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"Understanding Employee Readiness for AI Integrated Green Performance Management Systems in the Indian IT Sector"

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ABSTRACT

With the intersection of the realms of artificial intelligence (AI) and sustainability requirements, the modern era of human resource management practices has been altered, specifically in the Indian information technology (IT) industry. Although AI-based HR systems and green human resource management (GHRM) have been demonstrated to be valuable on a case-by-case basis, there is little research that has explored the application of these factors in performance management frameworks. In this paper, a conceptual model is formed to comprehend the employee preparedness to AI-integrated green performance management systems (AI-GPMS). Based on the Technology Organization Environment framework, Resource-Based View, Dynamic Capability Theory, Organizational Change Theory and the Ability Motivation Opportunity model, the paper establishes technological readiness, and green dynamic capability as organizational enablers, which support sustainable performance via the intermediating mechanism of employee readiness. Employee readiness is developed as a multidimensional construct that includes cognitive, emotional, and behavioral readiness to AI-enabled systems of sustainability. Through integrative literature review approach, the study suggests four theoretically based propositions relating organizational capabilities, employee readiness to sustainable performance outcomes. The framework adds to the literature by filling the gap between digital transformation and green HRM (as well as) conceptualizing AI-GPMS as a socio-technical system. The research provides the strategic value to Indian IT companies in their attempt to match AI-based performance analytics with long-term sustainability goals and opens the way to further empirical research.

Keywords: Artificial Intelligence in HRM; Green Human Resource Management; Employee Readiness; Sustainable Performance; Indian IT Sector

INTRODUCTION

The high rate of change and acceleration of digital transformation has greatly influenced human resource management (HRM) practices in industries, especially the Indian information technology (IT) industry.

Artificial intelligence (AI) is being introduced into HR systems, including recruitment analytics, employee engagement tracking and performance management systems, more and more. Sustainable HRM practices that are driven by AI have shown the level of potentiality to increase employee engagement, accuracy in decisions and performance of the organization when used in alignment with the strategic objective (Thangararaju and Palani, 2024). Moreover, AI-based HR systems have been demonstrated to affect the creative performance of employees, especially in technologically-driven sectors like the Indian IT industry (Thangararaju and Palani, 2025). These advancements herald the change of the traditional appraisal systems to the smart and data-driven performance management models.

According to the recent research, green dynamic capability and technological preparedness contribute to sustainability performance together (Ullah et al., 2025). The success of sustainability initiatives is also predetermined by the organizational readiness to green transformation and innovation (Ullah et al., 2024; Thomas and Suresh, 2024). Nevertheless, even though AI-based HR systems and green practices of HRM have advanced, little studies have explored how they can be integrated in performance management systems. More significantly, little has been done to focus on the role played by employee readiness in promoting the implementation of AI-based green performance management systems (AI-GPMS). According to organizational readiness literature, introduction of performance systems does not rely on structurally preparedness but on psychological acceptance of employees (Ochurub et al., 2012). On the same note, it has been found that employee willingness to adopt AI is informed by digital competence, perceived usefulness, and organizational support (Kumar et al., 2025).

The merging of AI analytics and sustainability-based performance metrics is hence a technological and cultural change. Although the structural background is offered by AI infrastructure and green strategic orientation, the willingness of the employees can be the key to whether these systems can result in quantifiable sustainable performance consequences. Based on this, the proposed study aims at conceptualizing employee readiness as one of the mediating mechanisms between technological readiness and green dynamic capability and sustainable performance in the Indian IT industry.

Through the combination of the knowledge on AI-based HRM, green HRM, organizational preparedness, and dynamic ability literature, the paper is going to suggest an all-encompassing theoretical framework of AI-based green performance management systems. By so doing, it will be part of the new discourse on sustainable digital transformation and will offer an empirical basis in the future based on theoretical premises.

REVIEW OF LITERATURE

Increased overlap of digital transformation and sustainability has transformed the modern human resource

management (HRM) practices especially in technology-intensive industries. AI has also become a game changer in the HRM, allowing the use of data to make decisions, predictive analytics, and automated performance assessment. Sustainable HRM practices driven by AI are also found to increase employee engagement and organizational performance as long as it is aligned with strategic sustainability goals (Thangararaj and Palani, 2024). What is more, AI-based HR solutions in the Indian IT industry are linked to increased creativity, particularly with worker-driven flexibility systems (Thangararajan and Palani, 2025). These works suggest that AI can neither be an operational tool nor a strategic one but an enabler of performance improvement.

In line with the AI developments, Green Human Resource Management (GHRM) has become a relevant concept as companies aim to incorporate environmental sustainability in HR practices. The GHRM practices, such as green recruitment, training, performance appraisal, and rewards, have shown to have considerable positive impacts on the environmental performance (Ojo et al., 2022). The empirical studies also indicate that the linkage between GHRM and environmental outcomes is mediated by green innovation, which supports the strategic position of HR in the process of sustainability transformation (Rana and Arya, 2024). India-specific sector analysis indicates that green HRM indicators have significant impacts on the sustainability performance in the industries (Raut et al., 2020; Tari and Nirmala 2025). Moreover, green talent management has been discovered as a vital process to realize the potential of the sustainability through the development of the environmentally responsible behavior of employees (Gardas et al., 2019).

The literature on organizational readiness gives more insight on the system implementation processes. The performance management systems require both structural preparedness and psychological acceptability by the employees to be successfully introduced (Ochurub et al., 2012). Green dynamic capability has also been found to complement technological readiness to promote sustainability performance (Ullah et al., 2025). On the same note, the level of organizational preparedness to green innovation and knowledge integration has a profound effect on the sustainability outcome (Ullah et al., 2024). Strategic alignment and organizational learning mechanisms shape readiness of green change in transformation context (Thomas and Suresh, 2024). Also, perceived usefulness, digital competence, and institutional support contribute to how prepared the employees are to adopt AI (Kumar et al., 2025).

