar	133	10.32%
Dakshin Dinajpur	10	0.78%
Darjeeling	26	2.02%
Hooghly	124	9.62%
Howrah	107	8.30%
Jalpaiguri	17	1.32%
Jhargram	9	0.70%
Kalimpong	13	1.01%
Kolkata	315	24.44%
Malda	40	3.10%
Murshidabad	56	4.34%
Nadia	36	2.79%
North 24 Parganas	46	3.57%
Paschim Bardhaman	46	3.57%
Paschim Medinipur	8	0.62%
Purba Bardhaman	55	4.27%
Purba Medinipur	20	1.55%
Purulia	12	0.93%
South 24 Parganas	167	12.96%
Uttar Dinajpur	16	1.24%

Figure 3.4

Thematic Diagram of the Relationship



3.1.5 Tools for Data Collection

To collect data from each student, the present study used one information schedule about the student, the Ecospirituality Scale, and the DASS-21.

A. Information Schedule about the Student

A precise information schedule was constructed by the researcher for collecting socio-demographic and academic information from the higher education students. The information schedule recorded their name, age, gender, habitat, family type, religion, social category, course level, and stream of study.

B. Ecospirituality Scale

The Ecospirituality Scale is a self-report instrument to examine the ecospirituality construct. Suganthi (2019) constructed this scale which consisted of five factors namely Dwelling, Caring, Revering, Experiencing, and Relating. Each of the five factors of this scale has reliability coefficient Cronbach's alfa exceeding the threshold 0.7. The whole scale has good internal consistency, convergent as well as divergent validity (Suganthi, 2019). The scale has twenty items in total and no item has been negatively articulated. It is a seven-point Likert scale where the score for each item ranges from 1 (strongly disagree) i.e., the lowest score to 7 (strongly agree) viz, the highest score. The maximum score an individual can obtain from this scale is 140, whereas the lowest score is 20 for an individual participant. The total score derived from the Ecospirituality Scale represents magnitude of ecospirituality of the participants.

To administer the scale in the present study, current researcher took consent from the developer of this scale, through email.

C. **DASS-21**

The Depression Anxiety Stress Scales (DASS-21) is a short form of 42 items Depression Anxiety Scale Scales (DASS-42). It is a self-report instrument to examine three constructs (depression, anxiety, stress) separately. Lovibond and Lovibond (1995) developed this scale which contains seven items for measuring depression, seven items for anxiety and seven items for stress. The scale has twenty-one items in total and no item has been negatively articulated. Participants assess the degree to which they have encountered each symptom in the previous week using a 4-point Likert scale, with values ranging from 0 to 3 where 0 means 'did not apply to me at all', 1 means 'applied to me to some degree, or some of the time', 2 means 'applied to me to a considerable degree or a good part of time' and 3 means 'applied to me very much or most of the time'. Each of the subscales has five levels namely Normal, Mild, Moderate, Severe, and Extremely Severe.

Table 3.4

Division of scoring in the Levels of DASS-42

	Depression	**Anxiety**	**Stress**
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

DASS-21 score for each subscale must be multiplied by 2 to calculate the final score, and to be placed in the suitable level of the level-scoring matrix of DASS-42 (Henry & Crawford, 2005). The DASS-21 demonstrated strong psychometric evidence of a bifactorial structure, internal consistency within this structure, criterion validity, and support for construct validity through hypothesis testing (Lee et al., 2019). Earlier studies have provided reliable estimates of internal consistency for the original scale scores of

the DASS-21, ranging from .82 to .97. The internal consistency values were obtained from studies conducted with both clinical and nonclinical samples, such as the studies conducted by Lovibond and Lovibond in 1995, Henry and Crawford in 2005. The scale is freely available in public domain to use for research purposes and that is why any prior consent was not needed to use the scale for present study.

3.1.6 Utilized Software

The researcher used Google Forms and Google Sheets for the web-based survey. Total collected data from the web-based survey and from the paper-pencil survey, was tabulated in Microsoft Excel (of Microsoft Office 365). The statistical analyses of data were conducted using IBM SPSS 29.0 (trial version), and IBM AMOS 23.0 (trial version). Visualizations of data were created using Microsoft Excel of Microsoft Office 365. The whole document was written using Microsoft Word of Microsoft Office 365. Zotero 6.0.30 software was used to organize the references in this research paper, adhering to the APA 7th edition referencing style.

3.2 Procedure

This section reflects on the collection of data, followed by data tabulation, cleaning, and analysis.

3.2.1 Collection of Data

The researcher opted for mixed mode survey (mostly 'paper and pencil survey' and few 'web-based survey') to reduce the nonresponse bias. The extensive data collection period was continued from 4th September 2023 to 21st March 2024. For paper

and pencil survey, the researcher approached the heads of the departments or institutions to provide a clear explanation of the purpose of the study and the tools of the study. Additionally, an authorization letter given by the Head of the Department (Department of Education, Jadavpur University) provided to get the necessary data. After being forwarded by the appropriate authority, the researcher headed towards data collection. For paper and pencil survey, the researcher contacted to the Head of the Education Department, Jadavpur University; to the Principal, Uluberia College; and to the Principal, Hooghly Mohsin College. All were agreed to provide data from their students, resulting in a total of 281 respondents.

For web-based survey, the researcher personally approached the faculties of the colleges as well as faculties of the universities in West Bengal, explaining the purpose of the study and the tools of the study. After that, the google form containing the information schedule, Ecospirituality scale, and DASS-21 scale, was sent to the faculties and then the faculties circulated the form among their current undergraduate and postgraduate students. For web-based survey, the researcher contacted faculties of 10 university and 24 colleges of West Bengal. All were agreed to provide data from their students, resulting in a total of 1044 respondents.

3.2.2 Data Tabulation, Cleaning, and Analyses

A total of 1325 (281 + 1044) students at higher education level responded to the data tools administered in the present study. Data of 1044 students in web-based survey, was imported from Google Form to Google Sheet, and then in Microsoft Excel sheet. Among them, 21 students did not complete the questionnaire properly or provided multiple inputs. Data of 281 students in paper-pencil survey was manually tabulated by the researcher, in the same Microsoft Excel sheet. Among them, 15 students from paper

and pencil survey did not complete the questionnaire properly or provided multiple inputs. Therefore, these 36 (21 + 15) responses were excluded from the study. The remaining 1289 participants' data was regarded as the final sample data in this study.

The cleaned final data file was then imported to IBM SPSS, and IBM AMOS to run the statistical analyses. The statistical analyses and interpretations were articulated thoroughly in the next chapter (Chapter IV).

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CHAPTER IV

ANALYSIS AND INTERPRETATION

CHAPTER IV ANALYSIS AND INTERPRETATION

This chapter encompasses the comprehensive examination and elucidation of the data obtained from the study. To enhance understanding, the study examined both descriptive data and inferential conclusions. To begin with descriptive statistics, the mean and standard deviation were calculated. These values were then utilised in parametric inferential statistics such as Student's t-test (for equal variance), Welch's t-test (for unequal variance), one-way ANOVA, and so on. Prior to doing each inferential test, the Shapiro-Wilk test was performed to assess the normality of the data. If the normality of the data could not be determined, non-parametric test was performed. The study employed Spearman Correlation analyses to identify connections between ecospirituality and depression, ecospirituality and anxiety, as well as ecospirituality and stress. Subsequently, the extents of the relationships were justified by path analysis models.

This chapter presents the study results in a comprehensive manner, combining both the descriptive and inferential findings regarding Ecospirituality and explanatory variables (4.1.1), Depression and explanatory variables (4.1.2), Anxiety and explanatory variables (4.1.3), Stress and explanatory variables (4.1.4). After that, relationship between Ecospirituality and Depression (4.1.5), Ecospirituality and Anxiety (4.1.6), as well as Ecospirituality and Stress (4.1.7), were explored.

4.1 Ecospirituality and explanatory variables

In this part, students' ecospirituality was assessed. The results were arranged as per statistical tests used in terms of explanatory variables.

4.1a Based on Gender

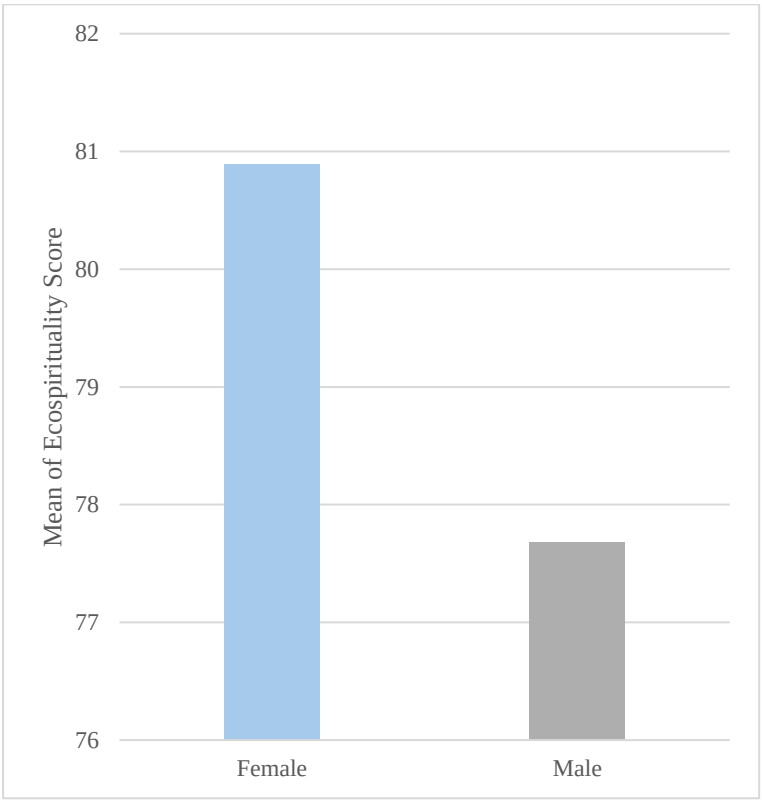
Table 4.1

Comparing Ecospirituality in terms of Gender

Gender		Ecospirituality Score
Female	Mean	80.89
	N	936
	Std. Deviation	11.759
Male	Mean	77.68
	N	353
	Std. Deviation	10.859
Total	Mean	80.01
	N	1289
	Std. Deviation	11.605

Figure 4.1

Diagram showing mean of Ecospirituality Score in terms of Gender



Interpretation of table 4.1 was as follows-

Female had higher mean Ecospirituality Score (80.89) compared to Male (77.68). Female had higher variability (SD = 11.759) than males (SD = 10.859). The overall mean Ecospirituality Score of 1289 students, was 80.01 and the standard deviation is 11.605.

Table 4.2

Tests for Ecospirituality by Gender

		Shapiro-Wilk			Levene's Test		Welch's t-test			
	Gender	Statistic	Df	Sig.	F	Sig.	t	df	Sig. (2-tailed)	Mean Differences
Ecospirituality Score	Female	.998	936	.370						
	Male	.995	353	.311	4.856	.028	4.632	681.977	.000	3.215

A little mean difference (3.215) in Ecospirituality Score (ES) was found between Female and Male students. According to Ghasemi & Zahediasl (2012), the K-S test, which is commonly employed to assess normality, should be avoided due to its limited statistical power, instead they preferred the Shapiro-Wilk test. Shapiro-Wilk test of normality found that ES was likely produced by a normal distribution both in the Female category (α = .05, p = .370) and in the Male category (α = .05, p = .311). The result of Levene's test for ES based on an alpha value of .05, F = 4.856, p = .028 indicated that the variance of ES was not equal for each category of the variable. The result of the two-tailed independent samples Welch's t-test based on an alpha value of .05, t (681.997) = 4.632, p = .000, indicated that the null hypothesis $\mathbf{H_0 1}$ could be rejected. This finding suggested that the mean of ES was significantly different in Female and Male students.

4.1b Based on Age

Table 4.3
Tests for Age and Ecospirituality

	Shapiro-Wilk			Spearman Correlation	
	Statistic	df	Sig.	*ρ*	Sig. (2-tailed)
Age	.949	1289	.000	-.098	.000
Ecospirituality score	.998	1289	.192		

Shapiro-Wilk test was run to explore the normality of data in Age, as well as in Ecospirituality Score (ES). It was found that the Age data distribution was deviated from normality (α = .05, p = .000). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between Age and ES. The result of the Spearman correlation was examined based on an alpha value of .01 which found a weak (Dancey & Reidy, 2007), negative correlation between Age and ES, with a correlation coefficient of -.098, but the correlation was statistically significant (p < .01). Therefore, the null hypothesis **$H_0$2** could be rejected. Result of the correlation analysis suggested that as age increases, ecospirituality tends to decrease.

4.1c Based on Habitat

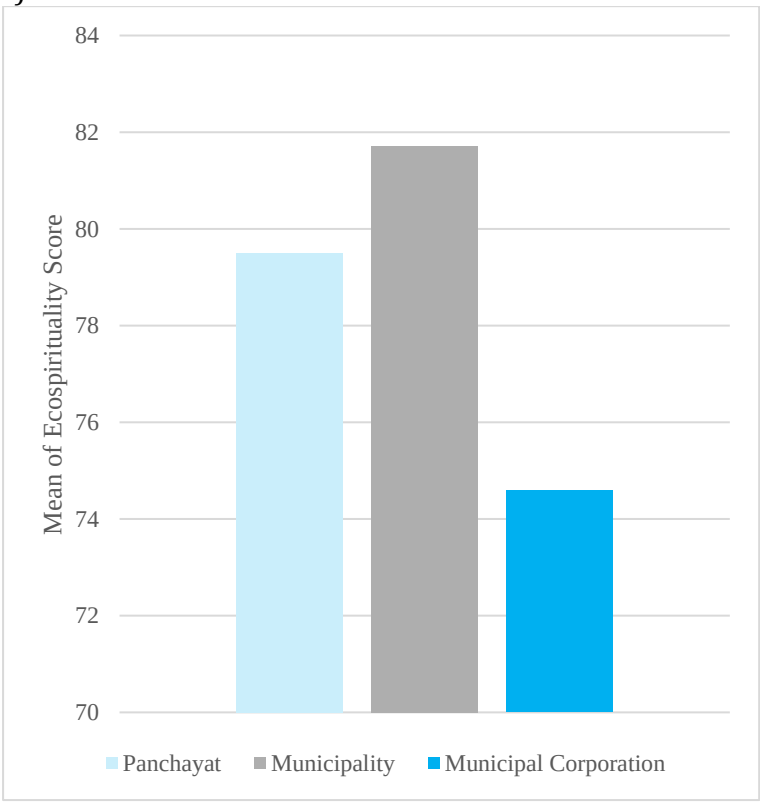
Table 4.4

Comparing Ecospirituality in terms of Habitat

Habitat		Ecospirituality Score
Panchayat	Mean	79.50
	N	784
	Std. Deviation	11.729
Municipality	Mean	81.71
	N	441
	Std. Deviation	11.293
Municipal Corporation	Mean	74.59
	N	64
	Std. Deviation	9.971

Figure 4.2

Diagram showing mean of Ecospirituality Score in terms of Habitat



Interpretation of table 4.4 was as follows-

Students from habitat Municipality had higher mean score (81.71) compared to Panchayat (79.50), and higher than Municipal Corporation (74.59) in overall Ecospirituality Score. The variability in scores was marginally higher for students from Panchayat (SD = 11.729) compared to Municipality (SD = 11.293), and higher than Municipal Corporation (SD= 9.971).

Table 4.5

Tests for Ecospirituality by Habitat

	Shapiro-Wilk			Levene's Test		Welch's ANOVA			
Habitat	Statistic	Df	Sig.	Statistic	Sig.	Statistic	df1	df2	Sig.
Panchayat	.997	784	.116	4.720	.009	15.146[a]	2	177.400	.000
Municipality	.996	441	.312						
Municipal Corporation	.904	64	.000						

Note. Asymptotically F distributed.

From table 4.4, it was found that ES was comparatively higher among students residing in Municipality, and comparatively lower among students residing in Municipal Corporation. Table 4.5 revealed that Shapiro-Wilk test of normality for ES was unlikely to be produced by a normal distribution in the Municipal Corporation category (α= .05, p < .001). However, despite the violation of normality the one-way ANOVA is still a robust test (Blanca et al., 2017). So, it still could be applicable for testing in this case. But the result of Levene's test for ES based on an alpha value of .05, Statistic = 4.720, p = .009 indicated that the variance of ES was not equal for each category of the variable. So, instead of one-way ANOVA, the Welch's ANOVA was used. The results of the Welch's ANOVA were significant, Statistic (2, 177.400) = 15.146, p = .000, indicated that there were significant differences in Ecospirituality Score among the students across three categories of Habitat. Therefore, the null hypothesis **$H_0$3** could be rejected

Table 4.6

Games-Howell Post Hoc Test

Dependent Variable: Ecospirituality (measured by Ecospirituality Score)				
(I) Habitat	(J) Habitat	Mean Difference (I-J)	Std. Error	Sig.
Panchayat	Municipal Corporation	4.902	1.315	.001
Municipality	Panchayat	2.218	.682	.003
	Municipal Corporation	7.121	1.357	.000

Games-Howell Post Hoc test was calculated between each group combination to further examine the differences among the variables based on an alpha of .05. Students in Panchayat had higher mean score than students in Municipal Corporation and it was statistically significant ($p < .005$). Students in Municipality had higher mean score than students in Panchayat and it was statistically significant ($p < .005$). Similarly, students in Municipality had higher mean score than students in Municipal Corporation and it was statistically significant ($p < .005$).

4.1d Based on Family Type

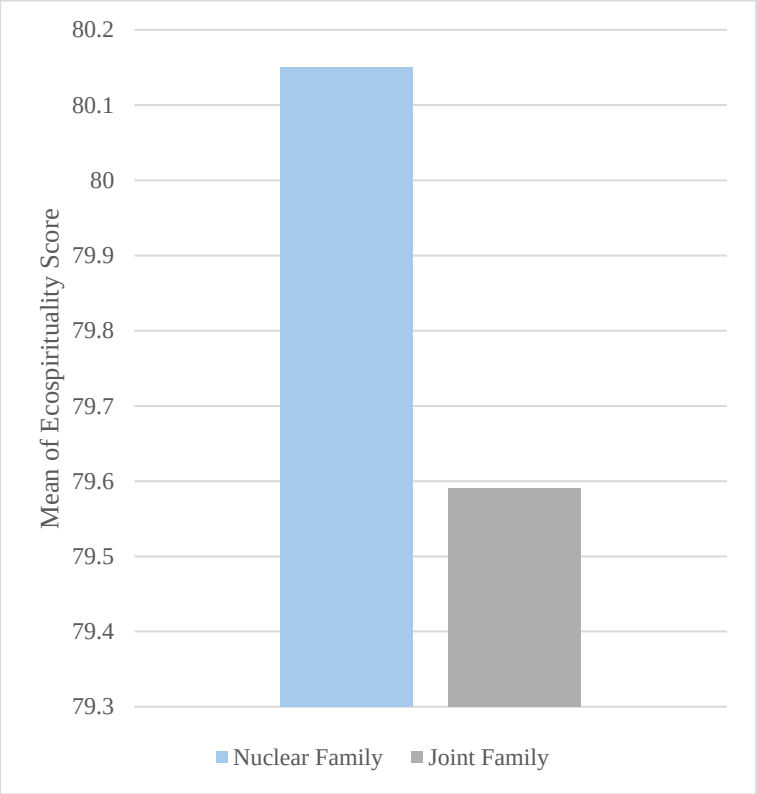
Table 4.7

Comparing Ecospirituality in terms of Family Type

Family type		Ecospirituality Score
Nuclear Family	Mean	80.15
	N	972
	Std. Deviation	11.513
Joint Family	Mean	79.59
	N	317
	Std. Deviation	11.889

Figure 4.3

Diagram showing mean of Ecospirituality Score in terms of Family Type



Interpretation of table 4.7 was as follows-

Students from Nuclear Family had higher mean score (80.15) compared to students from Joint Family (79.59) in overall Ecospirituality Score. The variability in scores was marginally higher for students from Joint Family (SD = 11.889) compared to students from Nuclear Family (SD = 11.513).

Table 4.8

Tests for Ecospirituality by Family Type

		Shapiro-Wilk			Levene's Test		Student's t test			
	Family Type	Statistic	df	Sig.	F	Sig.	t	df	Sig. (2-tailed)	Mean Differences
Ecospirituality Score	Nuclear Family	.997	972	.071	.681	.410	.745	1287	.456	.559
	Joint Family	.996	317	.590						

A very little mean difference (.559) in Ecospirituality Score was found between students in Nuclear Family and students in Joint Family. Shapiro-Wilk test of normality was conducted and found that ES was likely produced by a normal distribution both in the Nuclear Family category (α = .05, p > .001) and in the Joint Family category (α = .05, p > .001). The result of Levene's test for ES based on an alpha value of .05, F = .681, p = .410 indicated that the variance of ES was equal for each category of the variable. The result of the two-tailed Student's t-test based on an alpha value of .05, t_{1287} = .745, p > .05, indicated that the null hypothesis **$H_0$4** cannot be rejected. This finding suggested that the mean of ES was not significantly different between students in Nuclear Family and students in Joint Family.

4.1e Based on Religion

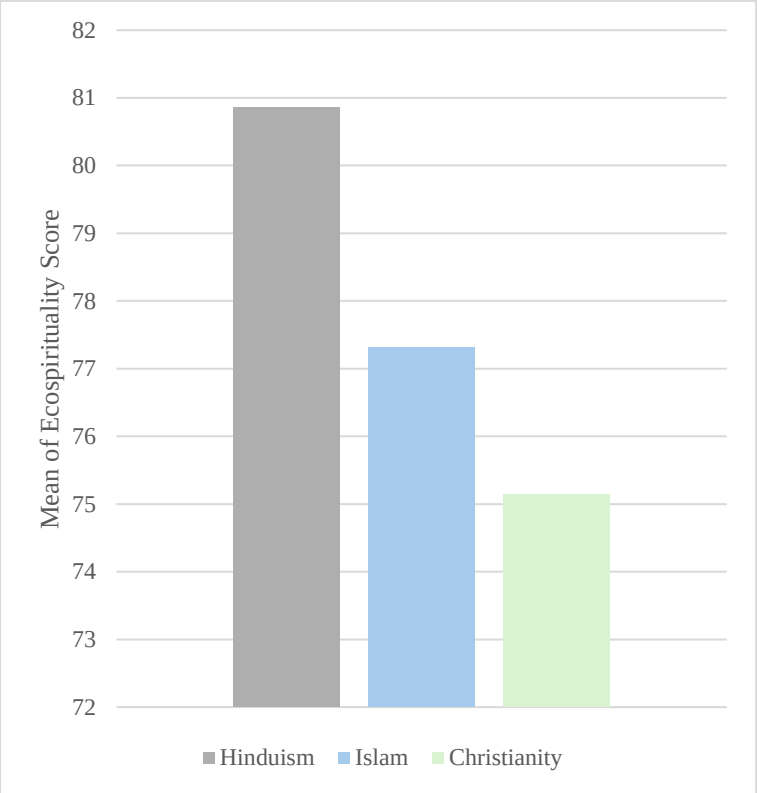
Table 4.9

Comparing Ecospirituality in terms of Religion

Religion		Ecospirituality Score
Hinduism	Mean	80.86
	N	1007
	Std. Deviation	11.622
Islam	Mean	77.31
	N	238
	Std. Deviation	11.191
Christianity	Mean	75.14
	N	44
	Std. Deviation	10.099

Figure 4.4

Diagram showing mean of Ecospirituality Score in terms of Religion



Interpretation of table 4.9 was as follows-

Students from religion Hinduism had a higher mean score (80.86) compared to Islam (77.31), and Christianity (75.14) in overall Ecospirituality Score. The variability in scores was marginally higher for students from religion Hinduism (SD = 11.622) compared to Islam (SD = 11.191) and Christianity (SD= 10.099).

Table 4.10

Tests for Ecospirituality by Religion

		Shapiro-Wilk			Levene's Test		One-way ANOVA			
	Religion	Statistic	df	Sig.	Statistic	Sig.	SS	df	F	Sig.
Ecospirituality Score	Hinduism	.998	1007	.312	1.316	.269	3511.564 (BG)	2 (BG)	13.286	.000
	Islam	.990	238	.116						
	Christianity	.939	44	.022			169943.262 (WG)	1286 (WG)		

From table 4.9, it was found that ES was comparatively higher among students belongs to Hinduism, and comparatively lower among students belongs to Christianity. Table 4.10 revealed that Shapiro-Wilk test of normality for ES was unlikely to be produced by a normal distribution in the Christianity category (α= .05, p < .05). However, despite the violation of normality the one-way ANOVA is still a robust test (Blanca et al., 2017). So, it still could be applicable for testing in this case. The result of Levene's test for ES based on an alpha value of .05, Statistic = 1.316, p = .269 indicated that the variance of ES is equal for each category of the variable. So, the one-way ANOVA, was used. The results of the one-way ANOVA were significant, F (2, 1286) = 13.286, p = .000, indicating there were significant differences in Ecospirituality Score among the students across three categories of the Religion. Therefore, the null hypothesis **$H_0$5** could be rejected

Table 4.11

Bonferroni Post Hoc Test

Dependent Variable: Ecospirituality (measured by Ecospirituality Score)				
(I) Religion	(J) Religion	Mean Difference (I-J)	Std. Error	Sig.
Hinduism	Islam	3.552	.829	.000
	Christianity	5.727	1.770	.004

Bonferroni Post Hoc test was calculated between each group combination to further examine the differences among the variables based on an alpha of .05. Students belong to Hinduism had higher mean score than students belong to Islam, and it was statistically significant (p < .05). Students belongs to Hinduism had higher mean score than students belong to Christianity, and it was statistically significant (p < .05).

4.1f Based on Social Category

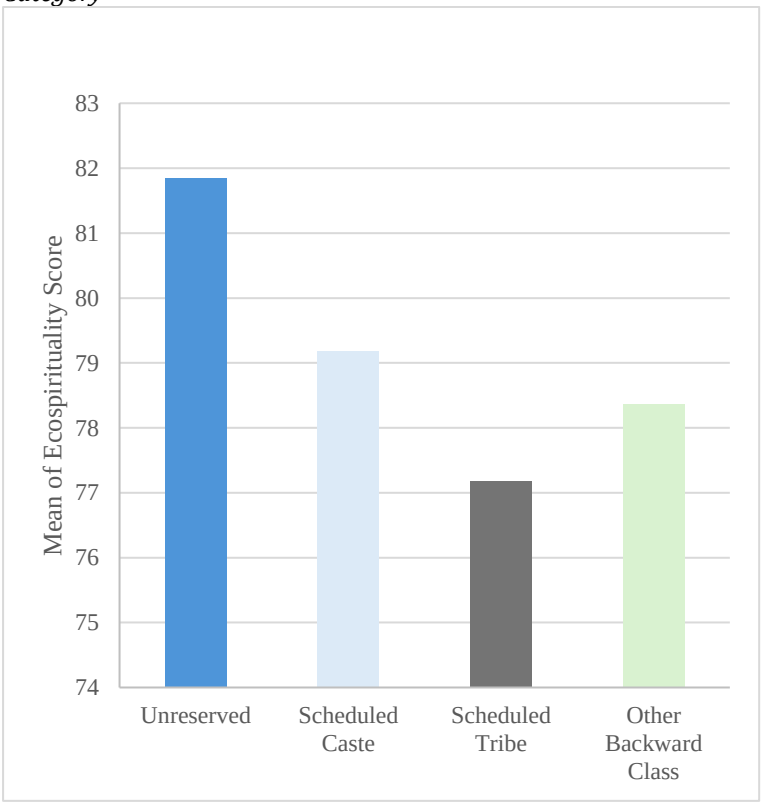
Table 4.12

Comparing Ecospirituality in terms of Social Category

Social category		Ecospirituality Score
Unreserved	Mean	81.85
	N	556
	Std. Deviation	11.474
Scheduled Caste	Mean	79.19
	N	330
	Std. Deviation	11.832
Scheduled Tribe	Mean	77.19
	N	75
	Std. Deviation	10.852
Other Backward Class	Mean	78.36
	N	328
	Std. Deviation	11.334

Figure 4.5

Diagram showing mean of Ecospirituality Score in terms of Social Category



Interpretation of table 4.12 was as follows-

Unreserved students had higher mean score (81.85) compared to students from Scheduled Caste (79.19), Scheduled Tribe (77.19), and Other Backward Class (78.36) in overall Ecospirituality Score. The variability in scores was marginally higher for students from Scheduled Caste (SD = 11.832) compared to students from Unreserved category (SD = 11.474), Scheduled Tribe (SD = 10.852), and Other Backward Class (11.334).