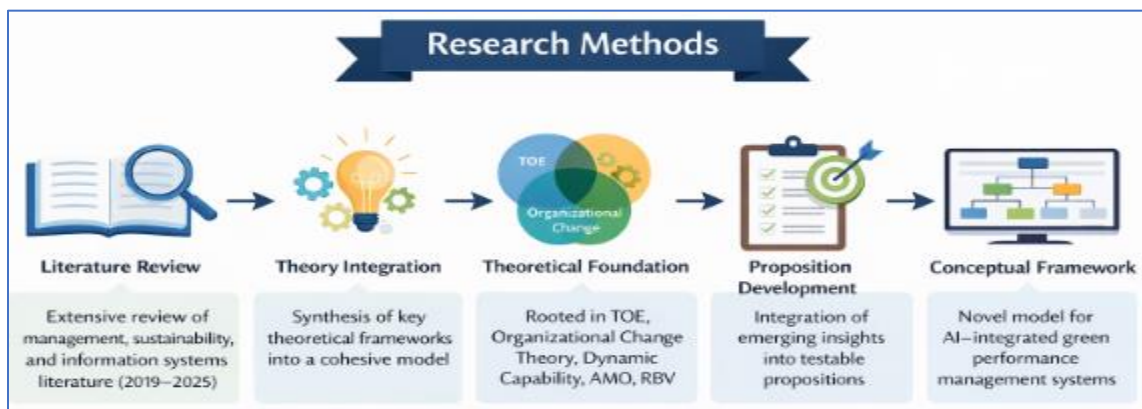
Although such developments have been made, current literature takes AI-based HRM and green HRM as similar fields. There has been a paucity of literature focused on the way AI-driven performance management systems may incorporate environmental metrics in a systematic way whilst making sure that employees accept and engage. Lack of a consistent framework that integrates technological preparedness, green dynamic capability, employee preparedness and sustainable performance is a research gap. To fill

this gap, the current research paper integrates these streams to conceptualize the AI-based systems of green performance management in the Indian IT industry.

RESEARCH METHODS

The systematic synthesis of the scholarly contributions based on artificial intelligence in HRM, green human resource management (GHRM), organizational readiness, and sustainability performance domains, is the systematic approach of the research. A total of 10 peer-reviewed journal articles published mostly in the period of 2012- 2025 were reviewed to locate the emergent constructs, theoretical insights, and the relationships that occur between them.

Figure 1 – Research methods used in the study



The research was carried out in four phases. To begin with, the necessary literature was gathered based on academic databases, and the keywords included AI-driven HRM, green HRM, technological readiness, sustainability performance, and organizational change. Second, important constructs were defined and sorted under the technology, organizational, and behavioral dimensions. Third, to develop a multi-level explanatory framework, the predominant theoretical lenses were combined, such as TOE framework, Resource-Based View, the Dynamic Capability Theory, the Organizational Change Theory, and the AMO framework. The last step was the synthesis of relationships between constructs into four propositions which were theoretically derived and a conceptual model.

RESULTS AND DISCUSSION

Indian IT sector has undergone rapid digital transformation that has accelerated the use of artificial intelligence (AI) within the human resource management (HRM) systems. AI-based HRM applications are also becoming helpful in recruitment, engagements, learning analytics, and performance assessment. According to the latest studies, the AI-based sustainable HRM practices lead to improved employee

engagement and performance when sustainability metrics are implemented in digital HR systems (Thangarajan and Palani, 2024). Likewise, the application of AI-based eco-friendly HRM has been identified to affect the creative performance results within the Indian tech industry, especially in the technological proficiency aligned with people-focused adaptability of the systems (Thangaraju and Palani, 2025).

Simultaneously, the literature on Green Human Resource Management (GHRM) adheres to the idea that environmental goals should be integrated into HR practices including performance appraisal, training, and rewards (Raut et al., 2020; Ojo et al., 2022). Research in the IT industry shows that the application of GHRM has a positive impact on environmental performance by promoting behavior that is pro-environmental among employees (Ojo et al., 2022). Further, the green innovation has been cited as a mediating element in associating green HRM with environmental results (Rana and Arya, 2024). Such results imply that the sustainability metrics should leave the declarations on policy-level and be integrated into the system of measurable performances.

The concept is expanded by green performance management systems (GPMS) where environmental indicators are added into official appraisal systems. Lean-green performance management models emphasise the need to balance operational effectiveness and environmental responsibility (Ahmad et al., 2021). Integrated management systems also remind that sustainability performance can be enhanced in a situation where the environmental objectives are strategically integrated into the organizational appraisal systems (Samy et al., 2015). It is also supported by recent data of Indian companies that prove that the synergistic combination of Industry 4.0 technologies, circular economy, and green HRM enhances sustainable performance results (De et al., 2024).

It is possible to develop an AI-Integrated Green Performance Management System (AI-GPMS) based on these streams; conceptualizing it as a digitally-enabled performance assessment framework that applies AI-based analytics to quantify, forecast and optimize sustainability-focused employee performance outcomes. Those systems integrate real-time data analytics, predictive modelling, sustainability dashboards and green key performance indicators (KPIs). Contrary to traditional PMS, AI-GPMS enables unceasing tracking and feedback loops that combine environmental performance indexes with personal and team productivity ones.

Although the attention to AI-enabled sustainable HR systems has increased, there is not much research on how employees perceive and prepare towards such integrated systems. The technological and the cultural change concern the introduction of AI-based evaluation systems, especially the ones that include environmental measures. Thus, employee preparedness is one of the most important antecedents of implementation success.

The AI-Integrated Green Systems Employee Preparedness

Employee readiness can be described as the degree of readiness among employees in terms of psychological and behavioral readiness to take and sustain organizational change programs. It is known that organizational readiness to the implementation of the system is one of the most important predictors of the success of performance management (Ochurub et al., 2012). Preparedness is all comprised of cognitive knowledge, emotional acceptance and behavioral intention to act with new systems.

Recent empirical data indicate that the willingness of employees to use AI is determined by attitude towards the usefulness of technologies, the support of the organization, and the level of digital competence (Kumar et al., 2025). In technology-based industries like IT, the preparedness is also determined by the technical infrastructure but also by the confidence of the employees to deal with intelligent systems. Employee acceptance is enhanced when AI systems are viewed as supportive as opposed to strict (Thangarajan and Palani, 2024).

Similar studies on the issue of green transformation reveal that the preparedness to sustainability projects relies on the organizational learning, environmental consciousness, and strategic orientation (Thomas and Suresh, 2024). More so, organizational preparedness towards green innovation plays a pivotal role in the form sustainability performance outcomes (Ullah et al., 2024). These results point to the fact that AI-based green PMS preparedness should be perceived as a multidimensional construct (integrating digital and environmental preparedness).

In line with this, employee preparedness to AI-GPMS can be theorized on three dimensions that are interconnected:

Cognitive Readiness

Cognitive readiness means how well employees understand and are aware of AI systems and sustainability goals. It consists of perceived utility of AI tools, understanding of green KPIs, and the understanding of sustainability performance measures. According to the literature of technological readiness, digital capability and knowledge integration support the capacity of employees to process new requirements of the systems (Ullah et al., 2025). Also, institutional learning processes help in knowledge integrations associated with green HRM practices (Subramanian and Suresh, 2022).

Emotional Readiness

Trust in AI systems, devotion to environmental values, and readiness to change are all ideas that can be captured by emotional readiness. It has been found that green HRM practices have a positive influence on pro-environmental behaviour and environmental commitment of employees (Ojo et al., 2022). Furthermore, the corporate social responsibility orientation and green change preparedness play an important role in positive attitude towards sustainability change (Zihan et al., 2024). Trust and acceptance

in the AI setting are also dependent on perceived fairness and algorithmic decision transparency (Kumar et al., 2025).

Behavioral Readiness

Behavioral readiness shows the desire of employees to interact with AI devices to align their behavior with the performance objectives oriented towards sustainability. The studies of green talent management show that employees become more engaged in green activities when the concept of sustainability is incorporated into HR systems (Gardas et al., 2019). Similarly, the GHRM practices empirically observed to obtain better environmental results via behavioral-based processes (Tari and Nirmala, 2025).

Collectively, the willingness of the employees to adopt AI-GPMS appears to be a key mediating variable that allows connecting technological capability, green strategic orientation, and sustainable performance performance.

Readiness Enablers in the Organization

The effective adoption of the AI-based green performance systems relies on the organizational-level enablers.

Technological Readiness

Technological preparedness is defined as the digital infrastructure of the organization, AI skills, and data maturity. Research suggests that the sustainability performance can be greatly improved in case of technological preparedness in coordination with green dynamic capability (Ullah et al., 2025). The staff members would be against or not use AI-driven performance tools without proper AI infrastructure and digital literacy.

Green Dynamic Capability

Green dynamic capability is the capability of the organization to incorporate, assemble and restructure the resources to meet environmental challenges. It has been empirically established that the readiness to green innovation and knowledge integration have a positive impact on the results of sustainability (Ullah et al., 2024). On the same note, green HRM practices also help towards the implementation of a circular economy and long-term environmental performance (Subramanian and Suresh, 2022; De et al., 2024).

CSR Orientation and Organization Learning

Knowledge sharing, training, and adaptability that are promoted through organizational learning are crucial to digital and green transitions. Green HRM with a focus on CSR increases the preparedness to change in an organization and reinforces transformation to sustainability (Zihan et al., 2024). Continuous learning systems make the employees have digital and environmental skills that are needed in the adoption of AI-GPMS.

This theoretical framework confirms the idea that AI-based green performance management system will

be the intersection of AI-based HR analytics and performance models that focus on sustainability. Nonetheless, it is not enough to have technological infrastructure and green strategic orientation. The readiness of the employees, including cognitive, emotional, and behavioral preparedness, is brought about as the key driver that can facilitate successful implementation and the realization of sustainable performance in the Indian IT industry.

Theoretical Framework

Artificial intelligence and Green performance management systems integration is a multi-level change that entails incorporation of technology, development of organizational capabilities and alignment of employee behavior. To provide a theoretic base of the proposed integration, the current study will utilize five complementary perspectives, i.e., Technology-Organization-Environment (TOE) framework, Resource-Based View (RBV), Dynamic Capability Theory, Organizational Change Theory, and the Ability-Motivation-Opportunity (AMO) framework. The combination of these lenses describes how technological infrastructure, sustainability orientation and employee preparation interrelate to determine the result of sustainability performance in the Indian IT sector.