Table 4.13

Tests for Ecospirituality by Social Category

		Shapiro-Wilk			Levene's Test		One-way ANOVA			
	Social Category	Statistic	df	Sig.	Statistic	Sig.	SS	df	F	Sig.
Ecospirituality Score	Unreserved	.997	556	.527	.192	.902	3602.061 (BG)	3 (BG)	9.084	.000
	Scheduled Caste	.993	330	.102			169852.764 (WG)	1285 (WG)		
	Scheduled Tribe	.967	75	.049						
	Other Backward Class	.992	328	.078						

From table 4.12, it was found that ES was comparatively higher among students in Unreserved category, and comparatively lower among students in Scheduled Tribe category. Table 4.13 revealed that, in the Scheduled Tribe category data distribution was slightly deviated from normality (α= .05, p = .049). However, despite the violation of normality the one-way ANOVA is still a robust test (Blanca et al., 2017). So, it still could be applicable for testing in this case. The result of Levene's test for ES based on an alpha value of .05, Statistic = .192, p = .902 indicated that the variance of ES was equal for each category of the variable. So, the one-way ANOVA, was used. The results of the one-way ANOVA were significant, F (3, 1285) = 9.084, p = .000, indicating there were significant

differences in Ecospirituality Score among the students across four categories of the Social Category. Therefore, the null hypothesis **$H_0$6** could be rejected.

Table 4.14

Bonferroni Post Hoc Test

Dependent Variable: Ecospirituality (measured by Ecospirituality Score)				
(I) Social Category	(J) Social Category	Mean Difference (I-J)	Std. Error	Sig.
Unreserved	Scheduled Caste	2.666*	.799	.005
	Scheduled Tribe	4.668*	1.414	.006
	Other Backward Class	3.492*	.800	.000

Bonferroni Post Hoc test was calculated between each group combination to further examine the differences among the variables based on an alpha of .05. Students belong to Unreserved category had higher mean score than students belong to Scheduled Caste, and it was statistically significant ($p < .05$). Students belong to Unreserved category had higher mean score than students belong to Scheduled Tribe, and it was statistically significant ($p < .05$). Similarly, students belong to Unreserved category had higher mean score than students belong to Other Backward Class, and it was statistically significant ($p < .05$).

4.1g Based on Course Level

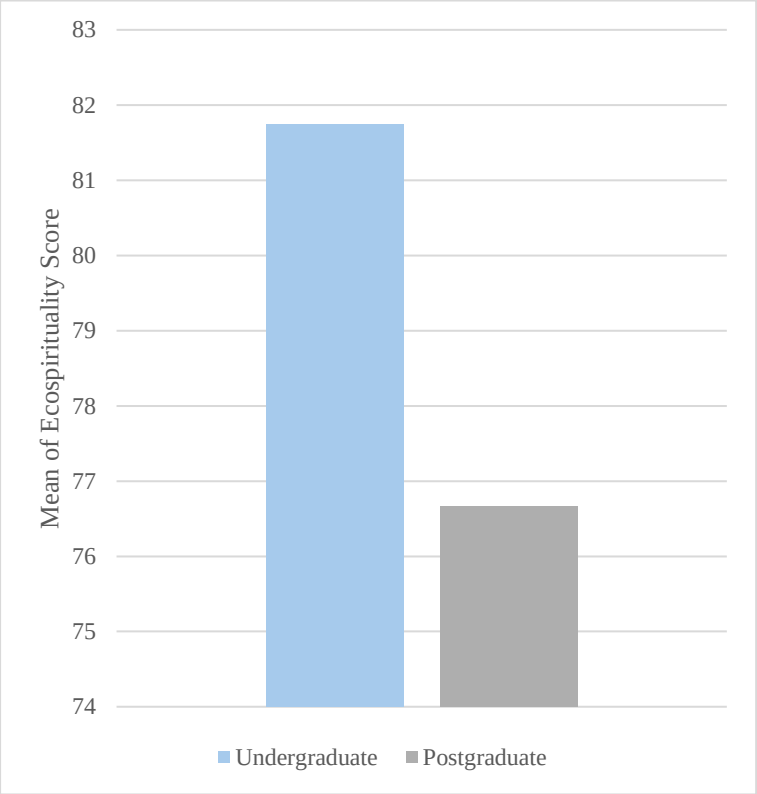
Table 4.15

Comparing Ecospirituality in terms of Course Level

		Dimensions of Ecospirituality					
Course level		Dwelling	Caring	Revering	Experiencing	Relating	Ecospirituality Score
Undergraduate	Mean	16.26	16.94	16.39	15.91	16.24	81.74
	N	849	849	849	849	849	849
	Std. Deviation	3.881	6.452	3.736	3.464	3.571	11.502
Postgraduate	Mean	15.25	15.63	15.41	15.35	15.02	76.67
	N	440	440	440	440	440	440
	Std. Deviation	3.859	6.157	3.549	3.434	3.444	11.071

Figure 4.6

Diagram showing mean of Ecospirituality Score in terms of Course Level



Interpretation of table 4.15 was as follows-

Undergraduate students had higher mean Ecospirituality Score (81.74) compared to Postgraduate students (76.67). Undergraduate students had higher variability (SD = 11.502) than Postgraduate students (SD = 11.071).

Table 4.16

Tests for Ecospirituality Score by Course Level

		Shapiro-Wilk			Mann-Whitney U test		
	Course Level	Statistic	df	Sig.	Statistic	Standardized Statistic	Asymptotic Sig. (2-sided)
Ecospirituality Score	Undergraduate	.997	849	.093	135368.000	-8.116	.000
	Postgraduate	.984	440	.000			

A mean difference (5.076) in Ecospirituality Score was found between students in Undergraduate category and students in Postgraduate category. Shapiro-Wilk test of

normality for ES was deviated from normal distribution in the Postgraduate category (α = .05, p < .05). A two-tailed Mann-Whitney U test was administered and found that the distribution of Ecospirituality Score for Undergraduate students significantly different (α = .05, U = 135368.000, Standardized Statistic = -8.116, p = .000) from the distribution of ES for Postgraduate students. Therefore, the null hypothesis **$H_0$7** could be rejected. The median for Undergraduate students (Mdn = 82.00) was significantly higher than the median for Postgraduate students (Mdn = 76.00).

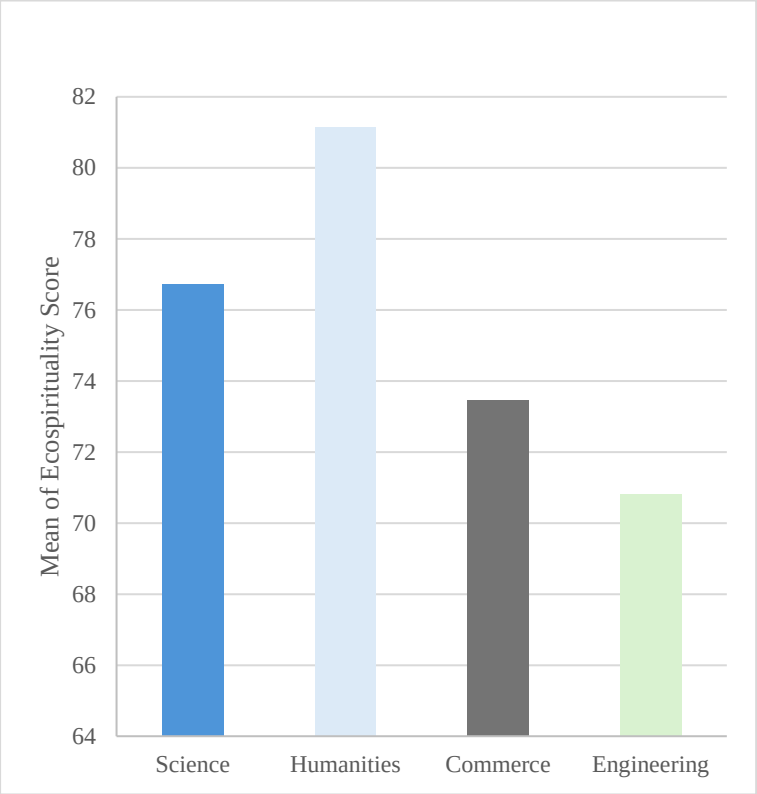
4.1h Based on Stream of Study

Table 4.17
Comparing Ecospirituality in terms of Stream of Study

Stream of Study		Ecospirituality Score
Science	Mean	76.71
	N	127
	Std. Deviation	10.591
Humanities	Mean	81.15
	N	1065
	Std. Deviation	11.648
Commerce	Mean	73.45
	N	38
	Std. Deviation	8.889
Engineering	Mean	70.81
	N	59
	Std. Deviation	6.740

Figure 4.7

Diagram showing mean of Ecospirituality Score in terms of Stream of Study



Interpretation of table 4.17 was as follows-

Humanities students had a higher mean Ecospirituality Score (81.15) compared to Science students (76.71), Commerce students (73.45), and Engineering students (70.81). The variability in scores was slightly higher for Humanities students (SD = 11.648) compared to Science students (SD = 10.591), Commerce students (SD = 8.889), and Engineering students (SD = 6.740).

Table 4.18

Tests for Ecospirituality by Stream of Study

	Shapiro-Wilk			Levene's Test		Welch's ANOVA			
Stream of Study	Statistic	Df	Sig.	Statistic	Sig.	Statistic	df1	df2	Sig.
Science	.968	127	.004	9.337	.000	47.431[a]	3	112.564	.000
Humanities	.998	1065	.160						
Commerce	.949	38	.085						
Engineering	.877	59	.000						

Note. Asymptotically F distributed.

From table 4.17, it was found that ES was comparatively higher among students in Humanities category, and comparatively lower among students in Engineering category. Table 4.18 revealed that Shapiro-Wilk test of normality for ES was unlikely to be produced by a normal distribution in the Science (α= .05, p < .05), as well as in the Engineering (α= .05, p < .05) category. However, despite the violation of normality the one-way ANOVA is still a robust test (Blanca et al., 2017). So, it still could be applicable for testing in this case. But the result of Levene's test for ES based on an alpha value of .05, Statistic = 9.337, p = .000 indicated that the variance of ES was not equal for each category of the variable. So, instead of one-way ANOVA, the Welch's ANOVA was used. The results of the Welch's ANOVA were significant, Statistic (3, 112.564) = 47.431, p = .000, indicated that there were significant differences in Ecospirituality Score among the students across four categories of the Stream of Study. Therefore, the null hypothesis **$H_0$8** could be rejected

Table 4.19

Games-Howell Post Hoc Test

Dependent Variable: Ecospirituality (measured by Ecospirituality Score)				
(I) Stream of Study	(J) Stream of Study	Mean Difference (I-J)	Std. Error	Sig.
Science	Engineering	5.895	1.286	.000
Humanities	Science	4.441	1.005	.000
	Commerce	7.702	1.485	.000
	Engineering	10.336	.947	.000

Games-Howell Post Hoc test was calculated between each group combination to further examine the differences among the variables based on an alpha of .05. Science students had higher mean score than Engineering and it was statistically significant ($p < .005$). Humanities students had higher mean score than Science students, and it was statistically significant ($p < .005$). Humanities students had higher mean score than Commerce students, and it was statistically significant ($p < .005$) Similarly, Humanities students had higher mean score than Engineering students, and it was statistically significant ($p < .005$)

4.2 Depression and explanatory variables

In this part, students' depression was assessed. The results were arranged as per statistical tests used in terms of explanatory variables.

4.2a Based on Gender

Table 4.20

Comparing Levels of Depression by Gender

Gender		Levels of Depression					Total
		Normal	Mild	Moderate	Severe	Extremely Severe	
Female	Count	41	94	454	237	110	936
	% within Gender	4.4%	10.0%	48.5%	25.3%	11.8%	100.0%
	% within Levels of Depression	69.5%	77.7%	75.5%	70.1%	64.7%	72.6%
Male	Count	18	27	147	101	60	353
	% within Gender	5.1%	7.6%	41.6%	28.6%	17.0%	100.0%
	% within Levels of Depression	30.5%	22.3%	24.5%	29.9%	35.3%	27.4%
Total	Count	59	121	601	338	170	1289
	% within Gender	4.6%	9.4%	46.6%	26.2%	13.2%	100.0%
	% within Levels of Depression	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 4.8

Diagram showing Levels of Depression within Gender

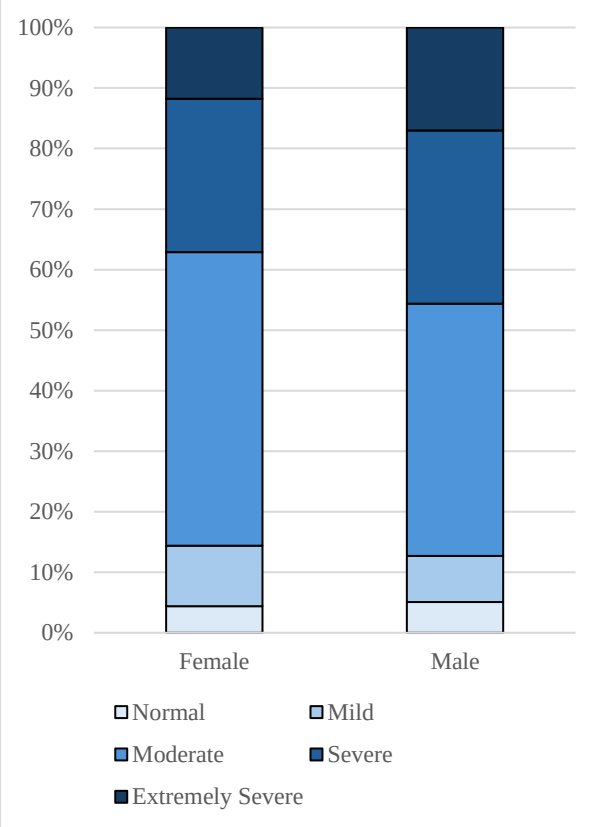
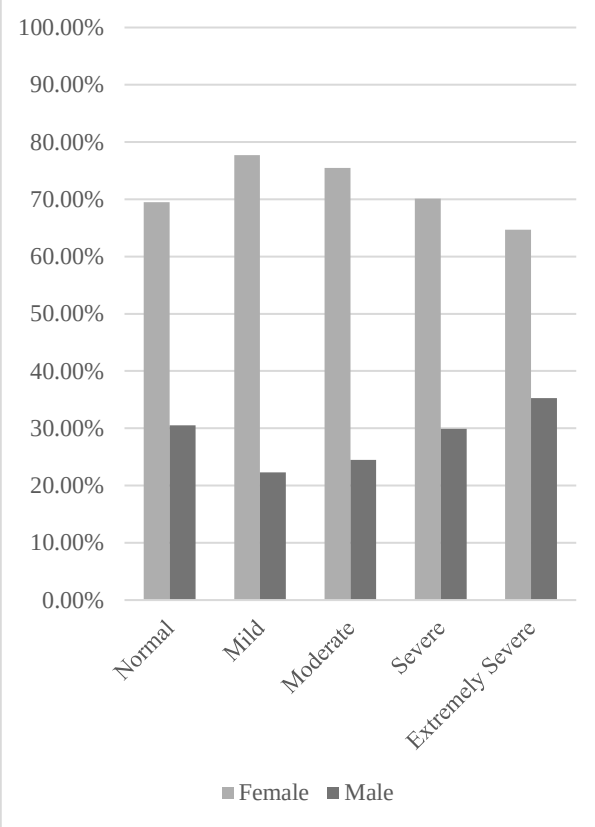


Figure 4.9

Diagram showing Gender within Levels of Depression



Interpretation of table 4.20 was as follows-

- **Female**
    - **Count**: Most students of this category were in Moderate group (454), followed by Severe (237), Extremely Severe (110), Mild (94), and Normal (41). Female students (n = 936) represented 72.6% of the total sample.
    - **Percentage within Gender**: In this gender, Moderate depression was the most prevalent (48.5%), followed by Severe (25.3%), Extremely Severe (11.8%), Mild (10.0%), and Normal (4.4%).
    - **Percentage within Levels of Depression**: The percentages within each depression level for Female students were as follows: Normal = 69.5%,

Mild = 77.7%, Moderate = 75.5%, Severe = 70.1%, and Extremely Severe = 64.7%.

- **Male**
  - **Count**: Most students of this category were in Moderate group (147), followed by Severe (101), Extremely Severe (60), Mild (27), and Normal (18). Male students (n = 353) represented 27.4% of the total sample.
  - **Percentage within Gender**: In this gender, Moderate depression was the most prevalent (41.6%), followed by Severe (28.6%), Extremely Severe (17.0%), Mild (7.6%), and Normal (5.1%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for Male students were as follows: Normal = 30.5%, Mild = 22.3%, Moderate = 24.5%, Severe = 29.9%, and Extremely Severe = 35.3%.

- **Total**

Among total students, most pupils were in the Moderate category (46.6%, n = 601), followed by Severe (26.2%, n = 338), Extremely Severe (13.2%, n = 170), Mild (9.4%, n = 121), and Normal (4.6%, n = 59).

Table 4.21

Tests between Levels of Depression and Gender

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
10.848[a]	4	.028	.092	.028

Note. a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.16.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Gender. The test revealed that there was statistically

significant ($\chi 2 = 10.848$, df = 4, $p < .05$) relationship between Levels of Depression and Gender. Therefore, the null hypothesis **$H_0$9** could be rejected. The Cramer's V Test showed that though the strength of relationship (Value = .092) was weak (Akoglu, 2018), but it was statistically significant ($p < .05$).

4.2b Based on Age

Table 4.22

Tests for Age and Depression

	Shapiro-Wilk			Spearman Correlation	
	Statistic	Df	Sig.	ρ	Sig. (2-tailed)
Age	.949	1289	.000	.074	.008
Depression Score	.986	1289	.000		

Shapiro-Wilk test was run to explore the normality of data in Age, as well as in Depression Score (DS). It was found that the Age data distribution was deviated from normality ($\alpha = .05$, $p = .000$). Similarly, the data distribution of DS was also deviated from normality ($\alpha = .05$, $p = .000$). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between Age and DS. The result of the Spearman correlation was examined based on an alpha value of .01 which found a weak (Dancey & Reidy, 2007), positive correlation between Age and DS, with a correlation coefficient of .074, but the correlation was statistically significant ($p < .01$). Therefore, the null hypothesis **$H_0$10** could be rejected. The result of the correlation analysis suggested that as age increases, depression tends to increase.

4.2c Based on Habitat

Table 4.23

Comparing Levels of Depression by Habitat

Habitat		Levels of Depression					
		Normal	Mild	Moderate	Severe	Extremely Severe	Total
Panchayat	Count	31	74	359	221	99	784
	% within Habitat	4.0%	9.4%	45.8%	28.2%	12.6%	100.0 %
	% within Levels of Depression	52.5%	61.2 %	59.7%	65.4%	58.2%	60.8%
Municipality	Count	26	46	225	91	53	441
	% within Habitat	5.9%	10.4 %	51.0%	20.6%	12.0%	100.0 %
	% within Levels of Depression	44.1%	38.0 %	37.4%	26.9%	31.2%	34.2%
Municipal Corporation	Count	2	1	17	26	18	64
	% within Habitat	3.1%	1.6%	26.6%	40.6%	28.1%	100.0 %
	% within Levels of Depression	3.4%	0.8%	2.8%	7.7%	10.6%	5.0%

Figure 4.10

Diagram showing Levels of Depression within Habitat

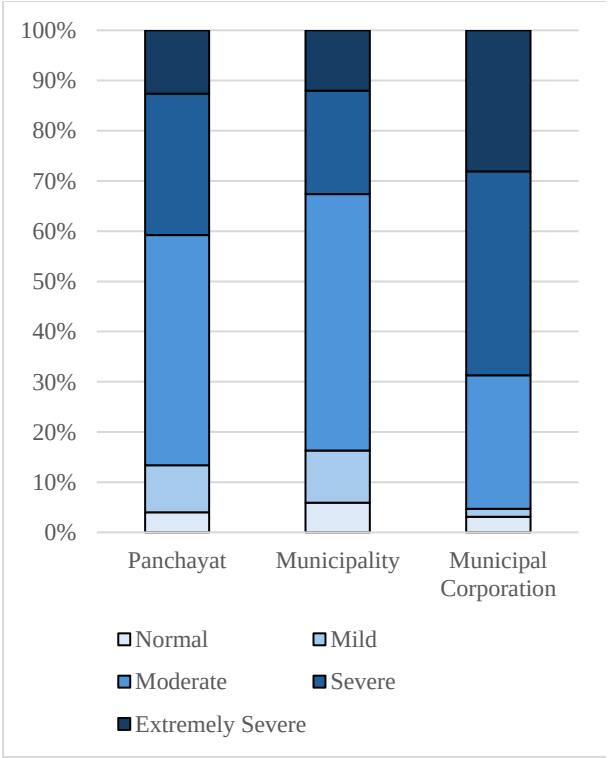
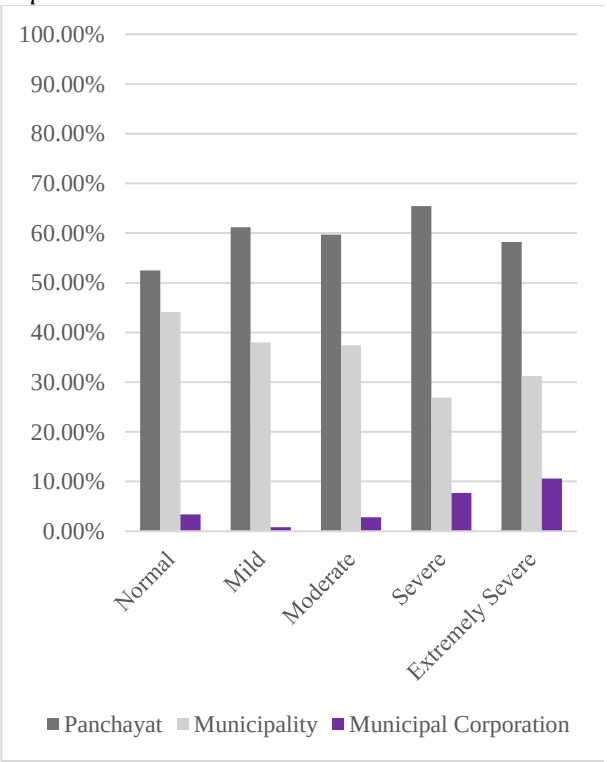


Figure 4.11

Diagram showing Habitat within Levels of Depression



Interpretation of table 4.23 was as follows-

- **Panchayat**
    - **Count**: Most students were in Moderate category (359), followed by Severe (221), Extremely Severe (99), Mild (74), and Normal (31). Students residing in Panchayat (n = 784) represented 60.8% of the total sample.
    - **Percentage within Habitat**: In this Habitat, Moderate depression was the most prevalent (45.8%), followed by Severe (28.2%), Extremely Severe (12.6%), Mild (9.4%), and Normal (4.0%).
    - **Percentage within Levels of Depression**: The percentages within each depression level for students residing in Panchayat were as follows: Normal = 52.5%, Mild = 61.2%, Moderate = 59.7%, Severe = 65.4%, and Extremely Severe = 58.2%.
- **Municipality**
    - **Count**: Here, the highest number of students also fell into the Moderate category (225), followed by Severe (91), Extremely Severe (53), Mild (46), and Normal (26). Students residing in Municipality (n = 441) represented 34.2% of the total sample.
    - **Percentage within Habitat**: Moderate depression was the most common (51%) in this Habitat, with Severe depression (20.6%), and Extremely Severe depression (12.0%) also being prevalent. Mild, and Normal depression accounted for 10.4%, and 5.9%, respectively.
    - **Percentage within Levels of Depression**: The proportions of students from Municipality were as follows: Normal = 44.1%, Mild = 38.0%, Moderate = 37.4%, Severe = 26.9%, and Extremely Severe = 31.2%.

- **Municipal Corporation**

  - **Count**: Here, the highest number of students also fell into the Severe category (26), followed by Extremely Severe (18), Moderate (17), Normal (02), and Mild (01). Students residing in Municipality (n = 64) represented 5.0% of the total sample.
  - **Percentage within Habitat**: Severe depression was the most common (40.6%) in this Habitat, with Extremely Severe depression (28.1%), and Moderate depression (26.6%) also being prevalent. Normal, and Mild depression accounted for 3.1%, and 1.6%, respectively.
  - **Percentage within Levels of Depression**: The proportions of students from municipality were as follows: Normal = 3.4%, Mild = 0.8%, Moderate = 2.8%, Severe = 7.7%, and Extremely Severe = 10.6%.

Table 4.24

Tests between Levels of Depression and Habitat

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
37.733[a]	8	.000	.121	.000

Note. a. 1 cells (6.7%) had expected count less than 5. The minimum expected count was 2.93.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Habitat. The test revealed that there was statistically significant ($\chi 2 = 37.733$, df = 8, $p < .05$) relationship between Levels of Depression and Habitat. the null hypothesis **$H_0$11** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .121) was moderate (Akoglu, 2018) and statistically significant ($p < .05$).