Table 1 - Theoretical Foundations Supporting AI-Integrated Green Performance Management Systems

Theory	Relevance to the Present Study	Sources
Technology–Organization–Environment (TOE) Framework	Explains how technological readiness (AI infrastructure), organizational preparedness, and environmental pressures (ESG demands) influence adoption of AI-integrated green performance management systems in Indian IT firms.	Ullah et al. (2025); Thomas & Suresh (2024); Ochurub et al. (2012); Zihan et al. (2024)
Resource-Based View (RBV)	Positions AI capability and green HRM practices as strategic resources that enhance sustainable and environmental performance when effectively integrated.	Thangaraju & Palani (2024); Raut et al. (2020); Tari & Nirmala (2025)
Dynamic Capability Theory	Explains how firms reconfigure technological and green capabilities to adapt to sustainability-driven digital transformation.	Ullah et al. (2024); Ullah et al. (2025); Subramanian & Suresh (2022); De et al. (2024)
Organizational Change Theory	Identifies employee readiness (cognitive, emotional, behavioral preparedness) as a critical determinant of successful AI-GPMS implementation.	Ochurub et al. (2012); Kumar et al. (2025); Thomas & Suresh (2024)
Ability–Motivation–Opportunity (AMO) Framework	Explains how green HRM practices enhance employees’ ability, motivation, and opportunity to engage with sustainability-focused AI performance systems.	Ojo et al. (2022); Rana & Arya (2024); Gardas et al. (2019)

Technology- Organization -Environment (TOE) Framework

The TOE framework offers a theoretical viewpoint of the adoption of organizational technology based on three situational dimensions namely, technological readiness, organizational characteristics and

environmental pressures. Under the technological context of AI-integrated green performance management systems (AI-GPMS), AI infrastructure, analytics capability, and data integration systems can be found. Based on empirical evidence, technological preparedness plays a significant role in boosting sustainability performance when it is correlated with green dynamic capability (Ullah et al., 2025).

The organizational context entails the leadership support, culture, learning systems, and strategic alignment with sustainability goals. It has been found that structural preparedness and organizational support mechanisms are critical in determining readiness to green transformation (Thomas and Suresh, 2024). In addition, psychological and structural alignment is necessary in the organizational preparedness of the introduction of performance management systems to prevent resistance and implementation failure (Ochurub et al., 2012).

The environmental environment indicates the growing pressure of the ESG, regulatory expectation and stakeholder requirements on sustainable performance in the IT companies. Research shows that the correlation between green HRM practices and corporate social responsibility (CSR) orientation empowers the environmental commitment (Zihan et al., 2024). Therefore, TOE describes the structural and contextual conditions to adopt AI-GPMS but fails to describe comprehensively how these systems can lead to behavioral outcomes at the employee level. This weakness requires supplementary theoretical perspectives.

Resource-Based View (RBV)

The Resource-Based View assumes that sustainability of the competitive advantage is created out of the valuable, rare, inimitable, and non-substitutable (VRIN) resources. With AI-GPMS, two strategic resources take centre focus, namely (1) AI-led digital capability and (2) green human resource capability. Recent studies propose that AI-driven sustainable HRM can optimize performance in organizations by turning the HR procedures into assets (Thangararaju and Palani, 2024). Likewise, green HRM practices enhance better environmental performance and a long-term sustainability result (Raut et al., 2020; Tari and Nirmala, 2025). AI analytics and green HR systems, when combined into a hybrid strategic capability, can distinguish Indian IT firms in global markets with the focus on ESG.

Nevertheless, RBV has always placed a lot of importance on resources at the firm level and has underestimated the processes that are necessary to reorganize the resources. AI and sustainability have to be integrated in a constantly evolving manner; hence, the dynamism of the capability approach is necessary.

Dynamic Capability Theory

Dynamic Capability Theory is a further development of RBV which focuses on how well the firm can integrate, and build upon resources as well as reconfigure them in highly dynamic environments. Green

dynamic capability indicates that an organization has the potential to integrate innovation, environmental strategy, and knowledge in order to address the sustainability objectives (Ullah et al., 2024).

Empirical data indicate that when there is a green dynamic capability, the sustainability performance will be enhanced with the use of technological readiness (Ullah et al., 2025). As well, green HRM practices make it easy to implement a circular economy and transform sustainably, as they incorporate environmental learning into HR systems (Subramanian and Suresh, 2022; De et al., 2024). This data shows that the implementation of AI-GPMS is not only a technical upgrade but a redesign of the organizational processes to make them sustainable in creating value.

Dynamic capability therefore describes an interaction process between AI infrastructure and green HR practices over time. However, it is not detailed enough in how employees embrace or oppose AI-based sustainability systems at the micro-level. Organizational Change Theory helps to address this gap.

The Organizational Change Theory

The Organizational Change Theory focuses on preparedness as the psychological antecedent to a successful change. Ready-ness represents the beliefs of employees towards the need, the ability, and the advantage of change programs. There are indications that successful implementation of performance management systems requires structural preparedness as well as psychological preparedness of the employees (Ochurub et al., 2012).

Perceived usefulness, readiness of employees towards AI use is dependent on digital competence and organizational support in the digital transformation contexts (Kumar et al., 2025). On the same note, environmental awareness and strategic alignment influence green transformation preparedness (Thomas and Suresh, 2024). These results indicate that the implementation of AI-GPMS needs two-fold preparedness, including technological acceptance and environmental commitment.

Organizational Change Theory then ranks the employee preparedness as a mediating factor between organizational strength (technological and green) to sustainable performance effects. Even the most technologically advanced systems will not be adopted smoothly unless prepared.

Ability Motivation Opportunity (AMO) Framework

The AMO model describes the role of the HR practices in influencing the performance of employees in three ways, i.e. ability, motivation, and opportunity. Green HRM practices in the framework of AI-grown green PMS improve the environmental ability (skills and knowledge), motivation (values and incentives), and opportunity (participation in sustainability initiatives).

It has been shown that green HRM contributes to the pro-environmental behavior and environmental performance within the IT sector (Ojo et al., 2022). Green innovation also introduces an intermediary between GHRM and environmental outcomes (Rana and Arya, 2024). Besides, green talent management

also increases employee involvement in sustainability efforts (Gardas et al., 2019). These results suggest that the effectiveness of AI-GPMS is determined by the implementation of green HR practices that foster the competence and intrinsic commitment of employees to sustainability.

In this context, AI serves as a facilitating process that promotes decision accuracy and feedback, whereas GHRM influences the motivation of employees and their behavioral congruence. Therefore, AMO can be used to give the micro-foundational description on how the willingness of employees is converted into sustainable performance results.

Conceptual framework development

The current conceptual research contribution is that it brings together artificial intelligence-based human resource systems and green performance management by mediating through the readiness of employees. Although the presence of AI-driven HRM (Thangararajan et al., 2019; Thangararajan et al., 2021) and green HRM practices (Ojo et al., 2022; Rana and Arya, 2024) has been the focus of previous research, little literature has discussed their integration in the performance management systems. The discussion integrates theoretical knowledge and brings out the interaction of technological capability, green dynamic orientation and organizational learning with the sustainable performance outcomes in the Indian IT industry.

AI and Green HRM Convergence

Implementing AI analytics into the performance management systems would introduce the shift in the periodicity of evaluation to the continuous sustainability monitoring based on data. AI-fueled HR systems improve the predictive capabilities and real-time responses and allow companies to incorporate environmental key performance indicators (KPIs) into employee evaluation systems (Thangararajan and Palani, 2024). Yet, technological sophistication is not the only guarantee of the sustainable outcomes in performance.

The literature on green HRM proves that environmental performance is reinforced in case the HR practices foster the pro-environmental behavior and green innovation (Ojo et al., 2022; Rana and Arya, 2024). Moreover, the lean-green models of performance management focus on the alignment of the operational efficiency with the environmental responsibility (Ahmad et al., 2021). Thus, AI serves as an enabler, whereas green HRM is a source of normative and behavioral basis of sustainability alignment.

This intersection indicates that the AI-green performance management systems (AI-GPMS) should be defined as socio-technical systems, but not as technological interventions. The sustainable performance can be achieved through the mutual reinforcing of the digital tools and the environmental values

Employee Readiness as the Key Mechanism

One of the key contributions of the research is the fact that employee preparedness is introduced as the

mediating variable between sustainable results and organizational competencies. Research on organizational readiness notes that success in the implementation of a system relies on its psychological acceptance and structural preparedness (Ochurub et al., 2012). Perceived usefulness, digital literacy and trust play important roles in preparing to adopt AI in situations (Kumar et al., 2025).

Equally, environmental awareness, strategic alignment, and organizational learning are required to prepare an organization to undergo green transformation (Thomas and Suresh, 2024). The sustainability performance will be enhanced when green dynamic capability and technological readiness are in existence (Ullah et al., 2025). Nonetheless, the concept of these firm-level capabilities can only be converted into quantifiable results under conditions of cognitive perception, acceptance, and behavioral involvement of AI-GPMS by employees.

This conceptualization of readiness, which is multi-dimensional, i.e. cognitive, emotional, and behavioral, translates Organizational Change Theory to the field of green digital transformation. It also is consistent with the AMO framework, where the capacity to perform (digital and environmental competence) and the desire to perform (sustainability commitment) are combined with the opportunity to perform (AI-enabled participation mechanisms) to determine the performance of the employee (Ojo et al., 2022; Gardas et al., 2019).

Green Dynamic Capability and Organizational Learning Role

Dynamic Capability Theory offers a theory of integration of AI and sustainability at the macro level. Companies that have a good green dynamic capability can successfully reorganize both technological and human resources to address the environmental challenges (Ullah et al., 2024). The knowledge integration and innovation readiness has been expected to be supported by technological readiness, which is known to improve sustainability performance (Ullah et al., 2025).

This relationship is further enhanced through organizational learning which inculcates knowledge about the environment as part of HR processes. Research shows that the green HRM practices based on learning play a role in the adoption of the circular economy and sustainable performance over time (Subramanian and Suresh, 2022; De et al., 2024). Therefore, learning systems are the power of multiplication of abilities, not only digital but environmental awareness.

In the case of Indian IT companies, this means that AI-GPMS can not be applied as independent software solutions, rather as components of more extensive sustainability learning systems. The key to establishing preparedness and minimizing opposition is through the establishment of training, digital upskilling, and clear-cut AI governance mechanisms.

Conceptual Framework and Propositions Proposed.

This research paper has a parsimonious framework that is based on the above theoretical integration and

discussion, whereby technology readiness and green dynamic capability are going to impact employee readiness, which in turn will lead to sustainable performance outcomes within the Indian IT sector.

Proposition 1 - The readiness of workers to the AI-based green performance management systems is positively affected by technological readiness.

Technological preparedness indicates the presence of AI infrastructure, digital competence, and data integration facilities in the organization. Empirical evidence has shown that technological preparedness improves sustainability performance in the case of organizational capability alignment (Ullah et al., 2025). In addition, AI adoption is highly reliant on digital literacy, perceived usefulness, and organizational support to ensure that the staff is ready to adopt AI (Kumar et al., 2025). With regard to AI-GPMS, strong technological preparedness minimizes the level of uncertainty, perceived system effectiveness, and generates cognitive and behavioral readiness among workers. Thus, technological ability is an enabling pivotal prerequisite of preparedness.

Proposition 2 - The green dynamic capability has a positive effect on employee preparedness to AI-based green performance management systems.

Green dynamic capability can be defined as the capacity of an organization to incorporate the knowledge about the environment, innovativeness, and sustainability focused strategies in its operations. Research demonstrates that organizational preparedness to green innovation improves the sustainability performance outcomes (Ullah et al., 2024). In a similar manner, the environmental strategy alignment and learning mechanisms determine the readiness of green transformation (Thomas and Suresh, 2024). Employees tend to become emotionally committed and aligned in their behaviors towards green performance measures when sustainability values are incorporated into organizational systems. Green dynamic capability therefore enhances the ability of the employees to be prepared to AI-based sustainability systems.

Proposition 3 - The mediating role is played by employee readiness between the organizational capabilities (technological readiness and green dynamic capability) and sustainable performance.