4.2d Based on Family Type

Table 4.25

Comparing Levels of Depression by Family Type

Family Type		Levels of Depression					
		Normal	Mild	Moderate	Severe	Extremely Severe	Total
Nuclear Family	Count	48	98	446	253	127	972
	% within Family Type	4.9%	10.1%	45.9%	26.0%	13.1%	100.0%
	% within Levels of Depression	81.4%	81.0%	74.2%	74.9%	74.7%	75.4%
Joint Family	Count	11	23	155	85	43	317
	% within Family Type	3.5%	7.3%	48.9%	26.8%	13.6%	100.0%
	% within Levels of Depression	18.6%	19.0%	25.8%	25.1%	25.3%	24.6%

Figure 4.12

Diagram showing Levels of Depression within Family Type

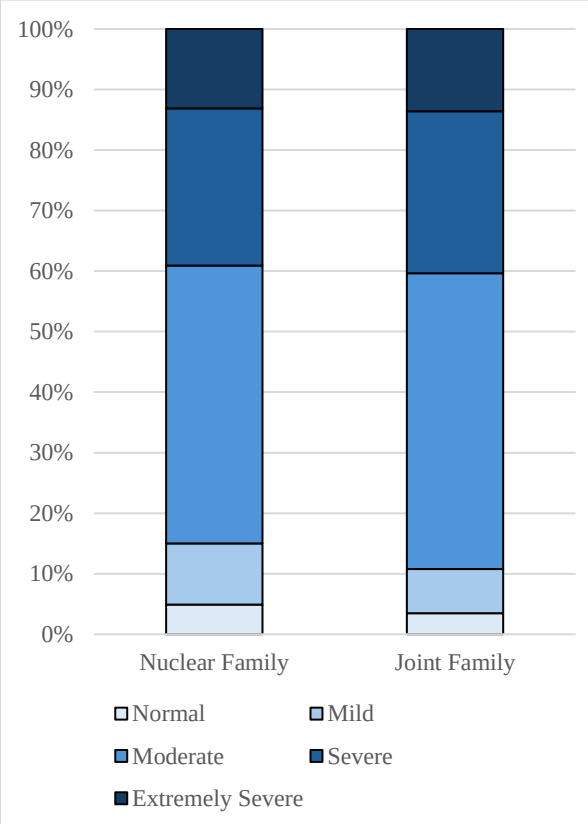
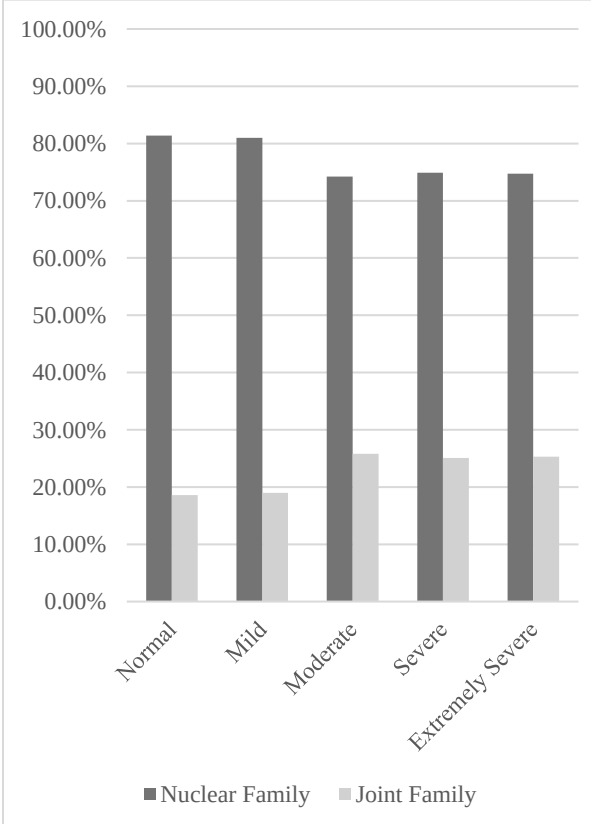


Figure 4.13

Diagram showing Family Type within Levels of Depression



Following was the interpretation of table 4.25-

- **Nuclear Family**
  - **Count**: Most students were in Moderate category (446), followed by Severe (253), Extremely Severe (127), Mild (98), and Normal (48). Students of Nuclear Family (n = 972) represented 75.4% of the total sample.
  - **Percentage within Family Type**: In this family type, Moderate depression was the most prevalent (45.9%), followed by Severe (26.0%), Extremely Severe (13.1%), Mild (10.1%), and Normal (4.9%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students from Nuclear Family were as follows: Normal = 81.4%, Mild = 81.0%, Moderate = 74.2%, Severe = 74.9%, and Extremely Severe = 74.7%.
- **Joint Family**
  - **Count**: Here, the highest number of students also fell into the Moderate category (155), followed by Severe (85), Extremely Severe (43), Mild (23), and Normal (11). Students from Joint Family (n = 317) represented 24.6% of the total sample.
  - **Percentage within Habitat**: Moderate depression was the most common (48.9%) in this habitat, with Severe depression (26.8%), and Extremely Severe depression (13.6%) also being prevalent. Mild, and Normal depression accounted for 7.3%, and 3.5%, respectively.
  - **Percentage within Levels of Depression**: The proportions of students from Joint Family were as follows: Normal = 18.6%, Mild = 19.0%, Moderate = 25.8%, Severe = 25.1%, and Extremely Severe = 25.3%.

Table 4.26

Test between Levels of Depression and Family Type

Chi-Square Test		
Value	df	Asymptotic Significance (2-sided)
3.727[a]	4	.444

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 14.51.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Family Type. The test revealed that though there was variation in the distribution of Levels of Depression across the categories of Family Type, no statistically significant dependency ($\chi 2 = 3.727$, df = 4, $p > .05$) was identified. Therefore, the null hypothesis **$H_0$12** could be retained.

4.2e Based on Religion

Table 4.27

Comparing Levels of Depression by Religion

		Levels of Depression					
Religion		Normal	Mild	Moderate	Severe	Extremely Severe	Total
Hinduism	Count	55	107	479	245	121	1007
	% within Religion	5.5%	10.6%	47.6%	24.3%	12.0%	100.0%
	% within Levels of Depression	93.2%	88.4%	79.7%	72.5%	71.2%	78.1%
Islam	Count	3	13	108	72	42	238
	% within Religion	1.3%	5.5%	45.4%	30.3%	17.6%	100.0%
	% within Levels of Depression	5.1%	10.7%	18.0%	21.3%	24.7%	18.5%
Christianity	Count	1	1	14	21	7	44
	% within Religion	2.3%	2.3%	31.8%	47.7%	15.9%	100.0%
	% within Levels of Depression	1.7%	0.8%	2.3%	6.2%	4.1%	3.4%

Figure 4.14

Diagram showing Levels of Depression within Religion

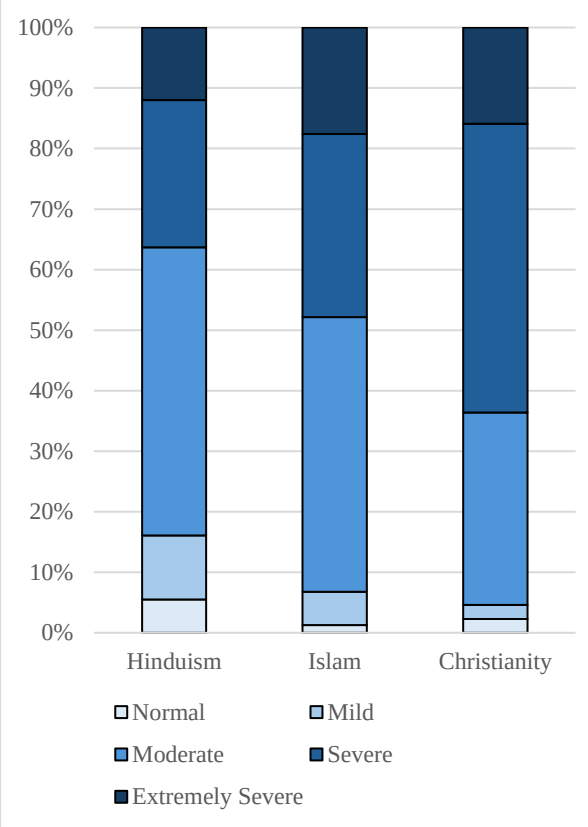
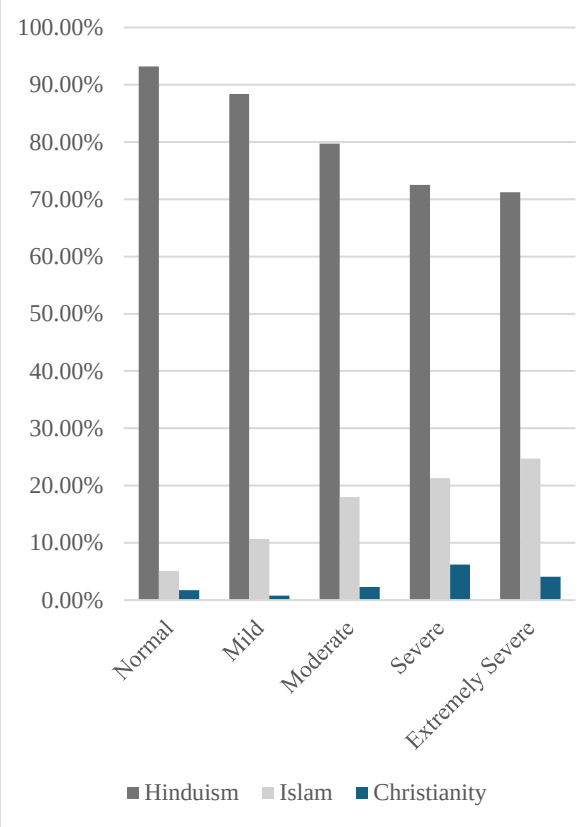


Figure 4.15

Diagram showing Religion within Levels of Depression



Following was the interpretation of table 4.27-

- **Hinduism**
  - **Count**: Most students were in Moderate category (479), followed by Severe (245), Extremely Severe (121), Mild (107), and Normal (55). Students belongs to Hinduism (n = 1007) represented 78.1% of the total sample.
  - **Percentage within Religion**: In this religion, Moderate depression was the most prevalent (47.6%), followed by Severe (24.3%), Extremely Severe (12.0%), Mild (10.6%), and Normal (5.5%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students belongs to Hinduism were as follows:

Normal = 93.2%, Mild = 88.4%, Moderate = 79.7%, Severe = 72.5%, and Extremely Severe = 71.2%.

- **Islam**
  - **Count**: Most students were in Moderate category (108), followed by Severe (72), Extremely Severe (42), Mild (13), and Normal (03). Students belongs to Islam (n = 238) represented 18.5% of the total sample.
  - **Percentage within Religion**: In this religion, Moderate depression was the most prevalent (45.4%), followed by Severe (30.3%), Extremely Severe (17.6%), Mild (5.5%), and Normal (1.3%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students belongs to Islam were as follows: Normal = 5.1%, Mild = 10.7%, Moderate = 18.0%, Severe = 21.3%, and Extremely Severe = 24.7%.
- **Christianity**
  - **Count**: Most students were in Severe category (21), followed by Moderate (14), Extremely Severe (7), then same counts in both Mild (01), and Normal (01) categories. Students belongs to Christianity (n = 44) represented 3.4% of the total sample.
  - **Percentage within Religion**: In this religion, Severe depression was the most prevalent (47.7%), followed by Moderate (31.8%), Extremely Severe (15.9%), then same percentage in both Mild (2.3%), and Normal (2.3%) categories.
  - **Percentage within Levels of Depression**: The percentages within each depression level for students belongs to Christianity were as follows:

Normal = 1.7%, Mild = 0.8%, Moderate = 2.3%, Severe = 6.2%, and Extremely Severe = 4.1%.

Table 4.28

Tests between Levels of Depression and Religion

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
33.709[a]	8	.000	.114	.000

Note. a. 2 cells (13.3%) had expected count less than 5. The minimum expected count was 2.01.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Religion. The test revealed that there was statistically significant ($\chi 2 = 33.709$, df = 8, $p < .05$) relationship between Levels of Depression and Religion. Therefore, the null hypothesis **$H_0$13** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .114) was moderate (Akoglu, 2018) and statistically significant ($p < .05$).

4.2f Based on Social Category

Table 4.29

Comparing Levels of Depression by Social Category

		Levels of Depression					
Social category		Normal	Mild	Moderate	Severe	Extremely Severe	Total
Unreserved	Count	21	63	289	124	59	556
	% within Social Category	3.8%	11.3%	52.0%	22.3%	10.6%	100.0%
	% within Levels of Depression	35.6%	52.1%	48.1%	36.7%	34.7%	43.1%
Scheduled Caste	Count	23	30	141	89	47	330
	% within Social Category	7.0%	9.1%	42.7%	27.0%	14.2%	100.0%
	% within Levels of Depression	39.0%	24.8%	23.5%	26.3%	27.6%	25.6%
Scheduled Tribe	Count	2	9	22	32	10	75
	% within Social Category	2.7%	12.0%	29.3%	42.7%	13.3%	100.0%
	% within Levels of Depression	3.4%	7.4%	3.7%	9.5%	5.9%	5.8%
Other Backward Class	Count	13	19	149	93	54	328
	% within Social Category	4.0%	5.8%	45.4%	28.4%	16.5%	100.0%
	% within Levels of Depression	22.0%	15.7%	24.8%	27.5%	31.8%	25.4%

Figure 4.16

Diagram showing Levels of Depression within Social Category

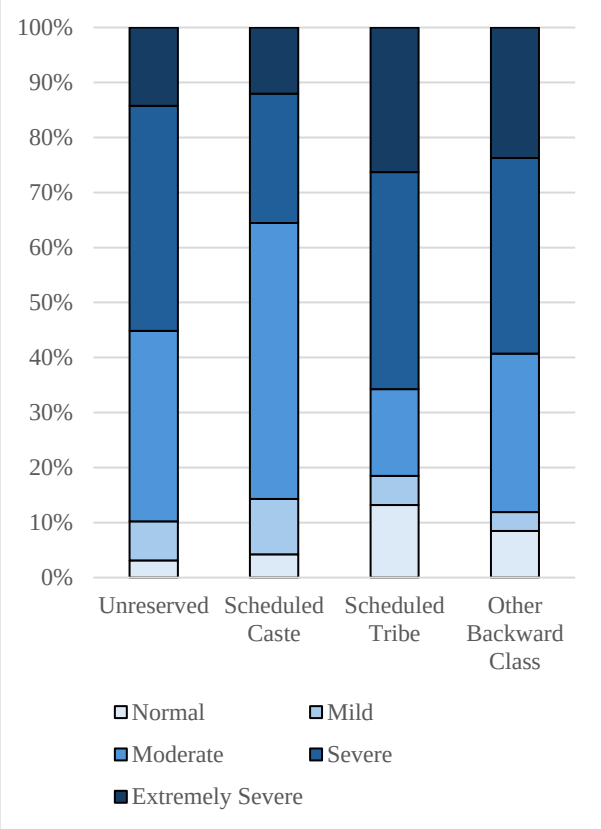
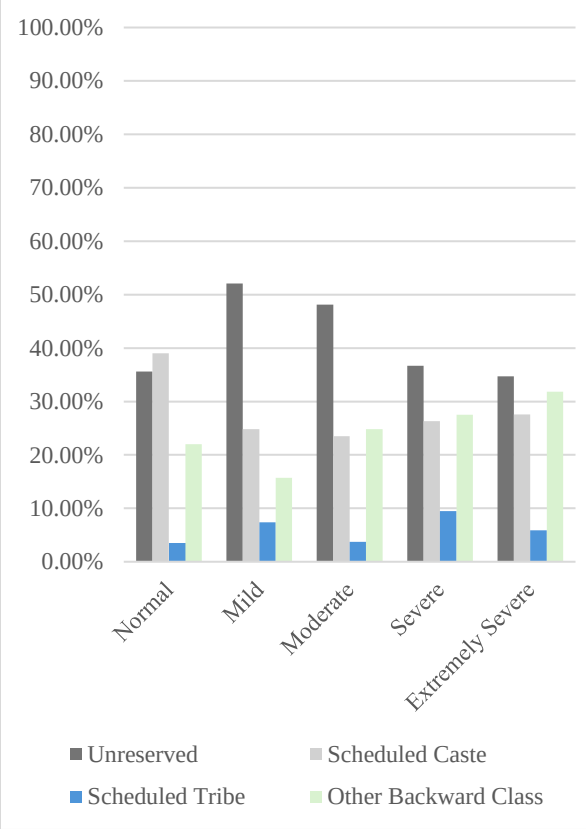


Figure 4.17

Diagram showing Social Category within Levels of Depression



Following was the interpretation of table 4.29-

- **Unreserved**
  - **Count**: Most students were in Moderate category (289), followed by Severe (124), Mild (63), Extremely Severe (59), and Normal (21). Students belongs to Unreserved category (n = 556) represented 43.1% of the total sample.
  - **Percentage within Social Category**: In this social category, Moderate depression was the most prevalent (52.0%), followed by Severe (22.3%), Mild (11.3%), Extremely Severe (10.6%), and Normal (3.8%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Unreserved category were as follows:

Normal = 35.6%, Mild = 52.1%, Moderate = 48.1%, Severe = 36.7%, and Extremely Severe = 34.7%.

- **Scheduled Caste**
  - **Count**: Most students were in Moderate category (141), followed by Severe (89), Extremely Severe (47), Mild (30), and Normal (23). Students belongs to Scheduled Caste category (n = 330) represented 25.6% of the total sample.
  - **Percentage within Social Category**: In this social category, Moderate depression was the most prevalent (42.7%), followed by Severe (27.0%), Extremely Severe (14.2%), Mild (9.1%), and Normal (7.0%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Scheduled Caste category were as follows: Normal = 39.0%, Mild = 24.8%, Moderate = 23.5%, Severe = 26.3%, and Extremely Severe = 27.6%.
- **Scheduled Tribe**
  - **Count**: Most students were in Severe category (32), followed by Moderate (22), Extremely Severe (10), Mild (09), and Normal (02). Students belongs to Scheduled Tribe category (n = 75) represented 5.8% of the total sample.
  - **Percentage within Social Category**: In this social category, Severe depression was the most prevalent (42.7%), followed by Moderate (29.3%), Extremely Severe (13.3%), Mild (12.0%), and Normal (2.7%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students belongs to Scheduled Tribe category were as follows: Normal = 3.4%, Mild = 7.4%, Moderate = 3.7%, Severe = 9.5%, and Extremely Severe = 5.9%.

- **Other Backward Class**

  - **Count**: Most students were in Moderate category (149), followed by Severe (93), Extremely Severe (54), Mild (19), and Normal (13). Students belongs to Other Backward Class category (n = 328) represented 25.4% of the total sample.
  - **Percentage within Social Category**: In this social category, Moderate depression was the most prevalent (45.4%), followed by Severe (28.4%), Extremely Severe (16.5%), Mild (5.8%), and Normal (4.0%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Other Backward Class category were as follows: Normal = 22.0%, Mild = 15.7%, Moderate = 24.8%, Severe = 27.5%, and Extremely Severe = 31.8%.

Table 4.30

Tests between Levels of Depression and Social Category

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
39.883[a]	12	.000	.102	.000

Note. a. 1 cells (5.0%) had expected count less than 5. The minimum expected count was 3.43.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Social Category. The test revealed that there was statistically significant ($\chi 2 = 39.883$, df = 12, $p < .05$) relationship between Levels of Depression and Social Category. Therefore, the null hypothesis **$H_0$14** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .102) was moderate (Akoglu, 2018) and statistically significant ($p < .05$).

4.2g Based on Course Level

Table 4.31

Comparing Levels of Depression by Course Level

Course Level		Levels of Depression					Total
		Normal	Mild	Moderate	Severe	Extremely Severe	
Undergraduate	Count	36	95	450	178	90	849
	% within Academic Level	4.2%	11.2%	53.0%	21.0%	10.6%	100.0%
	% within Levels of Depression	61.0%	78.5%	74.9%	52.7%	52.9%	65.9%
Postgraduate	Count	23	26	151	160	80	440
	% within Academic Level	5.2%	5.9%	34.3%	36.4%	18.2%	100.0%
	% within Levels of Depression	39.0%	21.5%	25.1%	47.3%	47.1%	34.1%

Figure 4.18

Diagram showing Levels of Depression within Course Level

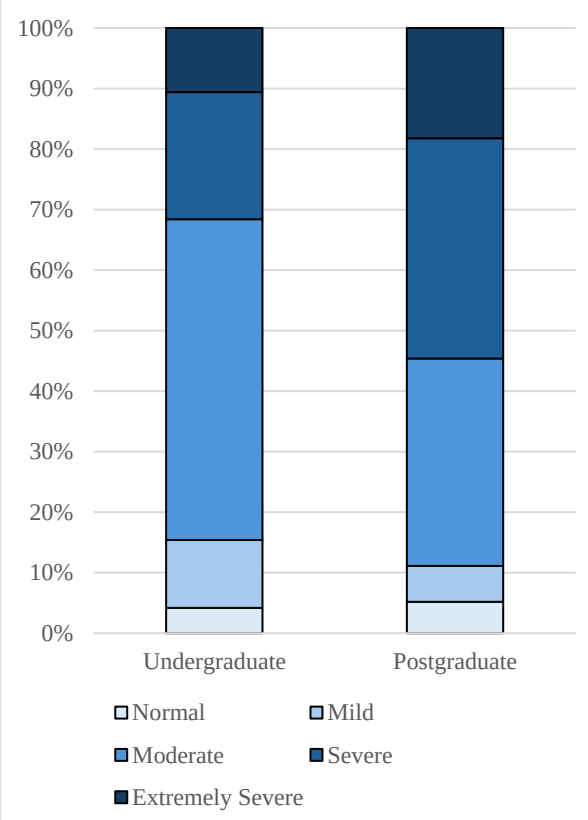
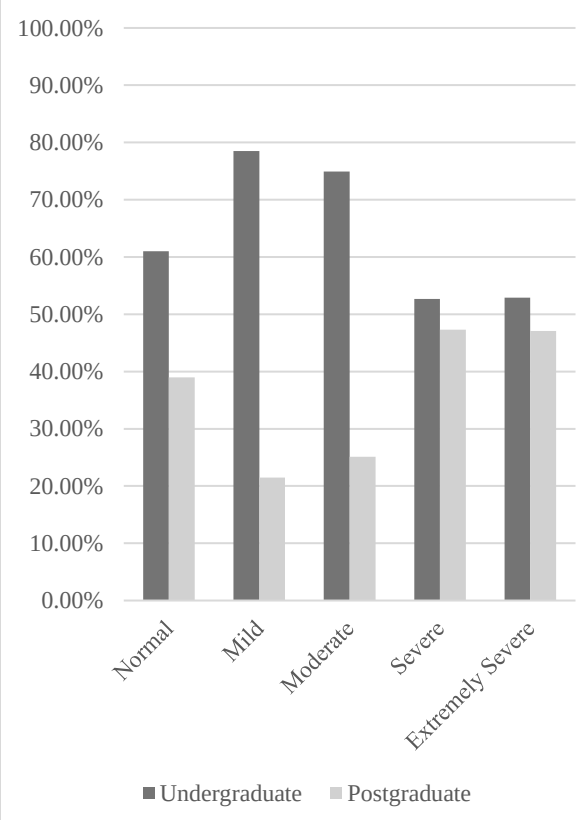


Figure 4.19

Diagram showing Course Level within Levels of Depression



Following was the interpretation of table 4.31-

- **Undergraduate**
  - **Count**: Most students were in Moderate category (450), followed by severe (178), Mild (95), Extremely Severe (90), and Normal (36). Undergraduate category (n = 849) represented 65.9% of the total sample.
  - **Percentage within Course Level**: In this course level, Moderate depression was the most prevalent (53%), followed by Severe (21.0%), Mild (11.2%), Extremely Severe (10.6%), and Normal (4.2%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students belongs to Undergraduate category were as follows: Normal = 61.0%, Mild = 78.5%, Moderate = 74.9%, Severe = 52.7%, and Extremely Severe = 52.9%.
- **Postgraduate**
  - **Count**: Most students were in Severe category (160), followed by Moderate (151), Extremely Severe (80), Mild (26), and Normal (23). Postgraduate category (n = 440) represented 34.1% of the total sample.
  - **Percentage within Course Level**: In this course level, Severe depression was the most prevalent (36.4%), followed by Moderate (34.3%), Extremely Severe (18.2%), Mild (5.9%), and Normal (5.2%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students belongs to Postgraduate category were as follows: Normal = 39.0%, Mild = 21.5%, Moderate = 25.1%, Severe = 47.3%, and Extremely Severe = 47.1%.

Table 4.32

Tests between Levels of Depression and Course Level

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
69.760[a]	4	.000	.233	.000

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 20.14.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Course Level. The test revealed that there was statistically significant ($\chi 2$ = 69.760, df = 4, p < .05) relationship between Levels of Depression and Course Level. Therefore, the null hypothesis **$H_0$15** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .233) was strong (Akoglu, 2018) and statistically significant (p < .05).

4.2h Based on Stream of Study

Table 4.33

Comparing Levels of Depression by Stream of Study

Stream of Study		Levels of Depression					
		Normal	Mild	Moderate	Severe	Extremely Severe	Total
Science	Count	4	9	44	52	18	127
	% within Stream of Study	3.1%	7.1%	34.6%	40.9%	14.2%	100.0%
	% within Levels of Depression	6.8%	7.4%	7.3%	15.4%	10.6%	9.9%
Humanities	Count	45	108	534	250	128	1065
	% within Stream of Study	4.2%	10.1%	50.1%	23.5%	12.0%	100.0%
	% within Levels of depression	76.3%	89.3%	88.9%	74.0%	75.3%	82.6%
Commerce	Count	5	2	6	15	10	38
	% within Stream of Study	13.2%	5.3%	15.8%	39.5%	26.3%	100.0%
	% within Levels of Depression	8.5%	1.7%	1.0%	4.4%	5.9%	2.9%
Engineering	Count	5	2	17	21	14	59
	% within Stream of Study	8.5%	3.4%	28.8%	35.6%	23.7%	100.0%
	% within Levels of Depression	8.5%	1.7%	2.8%	6.2%	8.2%	4.6%

Figure 4.20

Diagram showing Levels of Depression within Stream of Study

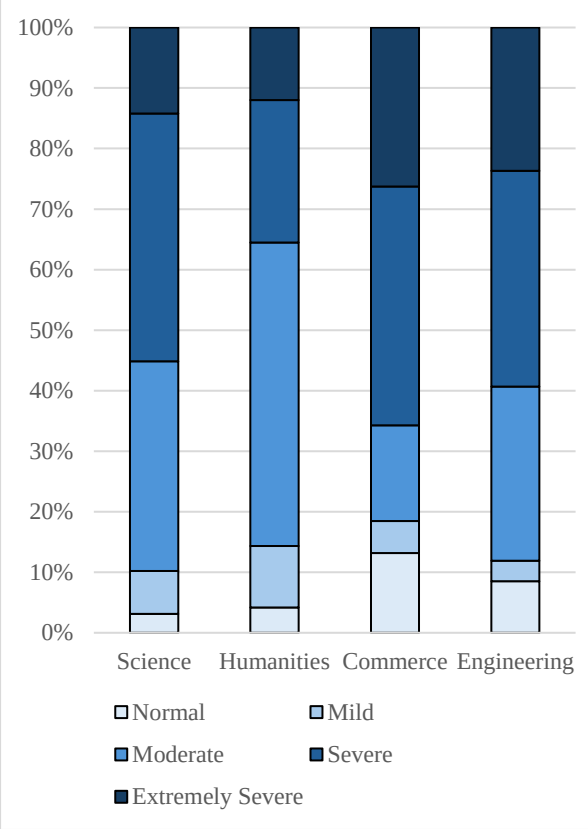
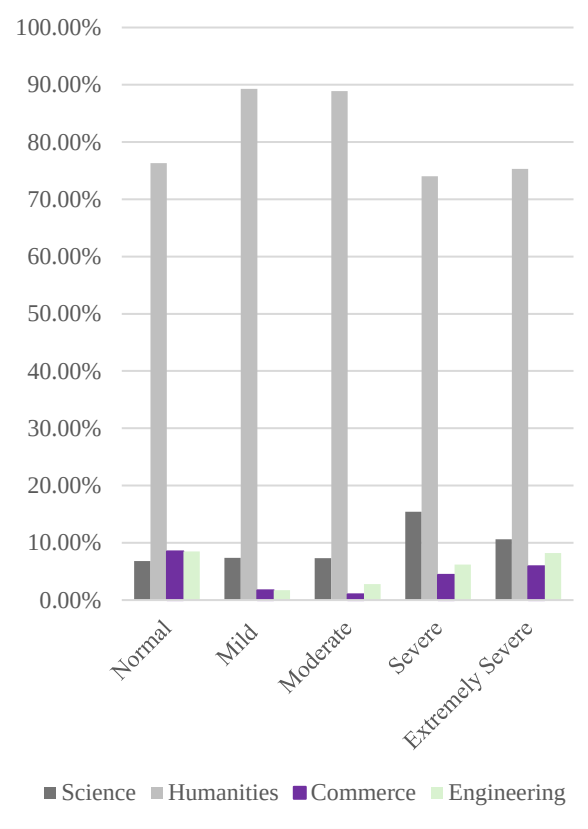


Figure 4.21

Diagram showing Stream of Study within Levels of Depression



Following was the interpretation of table 4.33-

- **Science**
  - **Count**: Most students were in Severe category (52), followed by Moderate (44), Extremely Severe (18), Mild (09), and Normal (04). Science category (n = 127) represented 9.9% of the total sample.
  - **Percentage within Stream of Study**: In this stream of study, Severe depression was the most prevalent (40.9%), followed by Moderate (34.6%), Extremely Severe (14.2%), Mild (7.1%), and Normal (3.1%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Science category were as follows:

Normal = 6.8%, Mild = 7.4%, Moderate = 7.3%, Severe = 15.4%, and Extremely severe = 10.6%.