The Theory of Organizational Change advocates that the preparation undergoes the system implementation as a psychological antecedent (Ochurub et al., 2012). As much as technological and green capabilities offer structural support, sustainable performance is only realized when employees have cognitively accepted, emotionally accepted and behaviorally involved with new systems. The studies also show that green HRM has a positive impact on the environment in terms of employee behavior and innovations (Ojo et al., 2022; Rana and Arya, 2024). Thus, employee preparedness is a mediating process that converts organizational capacity into quantifiable sustainability performance.

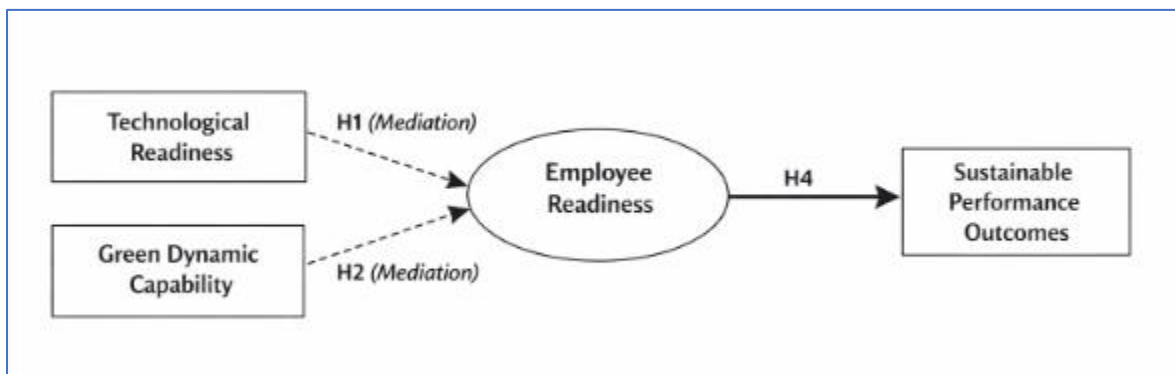
Proposition 4 - Employee preparedness has a positive effect on the sustainable performance results in AI-based green performance management systems.

The commitment of the employees will promote the involvement in the sustainability-related KPIs and AI-based assessment systems. Sustainable HRM which is powered by AI has been linked to better engagement and performance (Thangararaju and Palani, 2024). Also, green HRM practices enhance the environmental performance by promoting pro-environmental behavior (Tari & Nirmala, 2025). Under these conditions, in case employees are ready and dedicated, AI-GPMS may effectively integrate the performance of individuals with environmental goals, which results in better sustainable and environmental performance outcomes.

Table 2 - Summary of Proposed Propositions

Proposition	Statement	Theoretical Basis
P1	Technological readiness positively influences employee readiness for AI-integrated green performance management systems.	TOE Framework; Organizational Change Theory (Ullah et al., 2025; Kumar et al., 2025)
P2	Green dynamic capability positively influences employee readiness for AI-integrated green performance management systems.	Dynamic Capability Theory; Green Innovation Readiness (Ullah et al., 2024; Thomas & Suresh, 2024)
P3	Employee readiness mediates the relationship between organizational capabilities (technological readiness and green dynamic capability) and sustainable performance outcomes.	Organizational Change Theory; AMO Framework (Ochurub et al., 2012; Ojo et al., 2022; Rana & Arya, 2024)
P4	Employee readiness positively influences sustainable performance outcomes in AI-integrated green performance management systems.	RBV; Green HRM-Performance Linkage (Thangaraju & Palani, 2024; Tari & Nirmala, 2025)

Figure 2- Proposed conceptual framework



The suggested conceptual framework makes the employee readiness the key mediating variable between the organizational capabilities and the sustainable performance results within AI-based green performance management systems (AI-GPMS). Relying on the Technology Organization Environment framework, technological preparedness offers the structural space to implement AI, and green dynamic capability

demonstrates the strategic capacity of the organization to focus sustainability goals on digital transformation (Ullah et al., 2024; Ullah et al., 2025). Nevertheless, in line with the Organizational Change Theory, the transfer of such firm-level capabilities to quantifiable environmental and sustainable performance outcomes is based on cognitive knowledge of employees, emotional adoption, and behavioral involvement in AI-enabling green systems (Ochurub et al., 2012; Kumar et al., 2025). Moreover, the green HRM practices, backed by the AMO framework, increase the capacity, motivation, and opportunities of the employees with the sustainability-oriented KPIs (Ojo et al., 2022; Rana and Arya, 2024). In such a way, the conceptualization of AI-GPMS allows seeing it as a socio-technical system where digital infrastructure and green strategic orientation have a joint impact on sustainable performance mediated by the role of employee readiness, providing a theoretically well-integrated and context-relevant model in the Indian IT sector.

CONTRIBUTIONS OF THE STUDY

Theoretical Contributions

The research is relevant to the literature in four major aspects:

- One, it fills the gap between AI-based HRM and green HRM with the proposed combined performance management framework. Previous research has already looked into the effects of AI on engagement and creativity (Thangararaju and Palani, 2025), and the effects of GHRM on environmental results (Tari and Nirmala, 2025); however, a combination of these areas has not been analyzed yet.
- Second, it further develops the theory of Organizational Change by placing the issue of employee readiness in the framework of the sustainability-driven digital transformation. The conceptualization of readiness is not based on the technology acceptance but on the dual preparedness (environmental commitment plus AI trust).
- Third, it contributes to RBV and the Dynamic Capability Theory by theorizing AI capability and green HR capability as complementary strategic resources that when integrated together generate sustainable competitive advantage.
- Fourth, it complements the AMO concept by showing how AI-enabled performance systems raise opportunity structures that contribute to increasing the motivational and ability impacts of green HR practices.

Management implications of Indian IT industry

The AI-GPMS is an avenue of strategic positioning where Indian IT companies under the international ESG oversight can address the digital transformation-sustainability requirement. Implementation is however to be done

with focus on:

- Developing digital-green literacy with systematic training.
- Providing algorithmic transparency to develop trust.
- Integrating environmental KPI in appraisal systems.
- Bringing sustainability strategy and leadership vision to the fore.

Emotional preparedness may be compromised by AI-based assessment systems that are viewed as surveillance. On the contrary, the systems that are viewed as developmental and improvement of sustainability tools can reinforce commitment and creative green performance.

Implications on Sustainable Performance

In the sphere of IT, sustainable performance is not only a set of environmental measurements, but also the ability of innovations, confidence of the stakeholders and the ability to remain competitive in the long run. There is empirical evidence on the relationship between green HRM and environmental and innovation performance (Rana and Arya, 2024). These impacts could be more quantifiable, broad, and strategically coordinated when combined with AI analytics.

Thus AI-GPMS is a radical process where technology development is coupled with eco-friendly management, given that the so-called catalyst in this case will be the willingness of the employees.

CONCLUSION

The conceptualization of employee readiness as the key process facilitating the successful introduction of AI-integrated green performance management systems (AI-GPMS) to the Indian IT sector is presented in this study. Although artificial intelligence and green human resource management are separate strategic priorities that have developed on their own, their combination as a part of the performance management systems need a more profound perspective of organizational and behavioral dynamics. The given framework states that technological readiness and green dynamic capability should be used concurrently to facilitate a sustainable digital transformation. Nonetheless, organizational infrastructure and sustainability orientation are not enough as they cannot guarantee effective results.

Cognitive cognition of AI-enabled green systems, emotional acceptance and behavioral engagement in employees rely on the foundation of translating the green systems into measurable environmental and sustainable performance. Employee readiness hence acts as a mediating construction that links digital capability and environment strategy to performance realization. Along with the emphasis on the necessity to balance human, technological, and strategic aspects of sustainability transformation, this paper frames AI-GPMS as a socio-technical system instead of a technological upgrade.

The conceptual model adds to the body of research through incorporating the digital transformation, green

HRM and organizational readiness into a single explanatory model suitable in Indian IT setting. It provides a well-organized basis of empirical validation and offers strategic vision to the organizations aiming to fit artificial intelligence with the long-term goals of sustainability.

RECOMMENDATIONS

Indian IT companies need to implement a comprehensive strategy of implementation which enhances the AI infrastructure along with the sustainability-oriented organizational performance. The solutions that are mandatory to bring about trust and engagement among employees include digital-green literacy programs, clear sustainability-based performance measurements, and ethical AI governance mechanisms. Sustainability commitment by the leadership should be clarified, and the environmental KPIs should be integrated into the appraisal systems to enhance behavioral congruency. The processes of continuous organizational learning and participation can work to an even greater degree in creating preparedness and making AI-enabled green systems create meaningful and measurable sustainability outcomes.

SCOPE FOR FURTHER RESEARCH

The proposed framework requires to be empirically confirmed with the help of quantitative methods, such as structural equation modeling, in the future. How employee preparedness changes at various stages of AI-GPMS implementation could be studied with the help of longitudinal research. Research carried out in various industries or situations may give a comparison with other industries or regions to enable the identification of sector-based differences or differences that are cultural. Also, it is possible that the moderating variables, including organizational culture, leadership style, perceived algorithmic fairness, or ethical AI perceptions, are investigated in future research. The combination of quantitative and qualitative research designs would be beneficial to gain more in-depth insights on employee attitudes, resistance processes, and trust building in AI-based sustainability systems.

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A Review on “Mental Health and Well-being of School Students’ Survey 2022 Report”

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ABSTRACT

The present paper critically reviews the Mental Health and Well-Being of School Students’ Survey 2022, conducted by the Manodarpan Cell, Department of Educational Psychology and Foundations of Education, NCERT. The review examines the scope, methodology, findings, strengths, and limitations of the survey, which aimed to assess the mental health status of school students following the launch of the Manodarpan initiative. Drawing on data from 3.79 lakh students across India, the survey provides insights into students’ self-perception, emotional experiences, social contexts, and coping strategies, particularly during the COVID-19 pandemic. This review highlights key implications for teachers, school administrators, policymakers, and educationists, while also identifying gaps related to inclusivity, contextual diversity, and the predominance of pandemic-centric interpretations. The paper concludes with recommendations for future surveys and systemic interventions aligned with the vision of NEP 2020.

Keywords: mental health, school students, well-being, Manodarpan, NCERT, COVID-19

INTRODUCTION

Mental health and emotional well-being are critical determinants of students’ academic success, social adjustment, and overall development. Recognising the growing psychosocial challenges faced by students during and beyond the COVID-19 pandemic, the Ministry of Education launched the Manodarpan initiative as part of the Atmanirbhar Bharat Abhiyan. Under this initiative, the Manodarpan Cell at NCERT conducted a nationwide survey titled Mental Health and Well-Being of School Students in 2022.

The primary objective of the survey was to assess students’ perceptions of their mental health, emotional experiences, and coping strategies, as well as to examine the impact of pandemic-related disruptions on their well-being. This review paper critically evaluates the survey report, analysing its methodology, findings, strengths, limitations, and implications for educational practice and policy.

REVIEW OF LITERATURE

Mental health and well-being of school students have emerged as critical areas of concern globally, particularly in the context of rapid socio-cultural changes, academic pressures, and large-scale disruptions such as the COVID-19 pandemic. Adolescence is a developmental stage marked by emotional vulnerability, identity formation, and heightened sensitivity to social and academic environments. Research consistently indicates that poor mental health during this stage adversely affects academic performance, peer relationships, and long-term psychosocial outcomes.