- **Humanities**
  - **Count**: Most students were in Moderate category (534), followed by Severe (250), Extremely Severe (128), Mild (108), and Normal (45). Humanities category (n = 1065) represented 82.6% of the total sample.
  - **Percentage within Stream of Study**: In this Stream of Study, Moderate depression was the most prevalent (50.1%), followed by Severe (23.5%), Extremely severe (12.0%), Mild (10.1%), and Normal (4.2%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Humanities category were as follows: Normal = 76.3%, Mild = 89.3%, Moderate = 88.9%, Severe = 74.0%, and Extremely Severe = 75.3%.
- **Commerce**
  - **Count**: Most students were in Severe category (15), followed by Extremely Severe (10), Moderate (06), Normal (05), and Mild (02). Commerce category (n = 38) represented 2.9% of the total sample.
  - **Percentage within Stream of Study**: In this stream of study, Severe depression was the most prevalent (39.5%), followed by Extremely severe (26.3%), Moderate (15.8%), Normal (13.2%), and Mild (5.3%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Commerce category were as follows: Normal = 8.5%, Mild = 1.7%, Moderate = 1.0%, Severe = 4.4%, and Extremely Severe = 5.9%.

- **Engineering**

  - **Count**: Most students were in Severe category (21), followed by Moderate (17), Extremely Severe (14), Normal (05), and Mild (02). Engineering category (n = 59) represented 4.6% of the total sample.
  - **Percentage within Stream of Study**: In this stream of study, Severe depression was the most prevalent (35.6%), followed by Moderate (28.8%), Extremely severe (23.7%), Normal (8.5%), and Mild (3.4%).
  - **Percentage within Levels of Depression**: The percentages within each depression level for students of Engineering category were as follows: Normal = 8.5%, Mild = 1.7%, Moderate = 2.8%, Severe = 6.2%, and Extremely Severe = 8.2%.

Table 4.34

Tests between Levels of Depression and Stream of Study

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
60.949[a]	12	.000	.126	.000

Note. a. 3 cells (15.0%) had expected count less than 5. The minimum expected count was 1.74.

A Chi-Square Test of independence was conducted to check the association between Levels of Depression and Stream of Study. The test revealed that there was statistically significant ($\chi 2 = 60.949$, df = 12, $p < .05$) relationship between Levels of Depression and Stream of Study. Therefore, the null hypothesis **$H_0$16** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .126) was moderate (Akoglu, 2018) and statistically significant ($p < .05$).

4.3 Anxiety and explanatory variables

In this part, students' anxiety was assessed. The results were arranged as per statistical tests used in terms of explanatory variables.

4.3a Based on Gender

Table 4.35

Comparing Levels of Anxiety by Gender

Gender		Levels of Anxiety				
		Normal	Mild	Moderate	Severe	Extremely Severe
Female	Count	19	19	187	296	415
	% within Gender	2.0%	2.0%	20.0%	31.6%	44.3%
	% within Levels of Anxiety	73.1%	61.3%	79.6%	78.7%	66.8%
Male	Count	7	12	48	80	206
	% within Gender	2.0%	3.4%	13.6%	22.7%	58.4%
	% within Levels of Anxiety	26.9%	38.7%	20.4%	21.3%	33.2%
Total	Count	26	31	235	376	621
	% within Gender	2.0%	2.4%	18.2%	29.2%	48.2%
	% within Levels of Anxiety	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 4.22

Diagram showing Levels of Anxiety within Gender

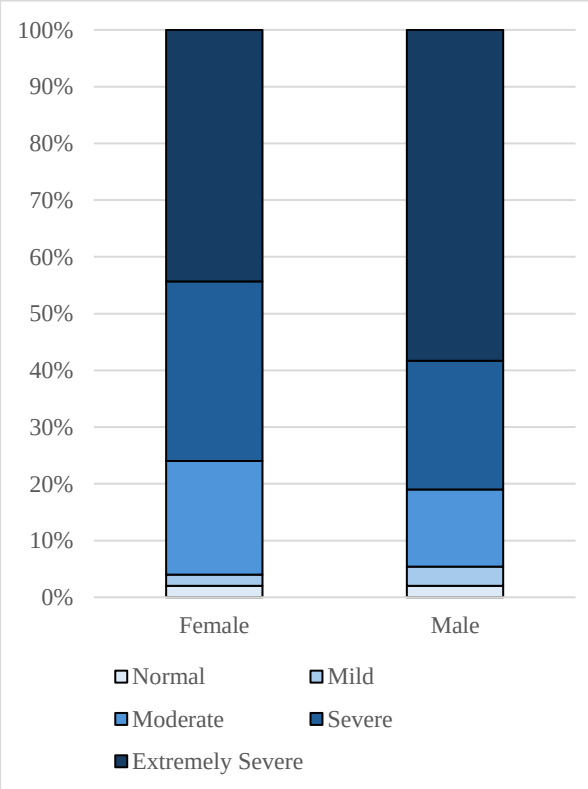
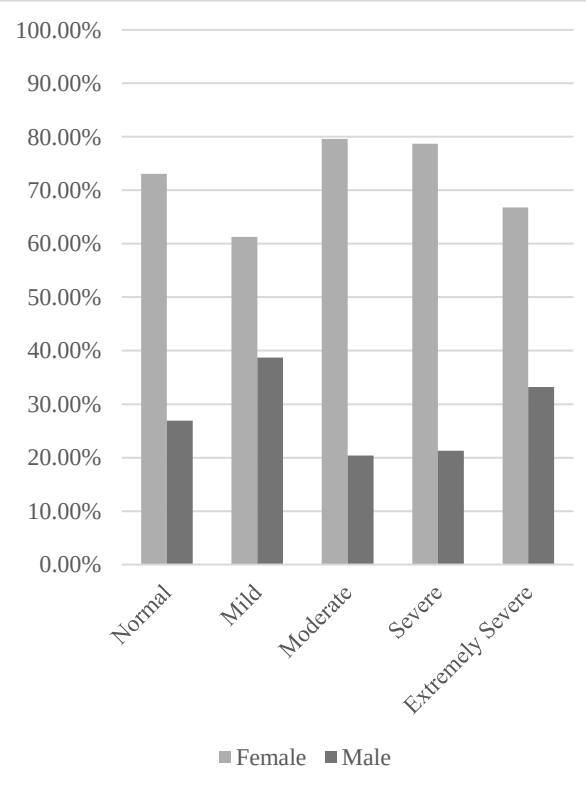


Figure 4.23

Diagram showing Gender within Levels of Anxiety



Following was the interpretation of table 4.35-

- **Female**
  - **Count**: Most students of this category were in Extremely Severe group (415), followed by Severe (296), Moderate (187), and same counts in Mild (19), and Normal (19) group.
  - **Percentage within Gender**: In this gender, Extremely Severe anxiety was the most prevalent (44.3%), followed by Severe (31.6%), Moderate (20.0%), and same percentages in Mild (2.0%), and Normal (2.0%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Female students were as follows: Normal = 73.1%, Mild = 61.3%, Moderate = 79.6%, Severe = 78.7%, and Extremely Severe = 66.8%.
- **Male**
  - **Count**: Most students of this category were in Extremely Severe category (206), followed by Severe (80), Moderate (48), Mild (12), and Normal (07).
  - **Percentage within Gender**: In this gender, Extremely Severe anxiety was the most prevalent (58.4%), followed by Severe (22.7%), Moderate (13.6%), Mild (3.4%), and Normal (2.0%).
  - **Percentage within Levels of Anxiety:** The percentages within each anxiety level for Male students were as follows: Normal = 26.9%, Mild = 38.7%, Moderate = 20.4%, Severe = 21.3%, and Extremely Severe = 33.2%.

- **Total**

Among total students, most pupils were in the Extremely Severe category (48.2%, n = 621), followed by Severe (29.2%, n = 376), Moderate (18.2%, n = 235), Mild (2.4%, n = 31), and Normal (2.0%, n = 26).

Table 4.36

Tests between Levels of Anxiety and Gender

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
25.240[a]	4	.000	.140	.000

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 7.12.

A Chi-Square Test of independence was conducted to check the association between Levels of Anxiety and Gender. The test revealed that there was statistically significant ($\chi 2 = 25.240$, $df = 4$, $p < .05$) relationship between Levels of Anxiety and Gender. Therefore, the null hypothesis **$H_0$17** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .140) was moderate (Akoglu, 2018), and statistically significant ($p < .05$).

4.3b Based on Age

Table 4.37

Tests for Age and Anxiety

	Shapiro-Wilk			Spearman Correlation	
	Statistic	Df	Sig.	ρ	Sig. (2-tailed)
Age	.949	1289	.000	.069	.013
Anxiety Score	.987	1289	.000		

Shapiro-Wilk test was run to explore the normality of data in Age, as well as in Anxiety Score (AS). It was found that the Age data distribution was deviated from normality (α = .05, p = .000). Similarly, the data distribution of AS was also deviated from normality (α = .05, p = .000). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between Age and AS. The result of the Spearman correlation was examined based on an alpha value of .05 which found a weak (Dancey & Reidy, 2007), positive correlation between Age and AS, with a correlation coefficient of .069, but the correlation was statistically significant (p < .05). Therefore, the null hypothesis **$H_0$18** could be rejected. Result of the correlation analysis suggested that as age increases, anxiety tends to increase.

4.3c Based on Habitat

Table 4.38

Comparing Levels of Anxiety by Habitat

		Levels of Anxiety				
Habitat		Normal	Mild	Moderate	Severe	Extremely Severe
Panchayat	Count	11	16	148	211	398
	% within Habitat	1.4%	2.0%	18.9%	26.9%	50.8%
	% within Levels of Anxiety	42.3%	51.6%	63.0%	56.1%	64.1%
Municipality	Count	12	11	82	162	174
	% within Habitat	2.7%	2.5%	18.6%	36.70%	39.5%
	% within Levels of Anxiety	46.2%	35.5%	34.9%	43.1%	28.0%
Municipal Corporation	Count	3	4	5	3	49
	% within Habitat	4.7%	6.3%	7.8%	4.70%	76.6%
	% within Levels of Anxiety	11.5%	12.9%	2.1%	0.8%	7.9%

Figure 4.24
Diagram showing Levels of Anxiety within Habitat

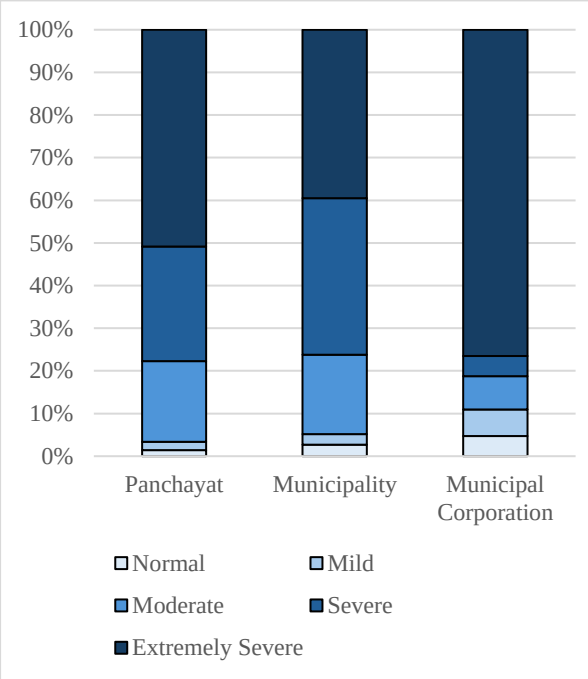
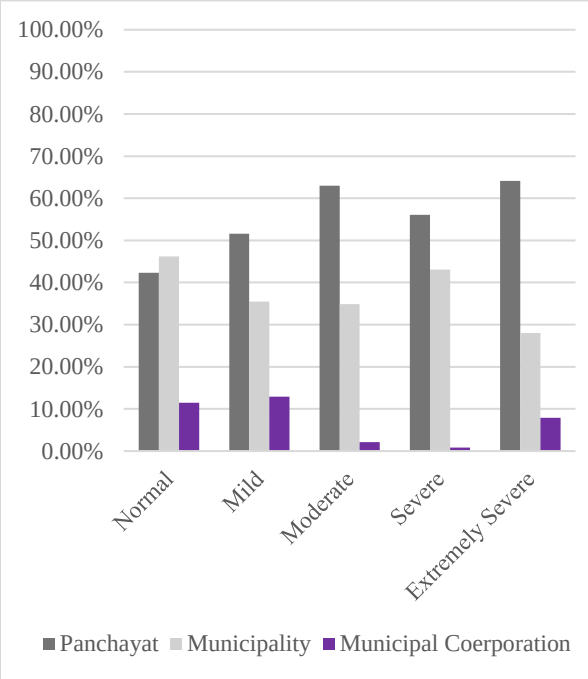


Figure 4.25
Diagram showing Habitat within Levels of Anxiety



Following was the interpretation of table 4.38-

- **Panchayat**
  - **Count**: Most students were in Extremely Severe (398) category, followed by Severe (211), Moderate (148), Mild (16), and Normal (11).
  - **Percentage within Habitat**: In this habitat, Extremely Severe anxiety was the most prevalent (50.8%), followed by Severe (26.9%), Moderate (18.9%), Mild (2.0%), and Normal (1.4%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students residing in Panchayat were as follows: Normal = 42.3%, Mild = 51.6%, Moderate = 63.0%, Severe = 56.1%, and Extremely Severe = 64.1%.

- **Municipality**
  - **Count**: Here, the highest number of students also fell into the Extremely Severe category (174), followed by Severe (162), Moderate (82), Normal (12), and Mild (11).
  - **Percentage within Habitat**: Extremely Severe anxiety was the most common (39.5%) in this Habitat, with Severe anxiety (36.7%), and Moderate anxiety (18.6%) also being prevalent. Normal, and Mild anxiety accounted for 2.7%, and 2.5%, respectively.
  - **Percentage within Levels of Anxiety**: The proportions of students from Municipality were as follows: Normal = 46.2%, Mild = 35.5%, Moderate = 34.9%, Severe = 43.1%, and Extremely Severe = 28.0%.
- **Municipal Corporation**
  - **Count**: Here, the highest number of students also fell into the Extremely Severe category (49), followed by Moderate (05), Mild (04), and same counts in both Normal (03) as well as Severe category (03).
  - **Percentage within Habitat**: Extremely Severe anxiety was the most common (76.6%) in this habitat, followed by Moderate (7.8%), Mild (6.3%), same percentages in both Normal (4.7%) as well as Severe category (4.7%).
  - **Percentage within Levels of Anxiety**: The proportions of students from municipality were as follows: Normal = 3.4%, Mild = 0.8%, Moderate = 2.8%, Severe = 7.7%, and Extremely Severe = 10.6%.

Table 4.39

Tests between Levels of Anxiety and Habitat

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
55.142[a]	8	.000	.146	.000

Note. a. 2 cells (13.3%) had expected count less than 5. The minimum expected count was 1.29.

A Chi-Square Test of independence was conducted to check the association between Levels of Anxiety and Habitat. The test revealed that there was statistically significant ($\chi 2 = 55.142$, $df = 8$, $p < .05$) relationship between Levels of Anxiety and Habitat. Therefore, the null hypothesis **$H_0$19** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .146) was moderate (Akoglu, 2018), and statistically significant ($p < .05$).

4.3d Based on Family Type

Table 4.40

Comparing Levels of Anxiety by Family Type

Family Type		Levels of Anxiety				
		Normal	Mild	Moderate	Severe	Extremely Severe
Nuclear Family	Count	22	29	180	275	466
	% within Family Type	2.3%	3.0%	18.5%	28.3%	47.9%
	% within Levels of Anxiety	84.6%	93.5%	76.6%	73.1%	75.0%
Joint Family	Count	4	2	55	101	155
	% within Family Type	1.3%	0.6%	17.4%	31.9%	48.9%
	% within Levels of Anxiety	15.4%	6.5%	23.4%	26.9%	25.0%

Figure 4.26

Diagram showing Levels of Anxiety within Family Type

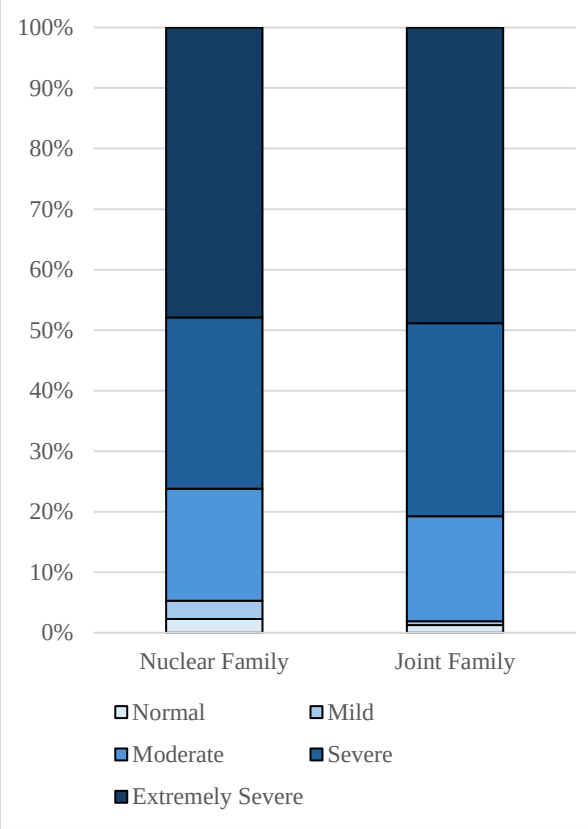
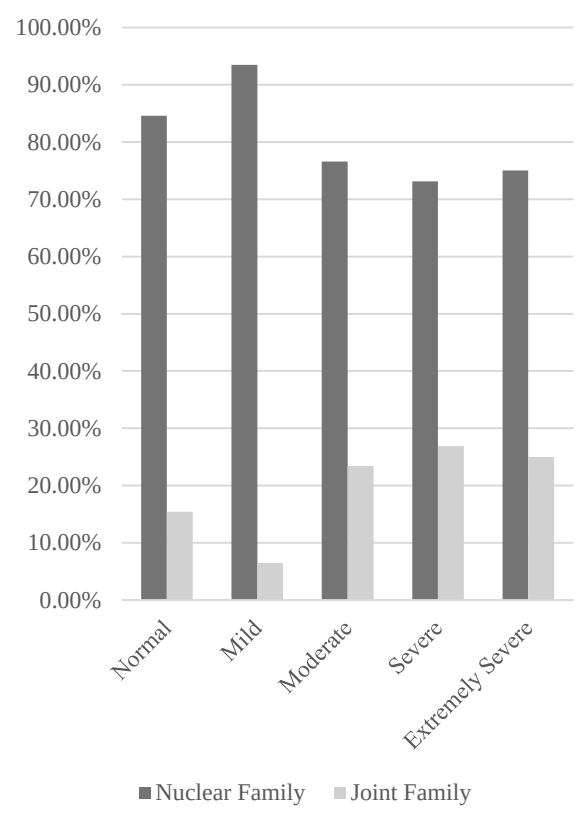


Figure 4.27

Diagram showing Family Type within Levels of Anxiety



Following was the interpretation of table 4.40-

- **Nuclear Family**
  - **Count**: Most students were in Extremely Severe (466) category, followed by Severe (275), Moderate (180), Mild (29), and Normal (22).
  - **Percentage within Family Type**: Extremely Severe anxiety was the most prevalent (47.9%), followed by Severe (28.3%), Moderate (18.5%), Mild (3.0%), and Normal (2.3%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Nuclear Family were as follows: Normal = 84.6%, Mild = 93.5%, Moderate = 76.6%, Severe = 73.1%, and Extremely Severe = 75.0%.

- **Joint Family**
    - **Count**: Most students were in Extremely Severe (155) category, followed by Severe (101), Moderate (55), Normal (04), and Mild (02).
    - **Percentage within Family Type**: Extremely Severe anxiety was the most prevalent (48.9%), followed by Severe (31.9%), Moderate (17.4%), Normal (1.3%), and Mild (0.6%)
    - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Joint Family were as follows: Normal = 15.4%, Mild = 6.5%, Moderate = 23.4%, Severe = 26.9%, and Extremely Severe = 25.0%.

Table 4.41

Tests between Levels of Anxiety and Family Type

Chi-Square Test		
Value	df	Asymptotic Significance (2-sided)
7.958[a]	4	.093

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 6.39.

A Chi-Square Test of independence was conducted to check the association between Levels of Anxiety and Family Type. The test revealed that though there was variation in the distribution of Levels of Anxiety across the categories of Family Type, no statistically significant dependency ($\chi 2 = 7.958$, $df = 4$, $p > .05$) was identified. Therefore, the null hypothesis **$H_0$20** could be retained.

4.3e Based on Religion

Table 4.42

Comparing Levels of Anxiety by Religion

Religion		Levels of Anxiety				
		Normal	Mild	Moderate	Severe	Extremely Severe
Hinduism	Count	20	22	199	316	450
	% within Religion	2.0%	2.2%	19.8%	31.4%	44.7%
	% within Levels of Anxiety	76.9%	71.0%	84.7%	84.0%	72.5%
Islam	Count	4	4	35	53	142
	% within Religion	1.7%	1.7%	14.7%	22.3%	59.7%
	% within Levels of Anxiety	15.4%	12.9%	14.9%	14.1%	22.9%
Christianity	Count	2	5	1	7	29
	% within Religion	4.5%	11.4%	2.3%	15.9%	65.9%
	% within Levels of Anxiety	7.7%	16.1%	0.4%	1.9%	4.7%

Figure 4.28

Diagram showing Levels of Anxiety within Religion

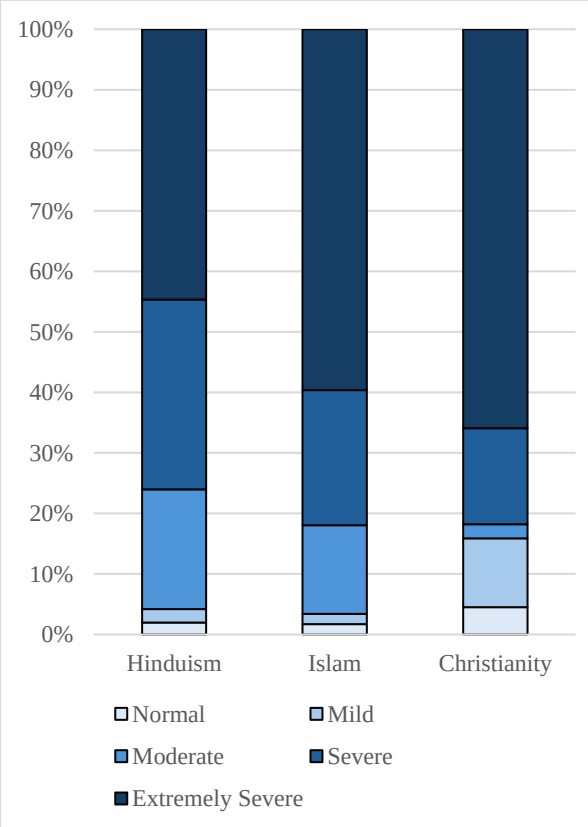
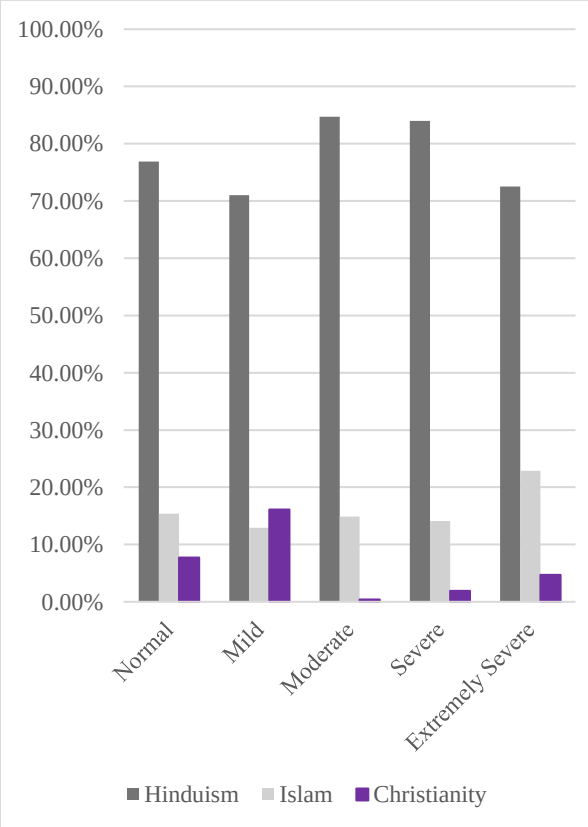


Figure 4.29

Diagram showing Religion within Levels of Anxiety



Following was the interpretation of table 4.42-

- **Hinduism**
  - **Count**: Most students were in Extremely Severe (450) category, followed by Severe (316), Moderate (199), Mild (22), and Normal (20).
  - **Percentage within Religion**: Extremely Severe anxiety was the most prevalent (44.7%), followed by Severe (31.4%), Moderate (19.8%), Mild (2.2%), and Normal (2.0%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Hinduism were as follows: Normal = 76.9%, Mild = 71.0%, Moderate = 84.7%, Severe = 84.0%, and Extremely Severe = 72.5%.
- **Islam**
  - **Count**: Most students were in Extremely Severe (142) category, followed by Severe (53), Moderate (35), and same counts in both Mild (04), and Normal (04) category.
  - **Percentage within Religion**: Extremely Severe anxiety was the most prevalent (59.7%), followed by Severe (22.3%), Moderate (14.7%), and same percentages in both Mild (1.7%), and Normal (1.7%) category.
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Islam were as follows: Normal = 15.4%, Mild = 12.9%, Moderate = 14.9%, Severe = 14.1%, and Extremely Severe = 22.9%.
- **Christianity**
  - **Count**: Most students were in Extremely Severe (29) category, followed by Severe (07), Mild (05), Normal (02), and Moderate (01).

- **Percentage within Religion**: Extremely Severe anxiety was the most prevalent (65.9%), followed by Severe (15.9%), Mild (11.4%), Normal (4.5%), and Moderate (2.3%).
- **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Christianity were as follows: Normal = 7.7%, Mild = 16.1%, Moderate = 0.4%, Severe = 1.9%, and Extremely Severe = 4.7%.

Table 4.43

Tests between Levels of Anxiety and Religion

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
46.162[a]	8	.000	.134	.000

Note. a. 3 cells (20.0%) had expected count less than 5. The minimum expected count was .89.

A Chi-Square Test of independence was conducted to check the association between Levels of Anxiety and Religion. The test revealed that there was statistically significant ($\chi 2 = 46.162$, $df = 8$, $p < .05$) relationship between Levels of Anxiety and Religion. Therefore, the null hypothesis **$H_0$21** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .134) was moderate (Akoglu, 2018), and statistically significant ($p < .05$).

4.3f Based on Social Category

Table 4.44

Comparing Levels of Anxiety by Social Category

Social category		Levels of Anxiety				
		Normal	Mild	Moderate	Severe	Extremely Severe
Unreserved	Count	14	9	111	200	222
	% within Social Category	2.5%	1.6%	20.0%	36.0%	39.9%
	% within Levels of Anxiety	53.8%	29.0%	47.2%	53.2%	35.7%
Scheduled Caste	Count	5	9	65	72	179
	% within Social Category	1.5%	2.7%	19.7%	21.8%	54.2%
	% within Levels of Anxiety	19.2%	29.0%	27.7%	19.1%	28.8%
Scheduled Tribe	Count	2	6	10	15	42
	% within Social Category	2.7%	8.0%	13.3%	20.0%	56.0%
	% within Levels of Anxiety	7.7%	19.4%	4.3%	4.0%	6.8%
Other Backward Class	Count	5	7	49	89	178
	% within Social Category	1.5%	2.1%	14.9%	27.1%	54.3%
	% within Levels of Anxiety	19.2%	22.6%	20.9%	23.7%	28.7%

Figure 4.30

Diagram showing Levels of Anxiety within Social Category

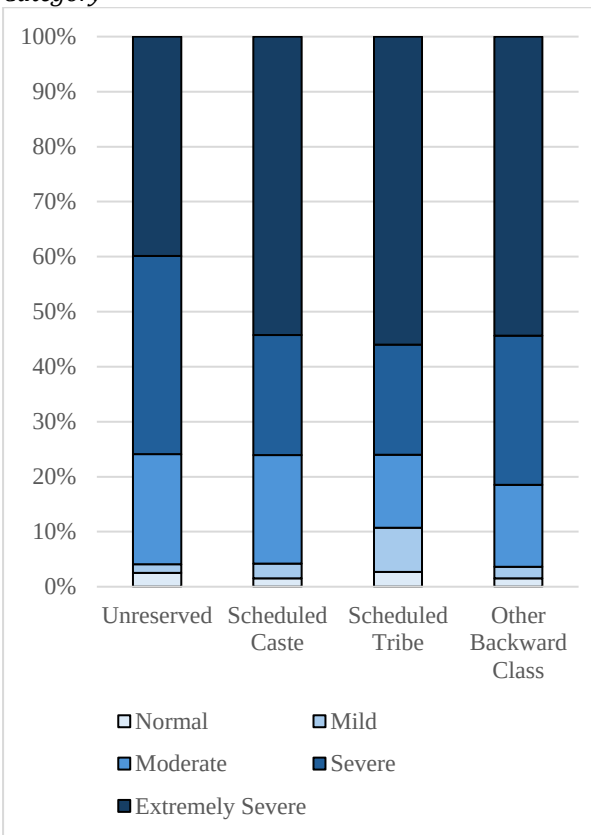
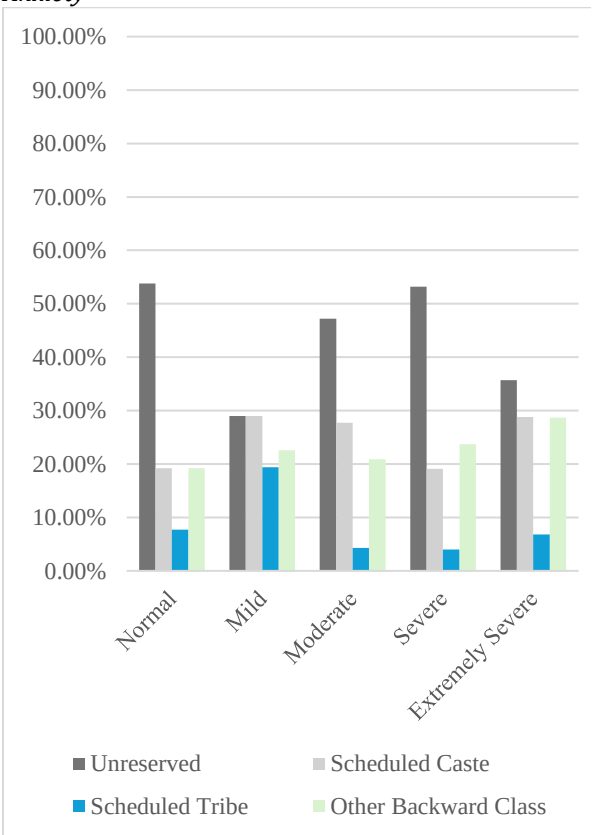


Figure 4.31

Diagram showing Social Category within Levels of Anxiety



Following was the interpretation of table 4.44-

- **Unreserved**
  - **Count**: Most students were in Extremely Severe (222) category, followed by Severe (200), Moderate (111), Normal (14), and Mild (09).
  - **Percentage within Social Category**: Extremely Severe anxiety was the most prevalent (39.9%), followed by Severe (36.0%), Moderate (20.0%), Normal (2.5%), and Mild (1.6%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Unreserved category were as follows: Normal = 53.8%, Mild = 29.0%, Moderate = 47.2%, Severe = 53.2%, and Extremely Severe = 35.7%.
- **Scheduled Caste**
  - **Count**: Most students were in Extremely Severe (179) category, followed by Severe (72), Moderate (65), Mild (09), and Normal (05).
  - **Percentage within Social Category**: Extremely Severe anxiety was the most prevalent (54.2%), followed by Severe (21.8%), Moderate (19.7%), Mild (2.7%), and Normal (1.5%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Scheduled Caste were as follows: Normal = 19.2%, Mild = 29.0%, Moderate = 27.7%, Severe = 19.1%, and Extremely Severe = 28.8%.
- **Scheduled Tribe**
  - **Count**: Most students were in Extremely Severe (42) category, followed by Severe (15), Moderate (10), Mild (06), and Normal (02).

- **Percentage within Social Category**: Extremely Severe anxiety was the most prevalent (56.0%), followed by Severe (20.0%), Moderate (13.3%), Mild (8.0%), and Normal (2.7%).
- **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Scheduled Tribe were as follows: Normal = 7.7%, Mild = 19.4%, Moderate = 4.3%, Severe = 4.0%, and Extremely Severe = 6.8%.

➢ **Other Backward Class**

- **Count**: Most students were in Extremely Severe (178) category, followed by Severe (89), Moderate (49), Mild (07), and Normal (05).
- **Percentage within Social Category**: Extremely Severe anxiety was the most prevalent (54.3%), followed by Severe (21.1%), Moderate (14.9%), Mild (2.1%), and Normal (1.5%).
- **Percentage within Levels of Anxiety**: The percentages within each anxiety level for students belongs to Other Backward Class were as follows: Normal = 19.2%, Mild = 22.6%, Moderate = 20.9%, Severe = 23.7%, and Extremely Severe = 28.7%.

Table 4.45

Tests between Levels of Anxiety and Social Category

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
48.742[a]	12	.000	.112	.000

Note. a. 2 cells (10.0%) had expected count less than 5. The minimum expected count was 1.51.

A Chi-Square Test of independence was conducted to check the association between Levels of Anxiety and Social Category. The test revealed that there was

statistically significant ($\chi 2 = 48.742$, df = 12, $p < .05$) relationship between Levels of Anxiety and Social Category. Therefore, the null hypothesis **$H_0$22** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .112) was moderate (Akoglu, 2018), and statistically significant ($p < .05$).

4.3g Based on Course Level

Table 4.46

Comparing Levels of Anxiety by Course Level

Course Level		Levels of Anxiety				
		Normal	Mild	Moderate	Severe	Extremely Severe
Undergraduate	Count	16	21	180	296	336
	% within Academic Level	1.9%	2.5%	21.2%	34.9%	39.6%
	% within Levels of Anxiety	61.5%	67.7%	76.6%	78.7%	54.1%
Postgraduate	Count	10	10	55	80	285
	% within Academic Level	2.3%	2.3%	12.5%	18.2%	64.8%
	% within Levels of Anxiety	38.5%	32.3%	23.4%	21.3%	45.9%

Figure 4.32

Diagram showing Levels of Anxiety within Course Level

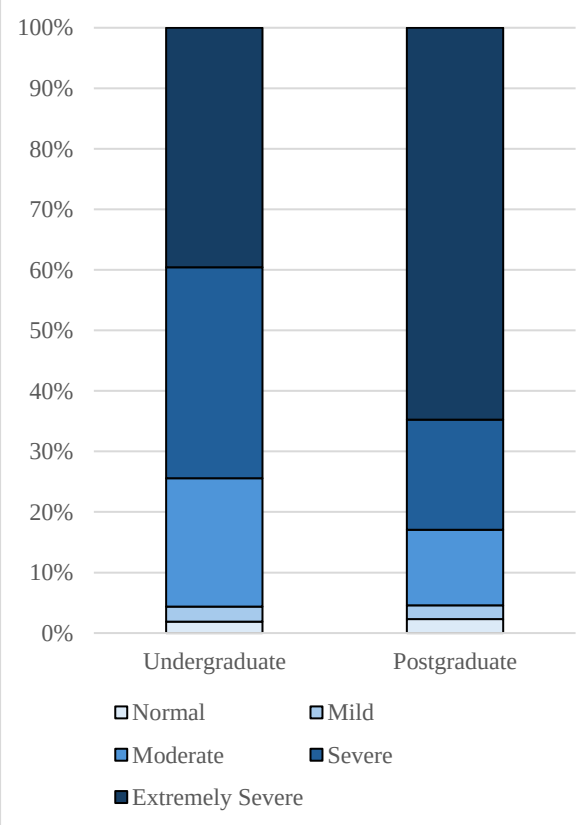
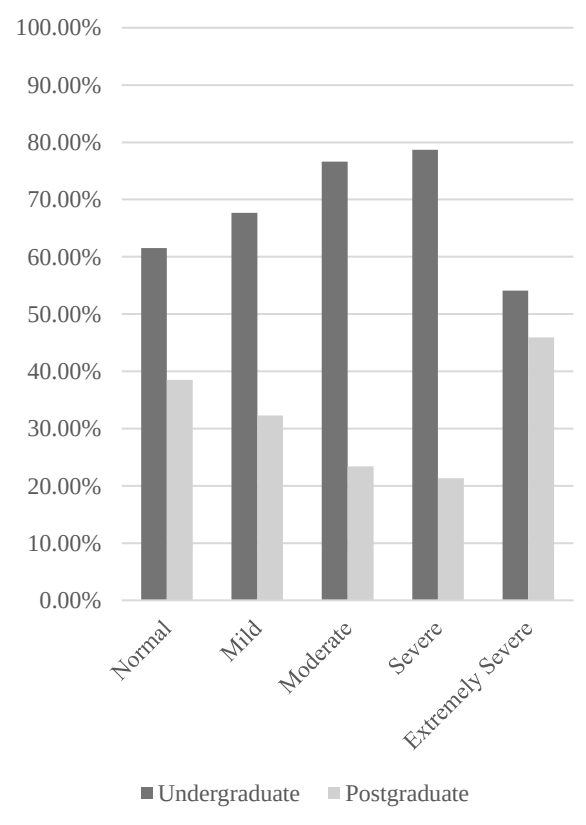


Figure 4.33

Diagram showing Course Level within Levels of Anxiety



Following was the interpretation of table 4.46-

- **Undergraduate**
  - **Count**: Most students were in Extremely Severe (336) category, followed by Severe (296), Moderate (180), Mild (21), and Normal (16).
  - **Percentage within Course Level**: Extremely Severe anxiety was the most prevalent (39.6%), followed by Severe (34.9%), Moderate (21.2%), Mild (2.5%), and Normal (1.9%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Undergraduate students were as follows: Normal = 61.5%, Mild = 67.7%, Moderate = 76.6%, Severe = 78.7%, and Extremely Severe = 54.1%.
- **Postgraduate**
  - **Count**: Most students were in Extremely Severe (285) category, followed by Severe (80), Moderate (55), and same counts in both Mild (10), and Normal (10) category.
  - **Percentage within Course Level**: Extremely Severe anxiety was the most prevalent (64.8%), followed by Severe (18.2%), Moderate (12.5%), and same percentages in both Mild (2.3%), and Normal (2.3%) category.
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Postgraduate students were as follows: Normal = 38.5%, Mild = 32.3%, Moderate = 23.4%, Severe = 21.3%, and Extremely Severe = 45.9%.

Table 4.47

Tests between Levels of Anxiety and Course Level

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
78.142[a]	4	.000	.246	.000

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 8.88.

A Chi-Square Test of independence was conducted to check the association between Levels of Anxiety and Course Level. The test revealed that there was statistically significant ($\chi 2 = 78.142$, $df = 4$, $p < .05$) relationship between Levels of Anxiety and Course Level. Therefore, the null hypothesis **$H_0$23** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .246) was strong (Akoglu, 2018), and statistically significant ($p < .05$).

4.3h Based on Stream of Study

Table 4.48

Comparing Levels of Anxiety by Stream of Study

Stream of Study		Levels of Anxiety				
		Normal	Mild	Moderate	Severe	Extremely Severe
Science	Count	4	2	14	21	86
	% within Stream of Study	3.1%	1.6%	11.0%	16.5%	67.7%
	% within Levels of Anxiety	15.4%	6.5%	6.0%	5.6%	13.8%
Humanities	Count	18	23	217	347	460
	% within Stream of Study	1.7%	2.2%	20.4%	32.6%	43.2%
	% within Levels of Anxiety	69.2%	74.2%	92.3%	92.3%	74.1%
Commerce	Count	2	3	2	4	27
	% within Stream of Study	5.3%	7.9%	5.3%	10.5%	71.1%
	% within Levels of Anxiety	7.7%	9.7%	0.9%	1.1%	4.3%
Engineering	Count	2	3	2	4	48
	% within Stream of Study	3.4%	5.1%	3.4%	6.8%	81.4%
	% within Levels of Anxiety	7.7%	9.7%	0.9%	1.1%	7.7%

Figure 4.34

Diagram showing Levels of Anxiety within Stream of Study

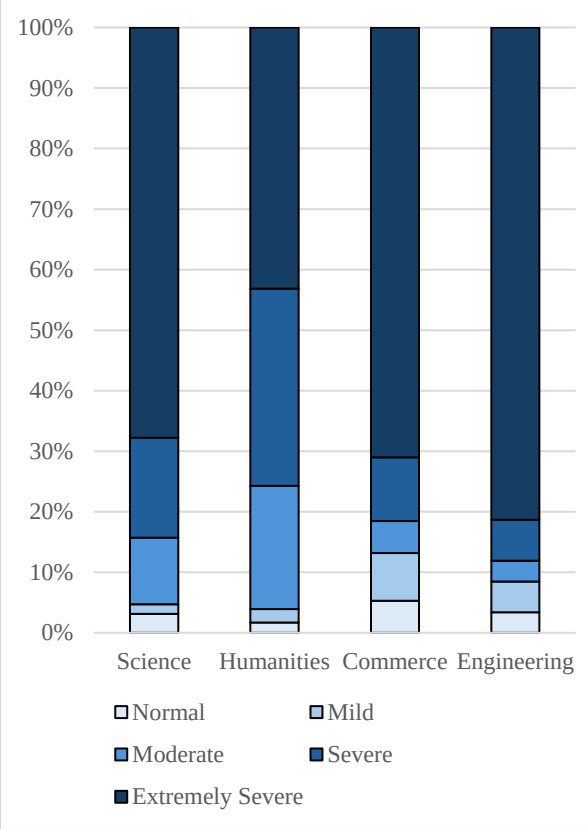
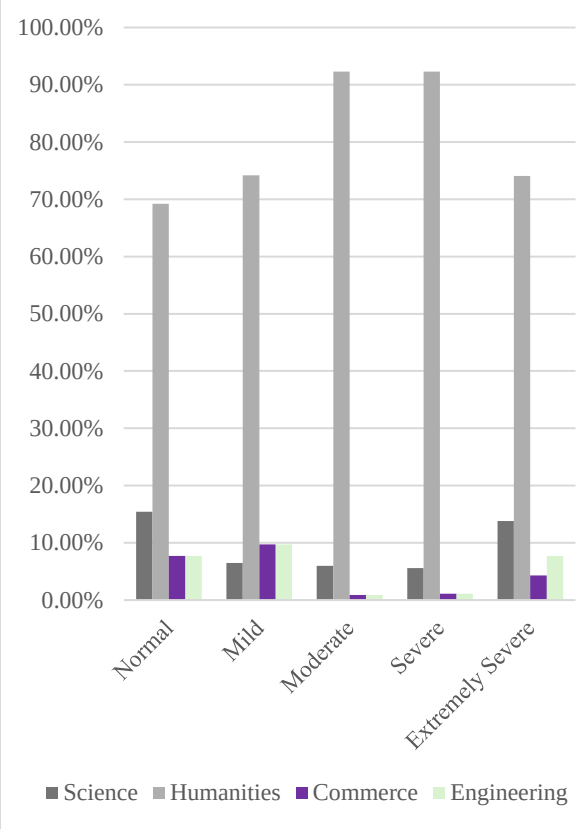


Figure 4.35

Diagram showing Stream of Study within Levels of Anxiety



Following was the interpretation of table 4.48-

- **Science**
  - **Count**: Most students were in Extremely Severe (86) category, followed by Severe (21), Moderate (14), Normal (04), and Mild (02).
  - **Percentage within Stream of Study**: Extremely Severe anxiety was the most prevalent (67.7%), followed by Severe (16.5%), Moderate (11.0%), Normal (3.1%), and Mild (1.6%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Science category students were as follows: Normal = 15.4%, Mild = 6.5%, Moderate = 6.0%, Severe = 5.6%, and Extremely Severe = 13.8%.

- **Humanities**
  - **Count**: Most students were in Extremely Severe (460) category, followed by Severe (347), Moderate (217), Mild (23), and Normal (18).
  - **Percentage within Stream of Study**: Extremely Severe anxiety was the most prevalent (43.2%), followed by Severe (32.6%), Moderate (20.4%), Mild (2.2%), and Normal (1.7%).
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Humanities students were as follows: Normal = 69.2%, Mild = 74.2%, Moderate = 92.3%, Severe = 92.3%, and Extremely Severe = 74.1%.
- **Commerce**
  - **Count**: Most students were in Extremely Severe (27) category, followed by Severe (04), Mild (03), and same counts in both Moderate (02) as well as Normal (02) category.
  - **Percentage within Stream of Study**: Extremely Severe anxiety was the most prevalent (71.1%), followed by Severe (10.5%), Mild (7.9%), same percentages in both Moderate (5.3%) as well as Normal (5.3%) category.
  - **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Commerce students were as follows: Normal = 7.7%, Mild = 9.7%, Moderate = 0.9%, Severe = 1.1%, and Extremely Severe = 4.3%.
- **Engineering**
  - **Count**: Most students were in Extremely Severe (48) category, followed by Severe (04), Mild (03), and same counts in both Moderate (02) as well as Normal (02) category.

- **Percentage within Stream of Study**: Extremely Severe anxiety was the most prevalent (81.4%), followed by Severe (6.8%), Mild (5.1%), same percentages in both Moderate (3.4%) as well as Normal (3.4%) category.
- **Percentage within Levels of Anxiety**: The percentages within each anxiety level for Engineering students were as follows: Normal = 7.7%, Mild = 9.7%, Moderate = 0.9%, Severe = 1.1%, and Extremely Severe = 7.7%.

Table 4.49

Tests between Levels of Anxiety and Stream of Study

Chi-Square Test		
Value	df	Asymptotic Significance (2-sided)
87.036[a]	12	.000

Note. a. 6 cells (30.0%) had expected count less than 5. The minimum expected count was .77.

Table 4.49 revealed that more than 20% cells had expected count less than 5. So, the Chi-Square Test would not be appropriate in this case. Rather, the researcher considered the non-categorical Anxiety Score obtained from Anxiety subscale of DASS-21 and utilized the ANOVA test.

Table 4.50

Tests for Anxiety by Stream of Study

	Shapiro-Wilk			Levene's Test		One-way ANOVA			
Stream of Study	Statistic	df	Sig.	Statistic	Sig.	SS	df	F	Sig.
Science	.982	127	.081	1.985	.114	297.692 (BG)	3 (BG)	10.632	.000
Humanities	.982	1065	.000						
Commerce	.932	38	.024						
Engineering	.914	59	.000			11992.644 (WG)	1285 (WG)		

Table 4.50 revealed that Shapiro-Wilk test of normality for Anxiety Score was unlikely to be produced by a normal distribution in the Humanities (α= .05, p < .05), as well as in the Commerce (α= .05, p < .05), and in the Engineering (α= .05, p < .05) category. However, despite the violation of normality the one-way ANOVA is still a robust test (Blanca et al., 2017). So, it still could be applicable for testing in this case. The result of Levene's test for Anxiety Score (AS) based on an alpha value of .05, Statistic = 1.985, p = .114 indicated that the variance of AS was equal for each category of the variable. So, the one-way ANOVA, was used. The results of the one-way ANOVA were significant, F (3, 1285) = 10.632, p = .000, indicating there were significant differences in Anxiety Score among the students across four categories of the Stream of Study. Therefore, the null hypothesis **$H_0$24** could be rejected.

Table 4.51

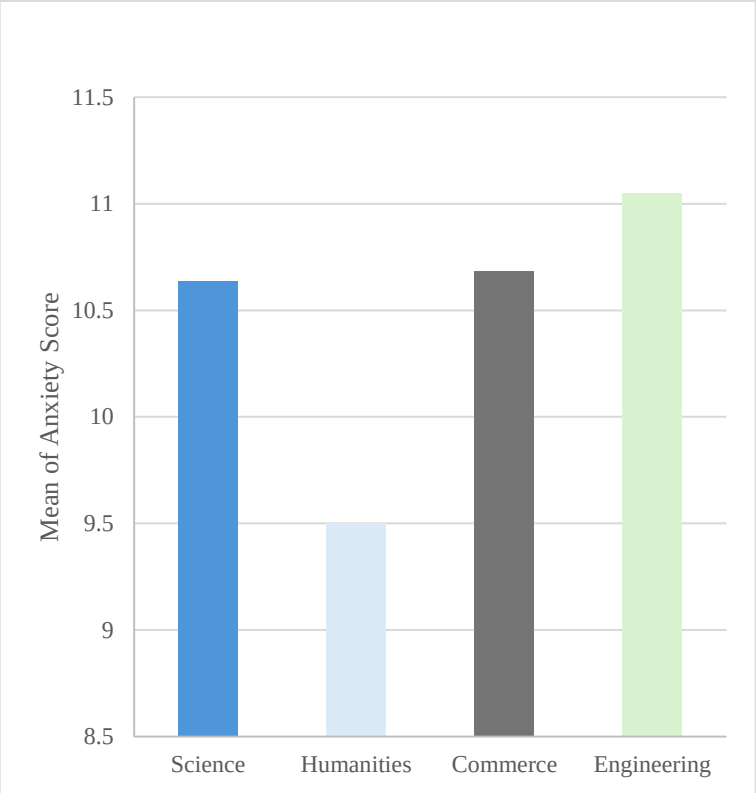
Bonferroni Post Hoc Test

Dependent Variable: Anxiety (measured by Anxiety Score)				
(I) Stream of Study	(J) Stream of Study	Mean Difference (I-J)	Std. Error	Sig.
Science	Humanities	1.136	.287	.000
Engineering	Humanities	1.549	.409	.001

Bonferroni Post Hoc test was calculated between each group combination to further examine the differences among the variables based on an alpha of .05. Science students had higher mean score than Humanities and it was statistically significant (p < .005). Moreover, Engineering students also had higher mean score than Humanities students, and it was statistically significant (p < .005).

Figure 4.36

Diagram showing mean of Anxiety Score in terms of Stream of Study



4.4 Stress and explanatory variables

4.4a Based on Gender

Table 4.52

Comparing Levels of Stress by Gender

Gender		Levels of Stress				
		Normal	Mild	Moderate	Severe	Extremely Severe
Female	Count	143	211	325	226	31
	% within Gender	15.3%	22.5%	34.7%	24.1%	3.3%
	% within Levels of Stress	75.3%	77.6%	72.5%	68.1%	66.0%
Male	Count	47	61	123	106	16
	% within Gender	13.3%	17.3%	34.8%	30.0%	4.5%
	% within Levels of Stress	24.7%	22.4%	27.5%	31.9%	34.0%
Total	Count	190	272	448	332	47
	% within Gender	14.7%	21.1%	34.8%	25.8%	3.6%
	% within Levels of Stress	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 4.37

Diagram showing Levels of Stress within Gender

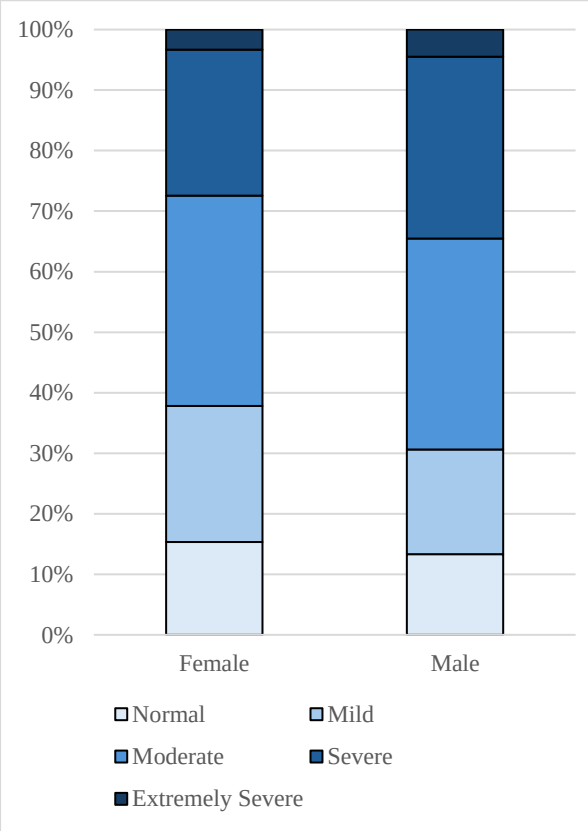
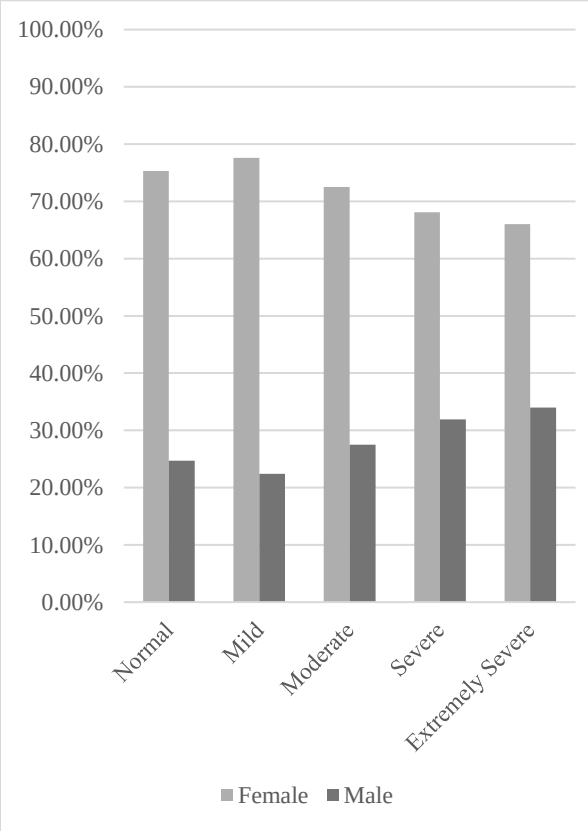


Figure 4.38

Diagram showing Gender within Levels of Stress



Following was the interpretation of table 4.52-

- **Female**
  - **Count**: Most students of this category were in Moderate group (325), followed by Severe (226), Mild (211), Normal (143), and Extremely Severe (31) group.
  - **Percentage within Gender**: In this gender, Moderate stress was the most prevalent (34.7%), followed by Severe (24.1%), Mild (22.5%), Normal (15.3%), and Extremely Severe (3.3%).

- **Percentage within Levels of Stress**: The percentages within each stress level for Female students were as follows: Normal = 75.3%%, Mild = 77.6%, Moderate = 72.5%, Severe = 68.1%, and Extremely Severe = 66.0%.

➢ **Male**

- **Count**: Most students of this category were in Moderate group (123), followed by Severe (106), Mild (61), Normal (47), and Extremely Severe (16) group.
- **Percentage within Gender**: In this gender, Moderate stress was the most prevalent (34.8%), followed by Severe (30.0%), Mild (17.3%), Normal (13.3%), and Extremely Severe (4.5%).
- **Percentage within Levels of Stress**: The percentages within each Stress level for Male students were as follows: Normal = 24.7%%, Mild = 22.4%, Moderate = 27.5%, Severe = 31.9%, and Extremely Severe = 34.0%.

➢ **Total**

Among total students, most pupils were in the Moderate category (34.8%, n = 448), followed by Severe (25.8%, n = 332), Mild (21.1%, n = 272), Normal (14.7%, n = 190), and Extremely Severe (3.6%, n = 47).

Table 4.53

Test between Levels of Stress and Gender

Chi-Square Test		
Value	df	Asymptotic Significance (2-sided)
8.527[a]	4	.074

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 12.87.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Gender. The test revealed that though there was variation in the distribution of Levels of Stress across the categories of Gender, no statistically

significant dependency ($\chi 2$ = 8.527, df = 4, p > .05) was identified. Therefore, the null hypothesis **$H_0$25** could be retained.

4.4b Based on Age

Table 4.54

Tests for Age and Stress

	Shapiro-Wilk			Spearman Correlation	
	Statistic	df	Sig.	ρ	Sig. (2-tailed)
Age	.949	1289	.000	.074	.008
Stress Score	.988	1289	.000		

Shapiro-Wilk test was run to explore the normality of data in Age, as well as in Stress Score. It was found that the Age data distribution was deviated from normality (α = .05, p = .000). Similarly, the data distribution of Stress Score was also deviated from normality (α = .05, p = .000). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between Age and Stress Score. The result of the Spearman correlation was examined based on an alpha value of .01 which found a weak (Dancey & Reidy, 2007), positive correlation between Age and Levels of Stress, with a correlation coefficient of .074, but the correlation was statistically significant (p < .01). Therefore, the null hypothesis **$H_0$26** could be rejected. Result of the correlation analysis suggested that as age increases, stress tends to increase.

4.4c Based on Habitat

Table 4.55

Comparing Levels of Stress by Habitat

Habitat		Levels of Stress				
		Normal	Mild	Moderate	Severe	Extremely Severe
Panchayat	Count	107	151	275	218	33
	% within Habitat	13.6%	19.3%	35.1%	27.8%	4.2%
	% within Levels of Stress	56.3%	55.5%	61.4%	65.7%	70.2%
Municipality	Count	74	116	155	87	9
	% within Habitat	16.8%	26.3%	35.1%	19.7%	2.0%
	% within Levels of Stress	38.9%	42.6%	34.6%	26.2%	19.1%
Municipal Corporation	Count	9	5	18	27	5
	% within Habitat	14.1%	7.8%	28.1%	42.2%	7.8%
	% within Levels of Stress	4.7%	1.8%	4.0%	8.1%	10.6%

Figure 4.39

Diagram showing Levels of Stress within Habitat

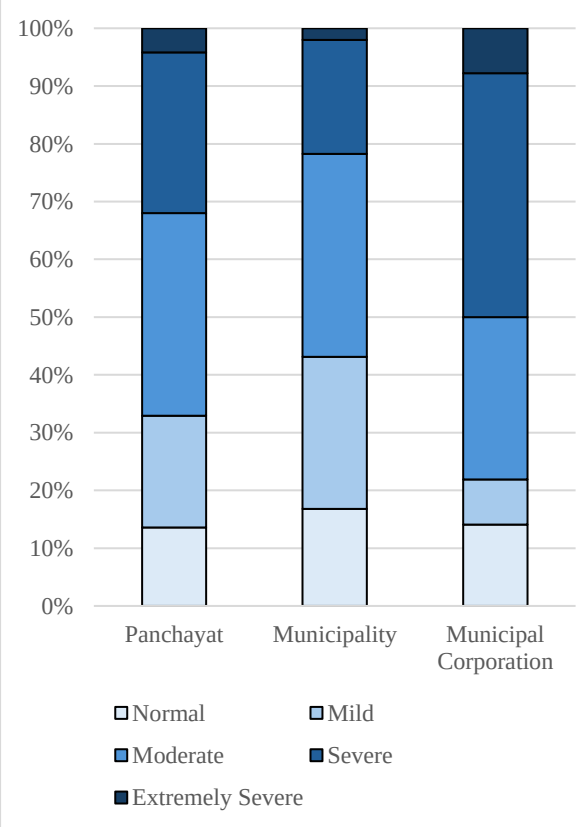
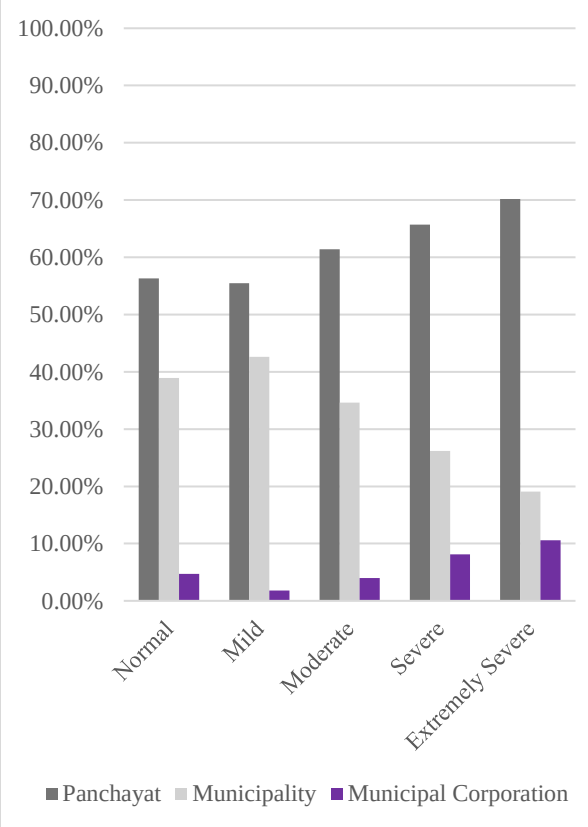


Figure 4.40

Diagram showing Habitat within Levels of Stress



Following was the interpretation of table 4.55-

- **Panchayat**
  - **Count**: Most students were in Moderate category (275), followed by Severe (218), Mild (151), Normal (107), and Extremely Severe (33).
  - **Percentage within Habitat**: In this habitat, Moderate stress was the most prevalent (35.1%), followed by Severe (27.8%), Mild (19.3%), Normal (13.6%), and Extremely Severe (4.2%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for students residing in Panchayat were as follows: Normal = 56.3%, Mild = 55.5%, Moderate = 61.4%, Severe = 65.7%, and Extremely Severe = 70.2%.
- **Municipality**
  - **Count**: Most students were in Moderate category (155), followed by Mild (116), Severe (87), Normal (74), and Extremely Severe (09).
  - **Percentage within Habitat**: In this habitat, Moderate stress was the most prevalent (35.1%), followed by Mild (26.3%), Severe (19.7%), Normal (16.8%), and Extremely Severe (2.0%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for students residing in Municipality were as follows: Normal = 38.9%, Mild = 42.6%, Moderate = 34.6%, Severe = 26.2%, and Extremely Severe = 19.1%.
- **Municipal Corporation**
  - **Count**: Most students were in Severe category (27), followed by Moderate (18), Normal (09), and same counts in both Mild (05) as well as Extremely Severe (05) category.

- **Percentage within Habitat**: In this habitat, Severe stress was the most prevalent (42.2%), followed by Moderate (28.1%), Normal (14.1%), and same counts in both Mild (7.8%) as well as Extremely Severe (7.8%) category.
- **Percentage within Levels of Stress**: The percentages within each stress level for students residing in Municipal Corporation were as follows: Normal = 4.7%, Mild = 1.8%, Moderate = 4.0%, Severe = 8.1%, and Extremely Severe = 10.6%.

Table 4.56

Tests between Levels of Stress and Habitat

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
36.079[a]	8	.000	.118	.000

Note. a. 1 cells (6.7%) had expected count less than 5. The minimum expected count was 2.33.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Habitat. The test revealed that there was statistically significant ($\chi 2 = 36.079$, $df = 8$, $p < .05$) relationship between Levels of Stress and Habitat. Therefore, the null hypothesis **$H_0$27** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .118) was moderate (Akoglu, 2018), and statistically significant ($p < .05$).

4.4d Based on Family Type

Table 4.57

Comparing Levels of Stress by Family Type

Family Type		Levels of Stress				
		Normal	Mild	Moderate	Severe	Extremely Severe
Nuclear Family	Count	142	211	335	245	39
	% within Family Type	14.6%	21.7%	34.5%	25.2%	4.0%
	% within Levels of Stress	74.7%	77.6%	74.8%	73.8%	83.0%
Joint Family	Count	48	61	113	87	8
	% within Family Type	15.1%	19.2%	35.6%	27.4%	2.5%
	% within Levels of Stress	25.3%	22.4%	25.2%	26.2%	17.0%

Figure 4.41

Diagram showing Levels of Stress within Family Type

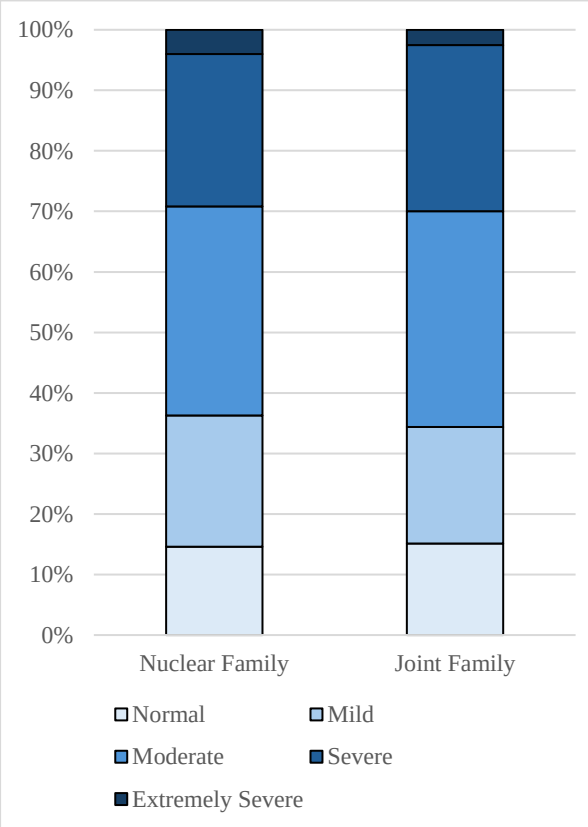
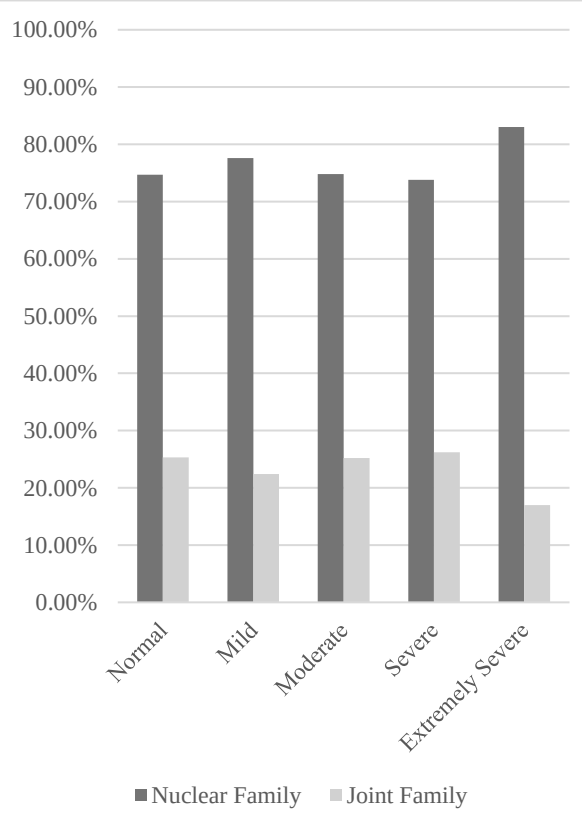


Figure 4.42

Diagram showing Family Type within Levels of Stress



Following was the interpretation of table 4.57-

- **Nuclear Family**
    - **Count**: Most students were in Moderate (335) category, followed by Severe (245), Mild (211), Normal (142), and Extremely Severe (39).
    - **Percentage within Family Type**: Moderate stress was the most prevalent (34.5%), followed by Severe (25.2%), Mild (21.7%), Normal (14.6%), and Extremely Severe (4.0%).
    - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Nuclear Family were as follows: Normal = 74.7%, Mild = 77.6%, Moderate = 74.8%, Severe = 73.8%, and Extremely Severe = 83.0%.

- **Joint Family**
    - **Count**: Most students were in Moderate (113) category, followed by Severe (87), Mild (61), Normal (48), and Extremely Severe (08).
    - **Percentage within Family Type**: Moderate stress was the most prevalent (35.6%), followed by Severe (27.4%), Mild (19.2%), Normal (15.1%), and Extremely Severe (2.5%).
    - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Joint Family were as follows: Normal = 25.3%, Mild = 22.4%, Moderate = 25.2%, Severe = 26.2%, and Extremely Severe = 17.0%.

Table 4.58

Test between Levels of Stress and Family Type

Chi-Square Test		
Value	df	Asymptotic Significance (2-sided)
2.749[a]	4	.601

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 11.56.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Family Type. The test revealed that though there was variation in the distribution of Levels of Stress across the categories of Family Type, no statistically significant dependency ($\chi 2 = 2.749$, df = 4, $p > .05$) was identified. Therefore, the null hypothesis **$H_0$28** could be retained.

4.4e Based on Religion

Table 4.59

Comparing Levels of Stress by Religion

		Levels of Stress				
Religion		Normal	Mild	Moderate	Severe	Extremely Severe
Hinduism	Count	155	224	352	241	35
	% within Religion	15.4%	22.2%	35.0%	23.9%	3.5%
	% within Levels of Stress	81.6%	82.4%	78.6%	72.6%	74.5%
Islam	Count	32	43	81	71	11
	% within Religion	13.4%	18.1%	34.0%	29.8%	4.6%
	% within Levels of Stress	16.8%	15.8%	18.1%	21.4%	23.4%
Christianity	Count	3	5	15	20	1
	% within Religion	6.8%	11.4%	34.1%	45.5%	2.3%
	% within Levels of Stress	1.6%	1.8%	3.3%	6.0%	2.1%

Figure 4.43
Diagram showing Levels of Stress within Religion

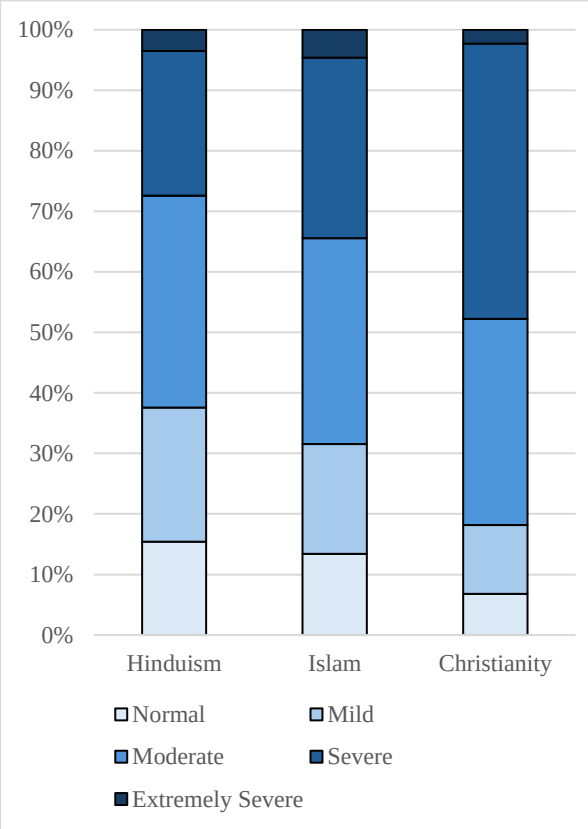
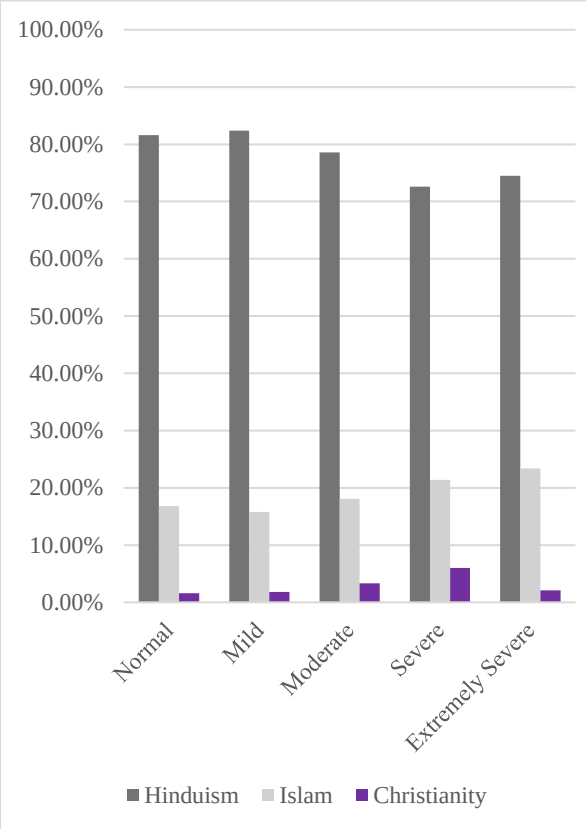


Figure 4.44
Diagram showing Religion within Levels of Stress



Following was the interpretation of table 4.59-

- **Hinduism**
  - **Count**: Most students were in Moderate (352) category, followed by Severe (241), Mild (224), Normal (155), and Extremely Severe (35).
  - **Percentage within Religion**: Moderate stress was the most prevalent (35.0%), followed by Severe (23.9%), Mild (22.2%), Normal (15.4%), and Extremely Severe (3.5%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Hinduism were as follows: Normal = 81.6%, Mild = 82.4%, Moderate = 78.6%, Severe = 72.6%, and Extremely Severe = 74.5%.

- **Islam**
    - **Count**: Most students were in Moderate (81) category, followed by Severe (71), Mild (43), Normal (32), and Extremely Severe (11).
    - **Percentage within Religion**: Moderate stress was the most prevalent (34.0%), followed by Severe (29.8%), Mild (18.1%), Normal (13.4%), and Extremely Severe (4.6%).
    - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Islam were as follows: Normal = 16.8%, Mild = 15.8%, Moderate = 18.1%, Severe = 21.4%, and Extremely Severe = 23.4%.
- **Christianity**
    - **Count**: Most students were in Severe (20) category, followed by Moderate (15), Mild (05), Normal (03), and Extremely Severe (01).
    - **Percentage within Religion**: Severe stress was the most prevalent (45.5%), followed by Moderate (34.1%), Mild (11.4%), Normal (6.8%), and Extremely Severe (2.3%).
    - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Christianity were as follows: Normal = 1.6%, Mild = 1.8%, Moderate = 3.3%, Severe = 6.0%, and Extremely Severe = 2.1%.

Table 4.60

Tests between Levels of Stress and Religion

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
16.520[a]	8	.036	.080	.036

Note. a. 1 cells (6.7%) had expected count less than 5. The minimum expected count was 1.60.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Religion. The test revealed that there was statistically significant ($\chi 2 = 16.520$, df = 8, $p < .05$) relationship between Levels of Stress and Religion. Therefore, the null hypothesis **$H_0$29** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .080) was weak (Akoglu, 2018), though statistically significant ($p < .05$).

4.4f Based on Social Category

Table 4.61

Comparing Levels of Stress by Social Category

		Levels of Stress				
Social category		Normal	Mild	Moderate	Severe	Extremely Severe
Unreserved	Count	101	128	196	116	15
	% within Social Category	18.2%	23.0%	35.3%	20.9%	2.7%
	% within Levels of Stress	53.2%	47.1%	43.8%	34.9%	31.9%
Scheduled Caste	Count	42	63	118	87	20
	% within Social Category	12.7%	19.1%	35.8%	26.4%	6.1%
	% within Levels of Stress	22.1%	23.2%	26.3%	26.2%	42.6%
Scheduled Tribe	Count	7	10	30	26	2
	% within Social Category	9.3%	13.3%	40.0%	34.7%	2.7%
	% within Levels of Stress	3.7%	3.7%	6.7%	7.8%	4.3%
Other Backward Class	Count	40	71	104	103	10
	% within Social Category	12.2%	21.6%	31.7%	31.4%	3.0%
	% within Levels of Stress	21.1%	26.1%	23.2%	31.0%	21.3%

Figure 4.45

Diagram showing Levels of Stress within Social Category

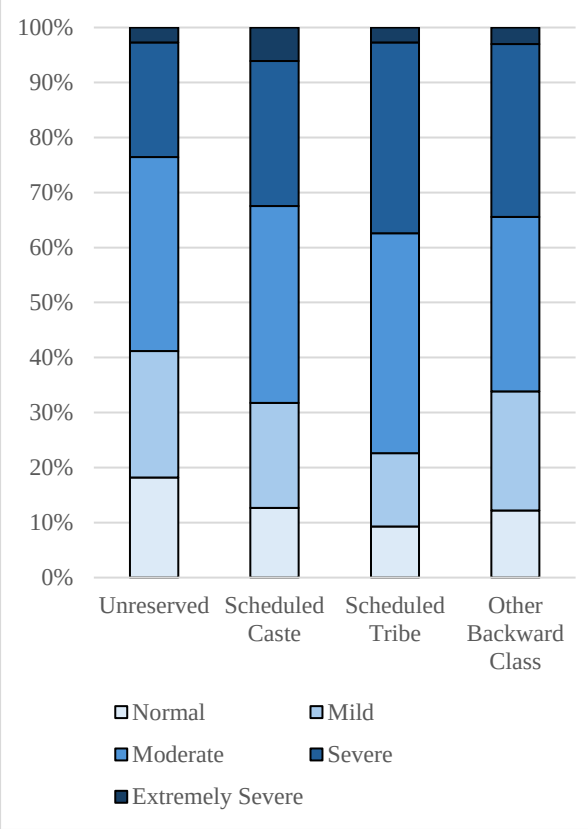
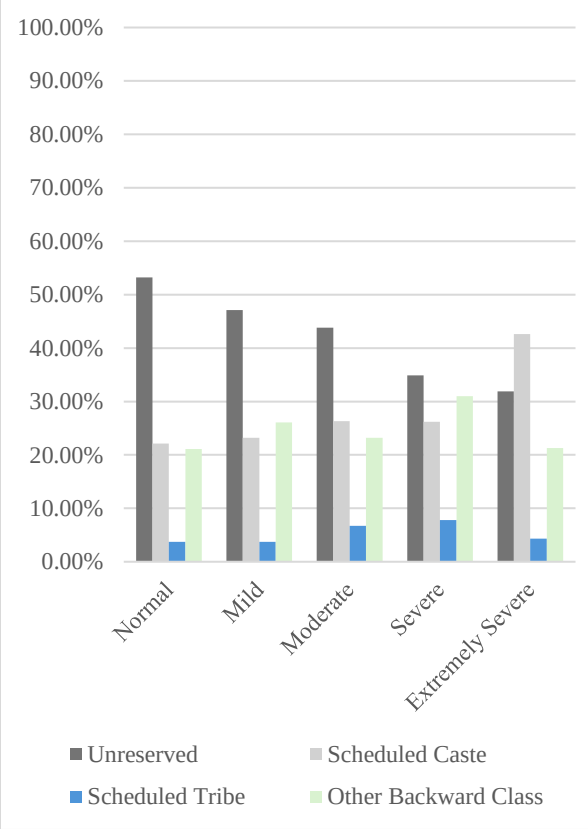


Figure 4.46

Diagram showing Social Category within Levels of Stress



Following was the interpretation of table 4.61-

- **Unreserved**
  - **Count**: Most students were in Moderate (196) category, followed by Mild (128), Severe (116), Normal (101), and Extremely Severe (15).
  - **Percentage within Social Category**: Moderate stress was the most prevalent (35.3%), followed by Mild (23.0%), Severe (20.9%), Normal (18.2%), and Extremely Severe (2.7%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Unreserved were as follows: Normal = 53.2%, Mild = 47.1%, Moderate = 43.8%, Severe = 34.9%, and Extremely Severe = 31.9%.

- **Scheduled Caste**
  - **Count**: Most students were in Moderate (118) category, followed by Severe (87), Mild (63), Normal (42), and Extremely Severe (20).
  - **Percentage within Social Category**: Moderate stress was the most prevalent (35.8%), followed by Severe (26.4%), Mild (19.1%), Normal (12.7%), and Extremely Severe (6.1%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Scheduled Caste were as follows: Normal = 22.1%, Mild = 23.2%, Moderate = 26.3%, Severe = 26.2%, and Extremely Severe = 42.6%.
- **Scheduled Tribe**
  - **Count**: Most students were in Moderate (30) category, followed by Severe (26), Mild (10), Normal (07), and Extremely Severe (02).
  - **Percentage within Social Category**: Moderate stress was the most prevalent (40.0%), followed by Severe (34.7%), Mild (13.3%), Normal (9.3%), and Extremely Severe (2.7%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Scheduled Tribe were as follows: Normal = 3.7%, Mild = 3.7%, Moderate = 6.7%, Severe = 7.8%, and Extremely Severe = 4.3%.
- **Other Backward Class**
  - **Count**: Most students were in Moderate (104) category, followed by Severe (103), Mild (71), Normal (40), and Extremely Severe (10).

- **Percentage within Social Category**: Moderate stress was the most prevalent (31.7%), followed by Severe (31.4%), Mild (21.6%), Normal (12.2%), and Extremely Severe (3.0%).
- **Percentage within Levels of Stress**: The percentages within each stress level for students belongs to Other Backward Class were as follows: Normal = 21.1%, Mild = 26.1%, Moderate = 23.2%, Severe = 31.0%, and Extremely Severe = 21.3%.

Table 4.62

Tests between Levels of Stress and Social Category

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
32.414[a]	12	.001	.092	.001

Note. a. 1 cells (5.0%) had expected count less than 5. The minimum expected count was 2.73.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Social Category. The test revealed that there was statistically significant ($\chi 2 = 32.414$, df = 12, $p < .05$) relationship between Levels of Stress and Social Category. Therefore, the null hypothesis **$H_0$30** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .092) was weak (Akoglu, 2018), though statistically significant ($p < .05$).

4.4g Based on Course Level

Table 4.63

Comparing Levels of Stress by Course Level

		Levels of Stress				
Course Level		Normal	Mild	Moderate	Severe	Extremely Severe
Undergraduate	Count	124	216	293	194	22
	% within Academic Level	14.6%	25.4%	34.5%	22.9%	2.6%
	% within Levels of Stress	65.3%	79.4%	65.4%	58.4%	46.8%
Postgraduate	Count	66	56	155	138	25
	% within Academic Level	15.0%	12.7%	35.2%	31.4%	5.7%
	% within Levels of Stress	34.7%	20.6%	34.6%	41.6%	53.2%

Figure 4.47

Diagram showing Levels of Stress within Course Level

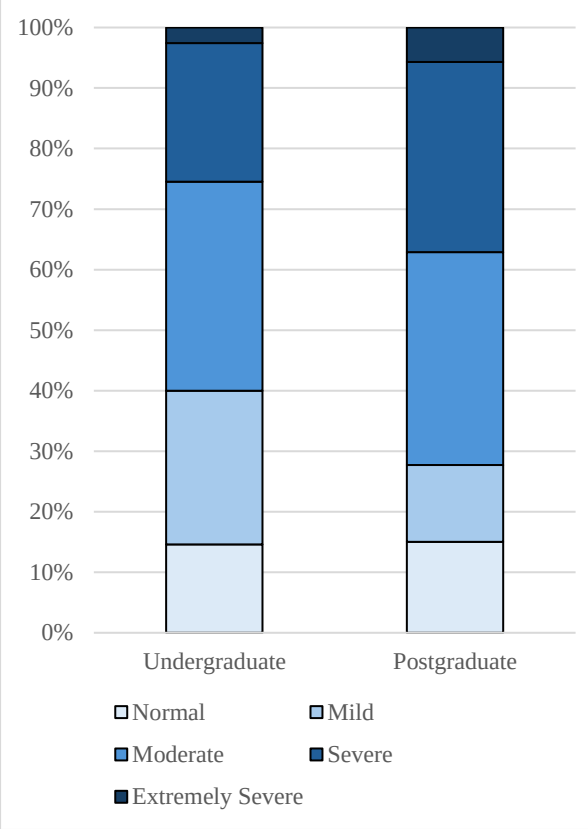
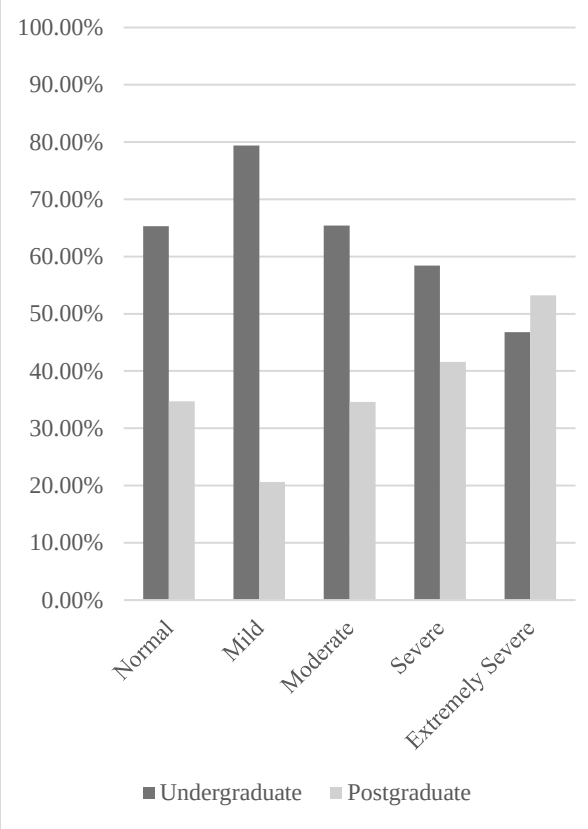


Figure 4.48

Diagram showing Course Level within Levels of Stress



Following was the interpretation of table 4.63-

- **Undergraduate**
  - **Count**: Most students were in Moderate (293) category, followed by Mild (216), Severe (194), Normal (124), and Extremely Severe (22).
  - **Percentage within Course Level**: Moderate stress was the most prevalent (34.5%), followed by Mild (25.4%), Severe (22.9%), Normal (14.6%), and Extremely Severe (2.6%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for Undergraduate students were as follows: Normal = 65.3%, Mild = 79.4%, Moderate = 65.4%, Severe = 58.4%, and Extremely Severe = 46.8%.

- **Postgraduate**
    - **Count**: Most students were in Moderate (155) category, followed by Severe (138), Normal (66), Mild (56), and Extremely Severe (25).
    - **Percentage within Course Level**: Moderate stress was the most prevalent (35.2%), followed by Severe (31.4%), Normal (15.0%), Mild (12.7%), and Extremely Severe (5.7%).
    - **Percentage within Levels of Stress**: The percentages within each stress level for Postgraduate students were as follows: Normal = 34.7%, Mild = 20.6%, Moderate = 34.6%, Severe = 41.6%, and Extremely Severe = 53.2%.

Table 4.64

Tests between Levels of Stress and Course Level

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
38.021[a]	4	.000	.172	.000

Note. a. 0 cells (0.0%) had expected count less than 5. The minimum expected count was 16.04.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Course Level. The test revealed that there was statistically significant ($\chi 2 = 38.021$, df = 4, $p < .05$) relationship between Levels of Stress and Course Level. Therefore, the null hypothesis **$H_0$31** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .172) was strong (Akoglu, 2018), and statistically significant ($p < .05$).

4.4h Based on Stream of Study

Table 4.65

Comparing Levels of Stress by Stream of Study

Stream of Study		Levels of Stress				
		Normal	Mild	Moderate	Severe	Extremely Severe
Science	Count	14	18	47	41	7
	% within Stream of Study	11.0%	14.2%	37.0%	32.3%	5.5%
	% within Levels of Stress	7.4%	6.6%	10.5%	12.3%	14.9%
Humanities	Count	161	249	370	256	29
	% within Stream of Study	15.1%	23.4%	34.7%	24.0%	2.7%
	% within Levels of Stress	84.7%	91.5%	82.6%	77.1%	61.7%
Commerce	Count	11	3	10	12	2
	% within Stream of Study	28.9%	7.9%	26.3%	31.6%	5.3%
	% within Levels of Stress	5.8%	1.1%	2.2%	3.6%	4.3%
Engineering	Count	4	2	21	23	9
	% within Stream of Study	6.8%	3.4%	35.6%	39.0%	15.3%
	% within Levels of Stress	2.1%	0.7%	4.7%	6.9%	19.1%

Figure 4.49

Diagram showing Levels of Stress within Stream of Study

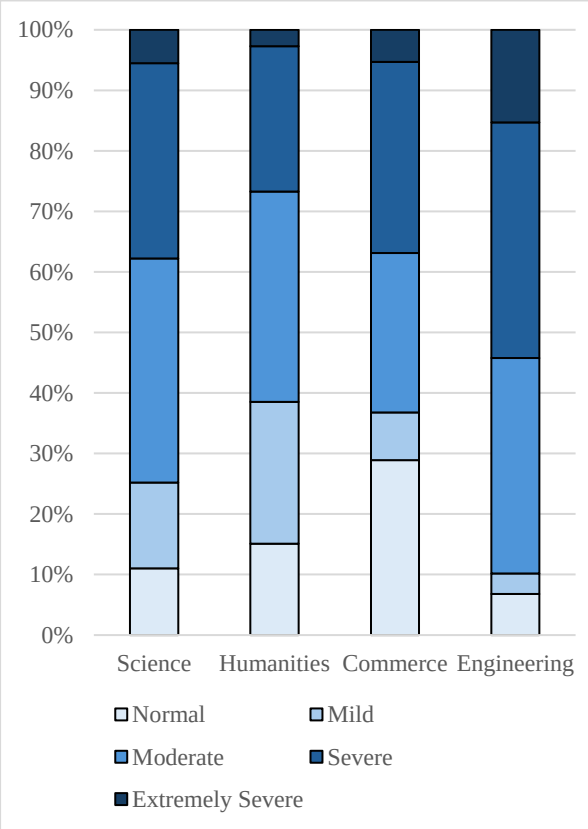
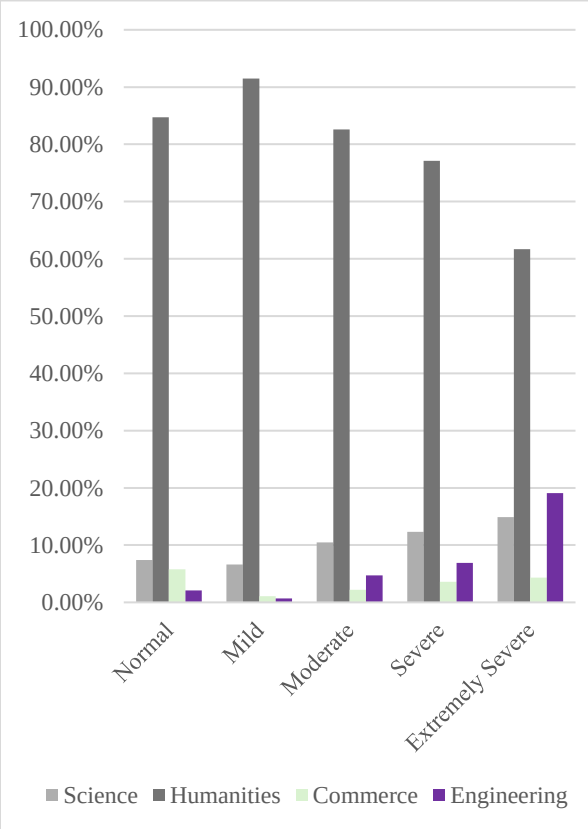


Figure 4.50

Diagram showing Stream of Study within Levels of Stress



Following was the interpretation of table 4.65-

- **Science**
  - **Count**: Most students were in Moderate (47) category, followed by Severe (41), Mild (18), Normal (14), and Extremely Severe (07).
  - **Percentage within Stream of Study**: Moderate stress was the most prevalent (37.0%), followed by Severe (32.3%), Mild (14.2%), Normal (11.0%), and Extremely Severe (5.5%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for Science students were as follows: Normal = 7.4%, Mild = 6.6%, Moderate = 10.5%, Severe = 12.3%, and Extremely Severe = 14.9%.
- **Humanities**
  - **Count**: Most students were in Moderate (370) category, followed by Severe (256), Mild (249), Normal (161), and Extremely Severe (29).
  - **Percentage within Stream of Study**: Moderate stress was the most prevalent (34.7%), followed by Severe (24.0%), Mild (23.4%), Normal (15.1%), and Extremely Severe (2.7%).
  - **Percentage within Levels of Stress**: The percentages within each stress level for Humanities students were as follows: Normal = 84.7%, Mild = 91.5%, Moderate = 82.6%, Severe = 77.1%, and Extremely Severe = 61.7%.
- **Commerce**
  - **Count**: Most students were in Severe (12) category, followed by Normal (11), Moderate (10), Mild (03), and Extremely Severe (02).

- **Percentage within Stream of Study**: Severe stress was the most prevalent (31.6%), followed by Normal (28.9%), Moderate (26.3%), Mild (7.9%), and Extremely Severe (5.3%).
- **Percentage within Levels of Stress**: The percentages within each stress level for Commerce students were as follows: Normal = 5.8%, Mild = 1.1%, Moderate = 2.2%, Severe = 3.6%, and Extremely Severe = 4.3%.

➢ **Engineering**

- **Count**: Most students were in Severe (23) category, followed by Moderate (21), Extremely Severe (09), Normal (04), and Mild (02).
- **Percentage within Stream of Study**: Severe stress was the most prevalent (39.0%), followed by Moderate (35.6%), Extremely Severe (15.3%), Normal (6.8%), and Mild (3.4%).
- **Percentage within Levels of Stress**: The percentages within each stress level for Engineering students were as follows: Normal = 2.1%, Mild = 0.7%, Moderate = 4.7%, Severe = 6.9%, and Extremely Severe = 19.1%.

Table 4.66

Tests between Levels of Stress and Stream of Study

Chi-Square Test			Cramer's V Test	
Value	df	Asymptotic Significance (2-sided)	Value	Approximate Significance
61.038[a]	12	.000	.126	.000

Note. a. 3 cells (15.0%) had expected count less than 5. The minimum expected count was 1.39.

A Chi-Square Test of independence was conducted to check the association between Levels of Stress and Stream of Study. The test revealed that there was statistically significant ($\chi 2 = 38.021$, df = 4, $p < .05$) relationship between Levels of Stress

and Stream of Study. Therefore, the null hypothesis **$H_0$32** could be rejected. The Cramer's V Test showed that the strength of relationship (Value = .172) was moderate (Akoglu, 2018), and statistically significant ($p < .05$).

4.5 Relationship between Ecospirituality and Depression

4.5a Correlation between Ecospirituality and Depression

Table 4.67
Tests for Ecospirituality and Depression

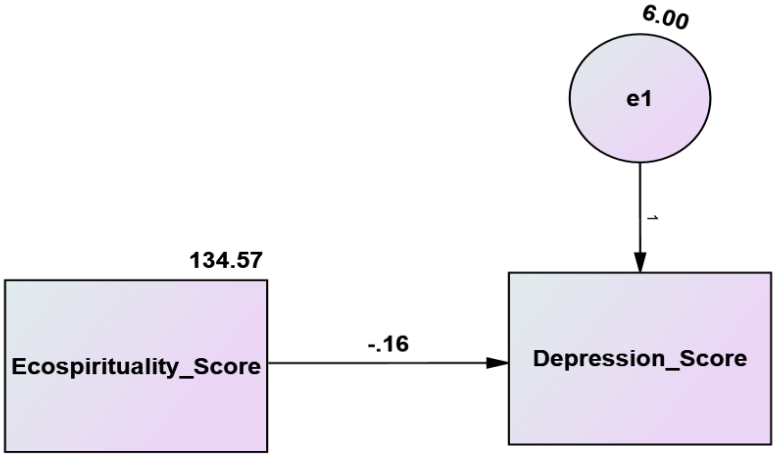
	Shapiro-Wilk			Spearman Correlation		
	Statistic	df	Sig.	ρ	Sig. (2-tailed)	ρ^2
Ecospirituality Score	.998	1289	.192	-.719	.000	.5169
Depression Score	.986	1289	.000			

Shapiro-Wilk test was run to explore the normality of data in Ecospirituality Score (ES), as well as in Depression Score (DS). The data distribution of DS was deviated from normality (α = .05, p = .000). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between ES and DS. The result of the Spearman correlation was examined based on an alpha value of .01 which found a strong (Dancey & Reidy, 2007), negative correlation between ES and DS, with a correlation coefficient of -.719, and the correlation was statistically significant ($p < .01$). Therefore, the null hypothesis **$H_0$33** could be rejected. The coefficient of determination revealed that the variation in ES statistically explained 51.69% of the variation in DS. Result of the correlation analysis suggested that as ecospirituality increases, depression has a strong tendency to decrease.

4.5b Path Analysis between Ecospirituality and Depression

Figure 4.51

Path Diagram between Ecospirituality and Depression



a) Path Coefficient Interpretation

- *Unstandardized Regression Weights:* Depression Score <— Ecospirituality Score

Estimate: -.162

Standard Error (S.E.): .006

Critical Ratio (C.R.): -27.608

P Label: < .001

- *Standardized Regression Weights:* Depression Score <— Ecospirituality Score

Estimate = -.610

The unstandardized regression weight of -0.162 suggests that there was a negative relationship between Ecospirituality Score (ES) and Depression Score (DS). Specifically, for one unit increase in ES, DS dropped by 0.162 units. This provided information about both the direction and magnitude of the effect, using the original units of the variables. The standard error of 0.006 was indicative of a high level of precision in the estimate. The critical ratio (CR) of -27.608, being greater than -1.96, established statistical significance at the 0.001 level.

The standardised regression weight of -0.610 signified that for one standard deviation increase in ES, there was a corresponding decrease of 0.610 standard deviations in DS. The standardised coefficient enables the comparison of effect sizes across variables and scales.

b) Squared Multiple Correlation (R^2)

R^2 for DS: Estimate = 0.372.

The R^2 value of 0.372 meant that 37.2% of the variance in DS is explained by ES. This indicated a moderate level of explanatory power for the independent variable ES.

c) Model Fit Indices

CMIN (Chi-Square): 0.000

Degrees of Freedom (df): 0

A Chi-Square value of 0.000 with 0 degrees of freedom indicated that the model was saturated or just identified. This meant the model perfectly fitted the data. Though the traditional model fit indices (CFI, TLI, RMSEA etc) were not informative due to the model's saturation or just-identification, the path result was still robust and provide meaningful insights.

4.6 Relationship between Ecospirituality and Anxiety

4.6a Correlation between Ecospirituality and Anxiety

Table 4.68

Tests for Ecospirituality and Anxiety

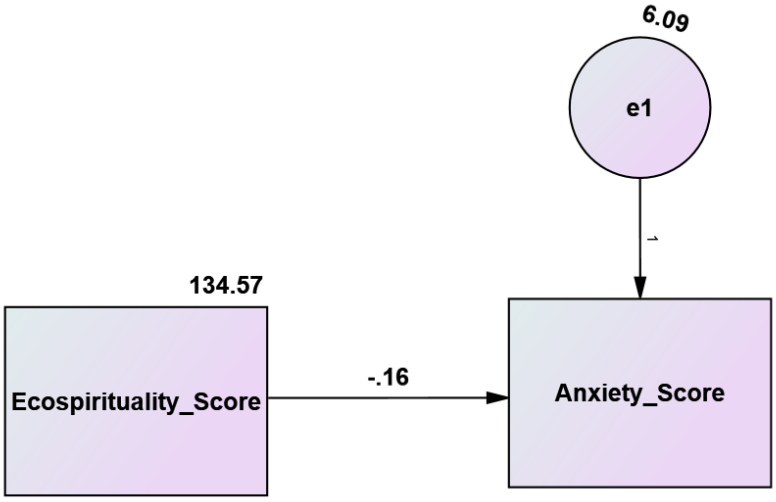
	Shapiro-Wilk			Spearman Correlation		
	Statistic	df	Sig.	ρ	Sig. (2-tailed)	ρ^2
Ecospirituality Score	.998	1289	.192	-.715	.000	.5112
Anxiety Score	.987	1289	.000			

Shapiro-Wilk test was run to explore the normality of data in Ecospirituality Score (ES), as well as in Anxiety Score (AS). The data distribution of AS was deviated from normality (α = .05, p = .000). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between ES and AS. The result of the Spearman correlation was examined based on an alpha value of .01 which found a strong (Dancey & Reidy, 2007), negative correlation between ES and AS, with a correlation coefficient of -.715, and the correlation was statistically significant (p < .01). Therefore, the null hypothesis **$H_0$34** could be rejected. The coefficient of determination revealed that the variation in ES statistically explained 51.12% of the variation in AS. Result of the correlation analysis suggested that as ecospirituality increases, anxiety has a strong tendency to decrease.

4.6b Path Analysis between Ecospirituality and Anxiety

Figure 4.52

Path Diagram between Ecospirituality and Anxiety



a) Path Coefficient Interpretation

- *Unstandardized Regression Weights:* Anxiety Score <— Ecospirituality Score

Estimate: -.160

Standard Error (S.E.): .006

Critical Ratio (C.R.): -26.966

P Label: < .001

- *Standardized Regression Weights:* Anxiety Score <— Ecospirituality Score

Estimate = -.601

The unstandardized regression weight of -0.160 suggested that there was a negative relationship between Ecospirituality Score (ES) and Anxiety Score (AS). Specifically, for one unit increase in ES, AS dropped by 0.160 units. This provided information about both the direction and magnitude of the effect, using the original units of the variables. The standard error of 0.006 was indicative of a high level of precision in the estimate. The critical ratio (CR) of -26.966, being greater than -1.96, established statistical significance at the 0.001 level.

The standardised regression weight of -0.601 signified that for one standard deviation increase in ES, there was a corresponding decrease of 0.601 standard deviations in AS. The standardised coefficient enables the comparison of effect sizes across variables and scales.

b) Squared Multiple Correlation (R^2)

R^2 for AS: Estimate = 0.361.

The R^2 value of 0.361 meant that 36.1% of the variance in AS was explained by ES. This indicated a moderate level of explanatory power for the independent variable ES.

c) Model Fit Indices

CMIN (Chi-Square): 0.000

Degrees of Freedom (df): 0

A Chi-Square value of 0.000 with 0 degrees of freedom indicated that the model was saturated or just identified. This meant the model perfectly fitted the data. Though the traditional model fit indices (CFI, TLI, RMSEA etc) were not informative due to the model's saturation or just-identification, the path result was still robust and provide meaningful insights.

4.7 Relationship between Ecospirituality and Stress

4.7a Correlation between Ecospirituality and Stress

Table 4.69

Tests for Ecospirituality and Stress

	Shapiro-Wilk			Spearman Correlation		
	Statistic	df	Sig.	ρ	Sig. (2-tailed)	ρ^2
Ecospirituality Score	.998	1289	.192	-.671	.000	.4502
Stress Score	.988	1289	.000			

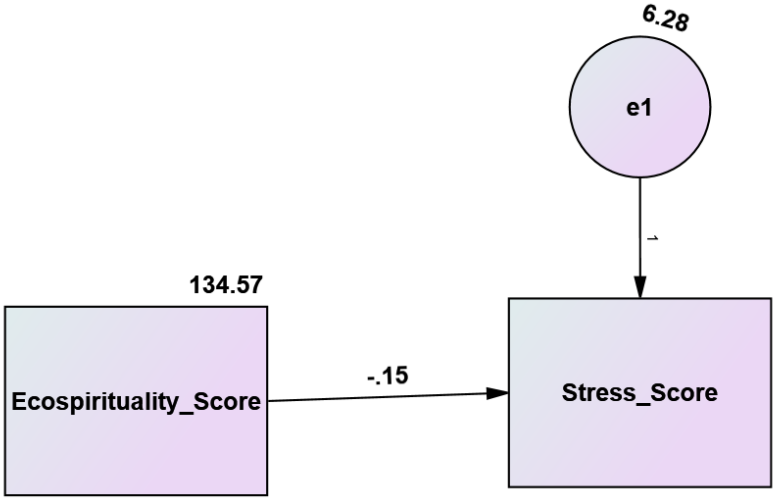
Shapiro-Wilk test was run to explore the normality of data in Ecospirituality Score (ES), as well as in Stress Score (SS). The data distribution of SS was deviated from normality (α = .05, p = .000). In cases when continuous data is not regularly distributed, a Spearman Correlation can be employed as a metric to assess the presence of a monotonic relationship (Schober et al., 2018). So, to find out the correlation, instead of using Pearson Correlation, the Spearman Correlation analysis was conducted between ES and SS. The result of the Spearman correlation was examined based on an alpha value of .01 which found a strong (Dancey & Reidy, 2007), negative correlation between ES and SS, with a correlation coefficient of -.671, and the correlation was statistically significant

(p < .01). Therefore, the null hypothesis **$H_0$35** could be rejected. The coefficient of determination revealed that the variation in ES statistically explained 45.02% of the variation in SS. Result of the correlation analysis suggested that as ecospirituality increases, stress has a strong tendency to decrease.

4.7b Path Analysis between Ecospirituality and Stress

Figure 4.53

Path Diagram between Ecospirituality and Stress



a) Path Coefficient Interpretation

- *Unstandardized Regression Weights:* Stress Score <— Ecospirituality Score

Estimate: -.154

Standard Error (S.E.): .006

Critical Ratio (C.R.): -25.535

P Label: < .001

- *Standardized Regression Weights:* Stress Score <— Ecospirituality Score

Estimate = -.580

The unstandardized regression weight of -0.154 suggested that there was a negative relationship between Ecospirituality Score (ES) and Stress Score (SS). Specifically, for one unit increase in ES, SS dropped by 0.154 units. This provided information about both the direction and magnitude of the effect, using the original units of the variables. The standard error of 0.006 was indicative of a high level of precision in the estimate. The critical ratio (CR) of -25.535, being greater than -1.96, established statistical significance at the 0.001 level.

The standardised regression weight of -0.580 signified that for one standard deviation increase in ES, there was a corresponding decrease of 0.580 standard deviations in SS. The standardised coefficient enables the comparison of effect sizes across variables and scales.

b) Squared Multiple Correlation (R^2)

R^2 for SS: Estimate = 0.336.

The R^2 value of 0.336 meant that 33.6% of the variance in SS was explained by ES. This indicated a moderate level of explanatory power for the independent variable ES.

c) Model Fit Indices

CMIN (Chi-Square): 0.000

Degrees of Freedom (df): 0

A Chi-Square value of 0.000 with 0 degrees of freedom indicated that the model was saturated or just identified. This meant the model perfectly fitted the data. Though the traditional model fit indices (CFI, TLI, RMSEA etc) were not informative due to the model's saturation or just-identification, the path result was still robust and provide meaningful insights.

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CHAPTER V

DISCUSSION AND CONCLUSION

"We are talking only to ourselves. We are not talking to the rivers, we are not listening to the wind and stars. We have broken the great conversation. By breaking that conversation we have shattered the universe. All the disasters that are happening now are a consequence of that spiritual "autism." "

- Berry (1988, as cited in Vaughan-Lee, ed., 2013)

Chapter V Discussion and Conclusion

The main aim of the study was to examine the **"The relationship between higher education students' ecospirituality and their depression, anxiety, stress."** This chapter include a summary of the key findings, summary of the rejected hypotheses, discussion of the significant findings, limitation and further research directions, recommendations, and conclusion.

5.1 Overview of key findings

- **Ecospirituality and Gender**
  - Female students had statistically significant slightly higher mean score than Male students in overall Ecospirituality Score.
- **Ecospirituality and Age**
  - A statistically significant weak negative correlation was found between the Ecospirituality Score of higher education students and their Age.
- **Ecospirituality and Habitat**
  - Students from habitat Municipality had statistically significant slightly higher mean score than students from Panchayat, and from Municipal Corporation in overall Ecospirituality Score.
- **Ecospirituality and Family Type**
  - Students from Nuclear Family had slightly higher mean score than students from Joint Family in overall Ecospirituality Score. Though the difference was not statistically significant.

- **Ecospirituality and Religion**
    - Students from religion Hinduism had statistically significant slightly higher mean score than students from Islam, and from Christianity in overall Ecospirituality Score.
- **Ecospirituality and Social Category**
    - Students from Unreserved category had statistically significant slightly higher mean score than students from Scheduled Caste, from Scheduled Tribe, and from Other Backward Class in overall Ecospirituality Score.
- **Ecospirituality and Course Level**
    - Undergraduate students had statistically significant slightly higher mean score than Postgraduate students in overall Ecospirituality Score.
- **Ecospirituality and Stream of Study**
    - Humanities students had statistically significant slightly higher mean score than Science, Commerce, and Engineering students in overall Ecospirituality Score.
- **Depression and Gender**
    - Although test showed a statistically significant relationship between Levels of Depression and Gender, the effect size revealed that the practical impact was minimal.
- **Depression and Age**
    - A statistically significant weak positive correlation was found between the Depression Score of higher education students and their Age.
- **Depression and Habitat**
    - Statistically significant, a moderate relationship was found between Levels of Depression and Habitat. Students in Municipal Corporation were more

inclined towards Severe category, whereas students in Panchayat and students in Municipality were more inclined towards Moderate category.

- **Depression and Family Type**
    - Test revealed that though there was variation in the distribution of Levels of Depression across the categories of Family Type, the difference was not statistically significant.
- **Depression and Religion**
    - Statistically significant, a moderate relationship was found between Levels of Depression and Religion. Students from Christianity were more inclined towards Severe category, whereas students from Hinduism and students from Islam were more inclined towards Moderate category.
- **Depression and Social Category**
    - Statistically significant, a moderate relationship was found between Levels of Depression and Social Category. Students from Scheduled Tribe were more inclined towards Severe category, whereas students from Unreserved category, students from Scheduled Caste, and students from Other Backward Class were more inclined towards Moderate category.
- **Depression and Course Level**
    - Statistically significant, a strong relationship was found between Levels of Depression and Course Level. Postgraduate students were more inclined towards Severe category, whereas Undergraduate students were more inclined towards Moderate category.
- **Depression and Stream of Study**
    - Statistically significant, a moderate relationship was found between Levels of Depression and Stream of Study. Humanities students were more

inclined towards Moderate category, whereas Science students, Commerce students, and Engineering students were more inclined towards Severe category.

- **Anxiety and Gender**
    - Statistically significant, a moderate relationship was found between Levels of Anxiety and Gender. Though Female and Male students had almost same pattern of inclination in Extremely Severe, Severe, and Moderate category; they differed in the rest two categories. Female students had same counts in both Mild as well as Normal category. But in the case of Male students, Normal category came last, just after the Mild category.
- **Anxiety and Age**
    - A statistically significant weak positive correlation was found between the Anxiety Score of higher education students and their Age.
- **Anxiety and Habitat**
    - Statistically significant, a moderate relationship was found between Levels of Anxiety and Habitat. Though the students in three groups of the Habitat, had higher inclination towards Extremely Severe category; they differed in their lower inclination. Students in Panchayat, and students in Municipality had lower inclination towards Mild, and Normal category. Students in Municipal Corporation had lower inclination towards Moderate, Mild, Normal and Severe category.
- **Anxiety and Family Type**
    - Test revealed that though there was variation in the distribution of Levels of Anxiety across the categories of Family Type, the difference was not statistically significant.

- **Anxiety and Religion**
    - Statistically significant, a moderate relationship was found between Levels of Anxiety and Religion. Though the students in three groups of the Religion, had higher inclination towards Extremely Severe category; they differed in their lower inclination. Students from Hinduism, and students from Islam had lower inclination towards Mild, and Normal category. Students from Christianity had lower inclination towards Normal and Moderate category.
- **Anxiety and Social Category**
    - Statistically significant, a moderate relationship was found between Levels of Anxiety and Social Category. Though the students in four groups of the Religion, had higher inclination towards Extremely Severe category; they differed in their least inclination. Students in Unreserved group had least inclination towards Mild category, whereas students in Scheduled Caste, students in Scheduled Tribe, and students in Other Backward Class, had lower inclination towards Normal category.
- **Anxiety and Course Level**
    - Statistically significant, a strong relationship was found between Levels of Anxiety and Course Level. Though Undergraduate and Postgraduate students had almost same pattern of inclination in Extremely Severe, Severe, and Moderate category; they differed in the rest two categories. Postgraduate students had same counts in both Mild as well as Normal category. But in the case of Undergraduate students, Normal category came last, just after the Mild category.

- **Anxiety and Stream of Study**
    - In case of Anxiety Score, Science students as well as Engineering students had statistically significant higher mean score than Humanities students.
- **Stress and Gender**
    - Test revealed that though there was variation in the distribution of Levels of Stress across the categories of Gender, the difference was not statistically significant.
- **Stress and Age**
    - A statistically significant weak positive correlation was found between the Stress Score of higher education students and their Age.
- **Stress and Habitat**
    - Statistically significant, a moderate relationship was found between Levels of Stress and Habitat. Students in Municipal Corporation were more inclined towards Severe category, whereas students in Panchayat and students in Municipality were more inclined towards Moderate category.
- **Stress and Family Type**
    - Test revealed that though there was variation in the distribution of Levels of Stress across the categories of Family Type, the difference was not statistically significant.
- **Stress and Religion**
    - Although test showed a statistically significant relationship between Levels of Stress and Religion, the effect size revealed that the practical impact was minimal.

- **Stress and Social Category**
    - Although test showed a statistically significant relationship between Levels of Stress and Social Category, the effect size revealed that the practical impact was minimal.
- **Stress and Course Level**
    - Statistically significant, a strong relationship was found between Levels of Stress and Course Level. Among Undergraduate students, Moderate stress was the most prevalent, followed by Mild, Severe, Normal, and Extremely Severe stress. Whereas among Postgraduate students, Moderate stress was the most prevalent, followed by Severe, Normal, Mild, and Extremely Severe stress.
- **Stress and Stream of Study**
    - Statistically significant, a moderate relationship was found between Levels of Stress and Stream of Study. Science students as well as Humanities students showed the highest inclination in Moderate category. On the other hand, Commerce students, and Engineering students showed highest inclination in Severe category.
- **Ecospirituality and Depression**
    - A statistically significant strong negative correlation was found between the Ecospirituality Score of higher education students and their Depression Score.
    - For one unit increase in Ecospirituality Score, Depression Score dropped by 0.162 units.
    - A moderate level of explanatory power for the variance in the Depression Score was revealed by the Ecospirituality Score.

- **Ecospirituality and Anxiety**
    - A statistically significant strong negative correlation was found between the Ecospirituality Score of higher education students and their Anxiety Score.
    - For one unit increase in Ecospirituality Score, Anxiety Score dropped by 0.160 units.
    - A moderate level of explanatory power for the variance in the Anxiety Score was revealed by the Ecospirituality Score.
- **Ecospirituality and Stress**
    - A statistically significant strong negative correlation was found between the Ecospirituality Score of higher education students and their Stress Score.
    - For one unit increase in Ecospirituality Score, Stress Score dropped by 0.154 units.
    - A moderate level of explanatory power for the variance in the Stress Score was revealed by the Ecospirituality Score.

5.2 Summary of the rejected hypotheses

The hypotheses of the present study were formulated in previous chapter II. After all the statistical analyses and interpretations, the rejected hypotheses have been presented here for better comprehension.

Table 5.1

The Rejected Hypotheses

Sl.	Hypothesis No.	Statement
1	$H_0$1	There is no significant difference in Ecospirituality Score of the students in terms of Gender.
2	$H_0$2	There is no significant relationship between Ecospirituality Score and Age of the students.
3	$H_0$3	There is no significant difference in Ecospirituality Score of the students in terms of Habitat.
4	$H_0$5	There is no significant difference in Ecospirituality Score of the students in terms of Religion.
5	$H_0$6	There is no significant difference in Ecospirituality Score of the students in terms of Social Category.
6	$H_0$7	There is no significant difference in Ecospirituality Score of the students in terms of Course Level.
7	$H_0$8	There is no significant difference in Ecospirituality Score of the students in terms of Stream of Study.
8	$H_0$9	There is no significant relationship between Levels of Depression and Gender of the students.
9	$H_0$10	There is no significant relationship between Depression Score and Age of the students.
10	$H_0$11	There is no significant relationship between Levels of Depression and Habitat of the students.
11	$H_0$13	There is no significant relationship between Levels of Depression and Religion of the students.
12	$H_0$14	There is no significant relationship between Levels of Depression and Social Category of the students.
13	$H_0$15	There is no significant relationship between Levels of Depression and Course Level of the students.
14	$H_0$16	There is no significant relationship between Levels of Depression and Stream of Study of the students.
15	$H_0$17	There is no significant relationship between Levels of Anxiety and Gender of the students.
16	$H_0$18	There is no significant relationship between Anxiety Score and Age of the students.
17	$H_0$19	There is no significant relationship between Levels of Anxiety and Habitat of the students.
18	$H_0$21	There is no significant relationship between Levels of Anxiety and Religion of the students.
19	$H_0$22	There is no significant relationship between Levels of Anxiety and Social Category of the students.
20	$H_0$23	There is no significant relationship between Levels of Anxiety and Course Level of the students.
21	$H_0$24	There is no significant difference in Anxiety Score in terms of Stream of Study of the students.
22	$H_0$26	There is no significant relationship between Stress Score and Age of the students.
23	$H_0$27	There is no significant relationship between Levels of Stress and Habitat of the students.
24	$H_0$29	There is no significant relationship between Levels of Stress and Religion of the students.
25	$H_0$30	There is no significant relationship between Levels of Stress and Social Category of the students.
26	$H_0$31	There is no significant relationship between Levels of Stress and Course Level of the students.

Table 5.1 (Continued)

Sl.	Hypothesis No.	Statement
27	$H_0$32	There is no significant relationship between Levels of Stress and Stream of Study of the students.
28	$H_0$33	There is no significant relationship between Ecospirituality Score and Depression Score.
29	$H_0$34	There is no significant relationship between Ecospirituality Score and Anxiety Score.
30	$H_0$35	There is no significant relationship between Ecospirituality Score and Stress Score.

5.3 Discussion of the significant findings

The current study attempted to evaluate the significance of ecospirituality across various domains. It specifically focused on examining the relationship between ecospirituality and the three specific mental health concerns (depression, anxiety, stress) of students in higher education. The study aimed to identify differences in ecospirituality and depression, anxiety, stress among students based on their social-demographic, academic characteristics. The study conducted cross-sectional survey on 1289 students to find out fascinating facts and variances in accordance with the research questions. The researcher then attempted to analyse and discuss these findings based on his viewpoints. The findings of the current study were consistent with earlier empirical investigations in certain circumstances, while also differing in others.

A considerable gender disparity was found in the assessment of students' ecospirituality. Although there is a lack of research on the potential variations in ecospirituality between the two categories of gender, it seems that such distinctions may exist. A study conducted by Negi et al. (2021) has demonstrated that female students have a greater degree of spiritual inclination compared to their male counterparts. Though gender is an intricate and multifaceted construct, it can be stated that any differences in

ecospirituality between males and females are likely to be significant and female students are more inclined towards ecospirituality than male students.

The present study found a significant negative correlation between ecospirituality of higher education students and their age. It means that as age increases, ecospirituality tends to decrease. Human beings in their earlier days of life remain more open towards sensory inputs. They can feel the raw fresh essence of the nature more than older people as older human beings become quite indifferent towards sensory inputs. As age increases humans become more materialistic which can deprive them from the essence of spirituality in nature. However, the coefficient of correlation between students' ecospirituality and age was week. So, it is important to conduct further in-depth studies to find if this negative correlation is really significant or not.

Students from religion Hinduism were more inclined towards ecospirituality than students from Islam, and from Christianity. Hinduism believes in pantheism and many of the gods and goddesses of this religion evolve from nature or play the role of the protector of nature. This can be a possible reason that students belong to Hinduism were more prone towards ecospirituality than the rest two Abrahamic religions.

Undergraduate students were more inclined towards ecospirituality than postgraduate students. This is to some extent justifying the ecospirituality and age related finding of this study.

Humanities students were more inclined towards ecospirituality than science, commerce, and engineering students. Most of the studies in humanities have some ethical value-based approach, whereas rest of streams have some materialistic approach. This can be a potential cause behind humanities students more proneness towards ecospirituality.

The present study found a significant positive correlation between depression of higher education students and their age. It means that as age increases, depression also tends to increase. Stordal et al. conducted a study in 2003 and also found a positive correlation between age and depression. As age increases humans become more possessive toward materialistic world. Moreover, certain elderly individuals face an elevated susceptibility to depression and anxiety due to severe living conditions, compromised physical health, or limited availability of high-quality support and services (WHO, 2023). For these reasons, as age increases humans become more susceptible to depression. However, in the present study the coefficient of correlation between students' depression and age was week. So, it is important to conduct further in-depth studies to find if this positive correlation is really significant or not.

Students in Municipal Corporation were more inclined towards severe depression. This result is in contrast with the result of the study conducted by Stier et al. (2021) which indicated lower rates of depression in larger cities. Fast and hectic lifestyle in municipal corporation areas may be the potential factor behind their proneness towards severe depression.

Postgraduate students were more inclined towards severe depression whereas undergraduate students were more inclined towards moderate depression. The difference was statistically significant. The result of the study is in contrast with the study of Parial and Saha who conducted a study on 2019 and found that there was no significant difference between undergraduate and postgraduate students regarding levels of depression. The academic pressure and age factor can be a significant contributor for the severe depression of the postgraduate students.

Humanities students were more inclined towards moderate depression whereas science, commerce, and engineering students were more inclined towards severe level of

depression. Difference in academic pressure may be a contributing factor behind this stream wise difference in levels of depression.

The present study found a significant positive correlation between anxiety of higher education students and their age. It means that as age increases, anxiety also tends to increase. As age increases humans have to face more complex situations. In addition, older adults experience a heightened vulnerability to depression and anxiety as a result of harsh living situations, poor physical well-being, or limited access to support and services (WHO, 2023). For these reasons, as age increases humans become more prone to elevated level of anxiety. However, in the present study the coefficient of correlation between students' anxiety and age was week. So, it is crucial to undertake additional comprehensive investigations to determine the significance of this positive link.

Though the students in panchayat, in municipality, and in municipal corporation differed in their lower inclination towards lower levels of anxiety, they all had higher inclination towards extremely severe anxiety. This can be due to the modern-day complexities of life and the career rat race. Irrespective of the types of habitats all have to face these challenges. Same type of result found in case of association between anxiety and religion. Whatever the religion (Hinduism, Islam, Christianity) the students belong to, they all showed higher inclination towards extremely severe anxiety. Therefore, the researcher's speculation about the possible cause behind this type of higher inclination remains same as in the case of association between anxiety and habitat. Same type of results and speculations have been reflected also in the case of association between anxiety and gender, in the case of association between anxiety and social category, as well as in the case of association between anxiety and course level.

Science students as well as engineering students exhibited higher rates of anxiety compared to Humanities students. The variation in academic pressure could potentially

be a causative element in the disparity observed in anxiety rates across different academic streams.

The current investigation identified a notable and affirmative association between the stress among higher education students and their age. It signifies that as one's age increases, stress likewise tends to rise. As individuals grow older, they are confronted with increasingly intricate circumstances. Due to these factors, as individuals grow older, they become increasingly susceptible to experiencing higher levels of stress. However, the current study found a weak coefficient of correlation between students' stress and age. Therefore, it is imperative to conduct further extensive investigations in order to ascertain the significance of this positive correlation.

Students in the Municipal Corporation exhibited a greater propensity for experiencing severe stress. The fast-paced and chaotic lifestyle in municipal corporation regions may contribute to their susceptibility to severe stress.

Both science and humanities students exhibited the highest propensity for experiencing moderate level of stress. Conversely, commerce students and engineering students exhibited the highest propensity for experiencing severe stress. The fluctuation in academic pressure may be a contributing factor to the discrepancy in stress levels found among various academic disciplines.

Bożek et al. (2020) found a beneficial correlation among spirituality, health-related behaviours, and psychological well-being. The study conducted by Kao et al. (2020) established that spirituality can have a protective and therapeutic role in emotional distress. Hadzic (2011) carried out a review study and explored that most of the previous researches obtained positive relationship between spirituality and mental wellbeing. Koenig (2009) concluded that spirituality as well as religious ideas and practices can provide significant solace and optimism for depression, suicide, anxiety,

psychosis, and substance abuse. In the 2000s, a trend towards incorporating more intellectual and secular subjects into spiritual life was marked by the emergence of the psycho-philosophical-spiritual current (Itel, 2024). According to Itel (2024), this trend highlighted the ways in which philosophy—especially the age-old idea of wisdom—and positive psychology concepts intersect with spirituality. It signalled a shift towards a more practical understanding of spirituality that aimed to combine spiritual activities with psychological understandings. This movement placed a strong emphasis on educating people to live in harmony with one another as well as with themselves in order to bring about long-lasting happiness and well-being. One of the key developments in this spiritual progression is ecospirituality, which combines alternative spiritual practices with ecological awareness and philosophy to reflect a deep yearning to re-establish a connection with nature. Now, when we specifically concern about the influence of ecospirituality on mental health, there is a dearth of research in this particular aspect. However, the present study found that higher education students' ecospirituality had strong negative correlations with the specified three mental health concerns (depression, anxiety, stress). Therefore, as ecospirituality increases, these three mental health concerns have a strong tendency to decrease. The study conducted by Heard (2022) indicated that individuals who engaged in ecospirituality practices reported an augmented sense of connection with the natural environment, a heightened feeling of tranquillity, and a strengthened connection with their own personally sacred beliefs. Additionally, they documented an increase in resilience and the establishment of significant interpersonal relationships. The study proposed that it would be beneficial to improve the availability of natural environments for persons inside mental health systems. Various ecospiritual practices like mindful meditation in natural surroundings, shinrin-yoku (forest bathing), travel in nature, expressing gratitude towards the

manifestations of nature can be good initiatives to strengthen ecospirituality in oneself. Thus, ecospirituality can become a powerful construct for establishing a deep connection of human beings with the mother Earth and also for one's mental wellbeing.

5.4 Implications and recommendations

Ecospirituality can play a vital role in the field of education and mental health. The present study specifically established that ecospirituality is negatively correlated with higher education students' depression, anxiety and stress. So, if the concerning stakeholders of higher education can focus on strengthening students' ecospirituality construct that will eventually reduce the depression, anxiety and stress issues of the students. Focused awareness campaigns, discussions, new policies, and related practices can be implemented in this regard.

Recommendations are given below in precise manner-

- **Education and Awareness:** Disseminating information to the higher education students regarding the advantages of ecospirituality is essential for fostering acceptance and incorporation.
- **Dialogue and understanding:** Promoting open dialogues in academia and also in social context, regarding alternate approaches to cope with mental health concerns can be helpful.
- **Policy integration:** It involves the development of policies that embrace ecospirituality in societal discourse, which can result in a more comprehensive approach to mental health care.

- **Ecospiritual practices:** Practicing various ecospiritual activities like meditation in natural setting, forest bathing, expressing gratitude towards nature's manifestations etc.

5.5 Limitations and further research direction

The current study has the following flaws that have been noted by the researcher and can be addressed by future studies-

a) Among all twenty-eight states and eight union territories of India, only a single state was examined in this study.
b) It would have been preferable if the study could include students from all the universities in West Bengal as well as students from a greater number of colleges in West Bengal.
c) It was not possible to conduct interviews with the students regarding their perspectives on ecospirituality and mental health concerns.
d) The study could not investigate other elements that may have unexpected relationships with the ecospirituality of higher education students and their mental health concerns.
e) The inclusion of participatory activities in conjunction with the self-reported questionnaires could have enhanced the mapping of the study's constructs.

5.6 Conclusion

Ralph Waldo Emerson, the transcendentalist thinker had the belief that through complete immersion in nature, individuals could attain a more profound comprehension of the cosmos and their own position within it. Emerson underscored the

interdependence of all existence and contended that individuals are integral components of a larger transcendental entity. The lectures and writings of Thomas Berry, a thinker from the twentieth century, have brought attention to the spiritual connection between humans and the Earth. The ecospiritual essence can be seen in several writings by Rabindranath Tagore. Itel (2024) accurately stated that ecospirituality frequently emerges through physical sensations, emotions, and profound, wordless insights. It involves perceiving the Earth's rhythm, detecting the delicate shifts in the surroundings, and encountering a deep feeling of connection. This inherent link with nature frequently results in substantial personal growth, as the distinctions between oneself and the natural environment become indistinct, strengthening a profound ecological awareness. At that juncture, students have the opportunity to emancipate themselves from their own mental health concerns. Perhaps the knowledge passed down from previous generations about the need of fully engaging in natural environment could be crucial for future healing, well-being, productivity, and the sense of something really meaningful and sacred to us individually (Heard, 2022).

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APPENDICES

Appendix I

Information Schedule about the Student

Your Name:

Name of Your Educational Institution:

Your Gender (*Female/Male*):

Your Age (*in years*):

Type of Your Habitat (*Panchayat/Municipality/Municipal Corporation*):

Type of Your Family (*Joint Family/Nuclear Family*):

Your Religion (*Hinduism/Islam/Christianity*):

Your Social Category (*Unreserved/Scheduled Caste/ Scheduled Tribe/Other Backward Class*):

Your Course Level (*Undergraduate/Postgraduate*):

Your Stream of Study (*Science/Humanities/Commerce/Engineering*):

Appendix II

Permission to use Ecospirituality Scale

Gmail **Sheikh Imran Pervez <imran.pervez111@gmail.com>**

Seeking Permission to Use 'Ecospirituality: A Scale to Measure an Individual's Reverential Respect for the Environment'

2 messages

Imran Pervez <imran.pervez111@gmail.com> 15 June 2023 at 18:27
To: suganthi_au@yahoo.com

Respected Prof. L Suganthi,
This is for your kind information that I am a PhD Scholar in the Department of Education, Jadavpur University (India). For my PhD research work I want to use 'Ecospirituality: A Scale to Measure an Individual's Reverential Respect for the Environment' as a data collecting tool. I want to administer the scale on Higher education level students in West Bengal (my research population).
I would be highly obliged if you grant permission for that.

Regards,
SHEIKH IMRAN PERVEZ
PhD Scholar, Dept of Education
Jadavpur University

Suganthi Loganathan <suganthi_au@yahoo.com> 15 June 2023 at 19:17
To: Imran Pervez <imran.pervez111@gmail.com>

Ok
All the best
Suganthi

Sent from my iPhone

> On 15-Jun-2023, at 6:27 PM, Imran Pervez <imran.pervez111@gmail.com> wrote:
>
> [Quoted text hidden]

Appendix III

Items in the Ecospirituality Scale

DWELLING

DWE1 I belong to this universe.

DWE2 I take stock of the planet earth.

DWE3 I concentrate by thinking, reflecting on the things of this earth.

DWE4 I concentrate and become aware that I am of this universe.

DWE5 I seek meaning and purpose by my presence on this earth.

CARING

CAR1 I am aware of the environment.

CAR2 I nurture the environment.

CAR3 I take care of the environment.

CAR4 I am conscious of the changes that happen to the environment.

CAR5 I engage and participate with the environment to find meaning and richness in life.

REVERING

REV1 I have a sense of awe in participating in any action to safeguard the planet.

REV2 I have great respect for living on this earth.

REV3 I feel grateful while participating in any activity to promote greenness.

REV4 I feel honored to participate in any proactive action taken for the environment.

EXPERIENCING

EXP1 I perceive a sense of wonder, seeing the complexity of this universe.

EXP2 I feel this universe is precious.

EXP3 It gives me great pleasure to see the beauty of life in this universe.

RELATING

REL1 I have an organic relationship with this universe.

REL2 I feel a sense of mystery in being a part of this universe.

REL3 To be a human being living in this world, I hold myself as an enigma.

Suganthi, L. (2019). Ecospirituality: A scale to measure an individual's reverential respect for the environment. *Ecopsychology, 11*(2), 110-122. https://doi.org/10.1089/eco.2018.0065

Appendix IV

Items in the DASS-21

1. I found it hard to wind down. *[item in Stress Scale]*

2. I was aware of dryness of my mouth. *[item in Anxiety Scale]*

3. I couldn't seem to experience any positive feeling at all. *[item in Depression Scale]*

4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion). *[item in Anxiety Scale]*

5. I found it difficult to work up the initiative to do things. *[item in Depression Scale]*

6. I tended to over-react to situations. *[item in Stress Scale]*

7. I experienced trembling (eg, in the hands). *[item in Anxiety Scale]*

8. I felt that I was using a lot of nervous energy. *[item in Stress Scale]*

9. I was worried about situations in which I might panic and make a fool of myself. *[item in Anxiety Scale]*

10. I felt that I had nothing to look forward to. *[item in Depression Scale]*

11. I found myself getting agitated. *[item in Stress Scale]*

12. I found it difficult to relax. *[item in Stress Scale]*

13. I felt down-hearted and blue. *[item in Depression Scale]*

14. I was intolerant of anything that kept me from getting on with what I was doing. *[item in Stress Scale]*

15. I felt I was close to panic. *[item in Anxiety Scale]*

16. I was unable to become enthusiastic about anything. *[item in Depression Scale]*

17. I felt I wasn't worth much as a person. *[item in Depression Scale]*

18. I felt that I was rather touchy. *[item in Stress Scale]*

19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat). *[item in Anxiety Scale]*

20. I felt scared without any good reason. *[item in Anxiety Scale]*

21. I felt that life was meaningless. *[item in Depression Scale]*

Lovibond, S. H., & Lovibond, P. F. (1995). Depression Anxiety Stress Scales. UNSW Sydney.

http://www2.psy.unsw.edu.au/Groups/Dass/

Appendix V

Copy of Consent Letter for Data Collection in Paper-pencil Survey

যাদবপুর বিশ্ববিদ্যালয়
কলকাতা - ৭০০ ০৩২, ভারত

JADAVPUR UNIVERSITY
KOLKATA-700 032, INDIA

DEPARTMENT OF EDUCATION

NOTICE

It is hereby notified to all the students that to successfully complete his Ph.D. research, Sheikh Imran Pervez wants to conduct a survey and collect relevant data from the postgraduate students of our department. Students are asked, if possible, to cooperate with him at their convenience.

Date: September 4, 2023

(Prof. Muktipada Sinha)
Head
Department of Education
Jadavpur University

Prof. Mukti Pada Sinha
HEAD
Department of Education
Jadavpur University

* Established on and from 24th December, 1955 vide Notification No. 10986/IU-42/55 dated 6th December, 1955 under Jadavpur University Act, 1955 (West Bengal Act XXXIII of 1955) followed by Jadavpur University Act, 1981 (West Bengal Act XXIV of 1981)

দূরভাষ ঃ (৯১) ০৩৩ ২৪৫৭-২৮৮২
দূরবার্তা ঃ (৯১) ০৩৩ ২৪১৪-৬০০৮
Website : www.jadavpur.edu
E-mail : education.ju@gmail.com
Phone : (91) 033 2457-2882
Fax : (91) 033 2414-6008

Copy of Consent Letter (Continued)

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NAAC ACCREDITED-B
Aided by Department of Higher Education, Government of West Bengal
Affiliated to University of Calcutta and NCTE
Recognised under section 2(f) and 12 (B) of UGC

Phone : (033) 26610332
FAX : 033 26610240
Website : www.uluberiacollege.org
e-mail : uluberia_college@rediffmail.com
ULUBERIA, HOWRAH - 711315

From :
The Principal / President / Teacher-in-charge

Ref. No. : UC/045A/2023

Dated : 27.09.2023

To

Sheikh Imran Pervez

Dear Pervez

You are allowed to survey amongst our students who are willing to response to your questions. All departmental HOD s are also requested to cooperate with Imran as he is working as research fellow in Education Dept, Jadavpur University.

Thank you.

Dr Debasish Pal

Principal

Principal
ULUBERIA COLLEGE
Uluberia, Howrah

Copy of Consent Letter (Continued)

OFFICE OF THE PRINCIPAL
HOOGHLY MOHSIN COLLEGE
College Road, Chinsurah, Hooghly West Bengal
website: www.hooghlymohsincollege.ac.in e-mail: hooghlymohsintcollege@gmail.com

Memo No.112/M-4

Dated, Chinsurah, the 28th February, 2024

To
Sheikh Imran Pervez
PhD Research Scholar
Department of Education
Jadavpur University

Sub: Permission to Collect Data for PhD Research

Ref: Your Letter dated 28/02/2024

Dear Pervez,

You are permitted to carry out data collection amongst the students of this college who shall be willing to response your questions in connection with your research work.

Respected HoDs of this college are requested to make it convenient to support him as he is pursuing his PhD research at the Department of Education, Jadavpur University.

Principal
Hooghly Mohsin College

Principal
Hooghly Mohsin College
28/02/2024

HOOGHLY MOHSIN COLLEGE ★ 1836 ★ CHINSURAH, HOOGHLY

Appendix VI

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