Internationally, the World Health Organization (2020) has highlighted that mental health conditions account for a significant proportion of disease burden among adolescents, with anxiety and depression being the most prevalent. Schools are identified as key settings for early identification, prevention, and promotion of mental well-being. WHO advocates for whole-school approaches that integrate emotional well-being into curricula, teacher training, and school policies.

In the Indian context, student mental health has traditionally remained under-addressed due to stigma, lack of trained personnel, and limited institutional frameworks (Kumar & Singh, 2019). However, recent policy initiatives reflect a growing recognition of this issue. The Ministry of Education (2020), through the National Education Policy (NEP) 2020, emphasises holistic development, including social-emotional learning, mental health awareness, and counselling support within schools.

Empirical studies conducted prior to the pandemic reveal that Indian school students experience substantial academic stress, examination anxiety, and peer pressure (Deb et al., 2015; Verma & Gupta, 2017). These stressors are further compounded by socio-economic disparities, parental expectations, and competitive educational environments. Adolescents transitioning from middle to secondary schooling often report declines in self-esteem and life satisfaction, particularly related to body image and academic self-concept.

The COVID-19 pandemic significantly intensified mental health challenges among students worldwide. Studies conducted during this period report increased levels of anxiety, loneliness, emotional instability, and sleep disturbances due to prolonged school closures, social isolation, and reliance on online learning (Loades et al., 2020). In India, online education posed additional challenges due to digital divide, limited access to technology, and lack of preparedness among schools and teachers (Jena, 2020). These findings underscore that difficulties in online learning were largely systemic rather than student-specific.

Coping strategies adopted by adolescents during stressful situations have also been widely studied. Research indicates that social support from peers, family, and teachers serves as a protective factor against emotional distress (Compas et al., 2017). Mindfulness-based practices such as yoga and meditation have been found effective in reducing anxiety and improving emotional regulation among school students,

particularly in the Indian cultural context (Narasimhan et al., 2016).

Large-scale national surveys provide valuable insights into student well-being at the systemic level. The survey conducted by the Manodarpan Cell of National Council of Educational Research and Training (2022) represents a significant effort to capture students' perceptions of mental health across diverse school settings. Its focus on self-concept, emotional experiences, social context, and coping strategies aligns with global frameworks of socio-emotional learning. However, existing literature suggests the need for more inclusive representations of marginalised schooling contexts and for addressing mental health concerns beyond crisis-specific situations.

Overall, the literature highlights that promoting student mental health requires sustained, system-level interventions involving curriculum integration, teacher capacity building, emotionally supportive school climates, and accessible mental health services. The reviewed survey aligns with these perspectives while also revealing gaps that future research and policy initiatives must address.

OVERVIEW OF THE SURVEY

The survey was conducted by the Manodarpan Cell, Department of Educational Psychology and Foundations of Education, NCERT, under the aegis of the Ministry of Education, Government of India. It aimed to assess the mental health and well-being of students at the middle and secondary stages of schooling.

SAMPLE

The study included a large and diverse sample of 3,79,842 students, comprising:

- 1,58,581 middle school students (Grades VI–VIII)
- 2,21,261 secondary school students (Grades IX–XII)

A significant proportion of participants were drawn from Kendriya Vidyalayas (KVs) and Jawahar Navodaya Vidyalayas (JNVs). The sample reflected near-equal representation of male and female students and included 11 transgender students, marking an important step toward gender inclusivity.

METHODOLOGY

A national online survey was administered using Google Forms between January and March 2022. Data were collected from students across 28 States and 8 Union Territories, encompassing government and private schools. The questionnaire ensured anonymity, enabling students to express their perceptions freely regarding mental health and well-being.

Key Findings of the Survey

The findings were organised around students' perceptions of:

1. Their own selves
2. Self in social contexts
3. Life satisfaction (personal and school)
4. Emotional experiences
5. Fears and challenges
6. Coping strategies

Students' Understanding of Self

Students reported moderate to high levels of adaptability, trust in others, and a sense of responsibility toward achieving success in life. Many expressed satisfactions with both school and personal life. However, confidence related to body image and comfort in asking questions showed a decline, particularly as students transitioned from middle to secondary school.

Self in Social Context

In the social domain, students perceived themselves as trustworthy and capable of leadership, especially when encouraged by teachers. At the same time, peer pressure emerged as a significant concern, with students often engaging in behaviours to please friends. Academic challenges during online learning, such as difficulty understanding content and lack of social interaction, were also highlighted.

Emotional Experiences

Happiness emerged as the most frequently reported emotion, reflecting a generally positive outlook. Nevertheless, a considerable proportion of students reported anxiety, mood swings, and emotional fluctuations, particularly in relation to academic demands and pandemic-related uncertainties. Feelings of hopefulness during stressful situations were also noted, indicating emotional resilience among many students.

Coping Strategies

Students predominantly relied on sharing their feelings with friends as a coping mechanism. Approximately one-fourth reported engaging in yoga and meditation, while another quarter adopted cognitive strategies, such as changing thought patterns, to manage emotional distress.

Strengths and Positive Contributions

One of the major strengths of the survey lies in its large sample size and nationwide coverage, offering a broad overview of students' mental health during a critical historical period. The inclusion of transgender students reflects sensitivity toward gender diversity. The use of graphical representations enhances the

accessibility and usability of findings for school administrators and policymakers.

The survey also provides actionable insights for school-level planning, teacher training, and curriculum integration, thereby supporting evidence-based interventions.

Future Implications and Recommendations

Based on the findings, the survey outlines several future-oriented recommendations:

School Environment

Schools should foster caring, inclusive, and emotionally supportive environments and orient stakeholders toward students' developmental needs.

Curriculum Integration

Mental and emotional well-being should be integrated across curricula at all stages, with emphasis on emotional vocabulary and communication skills.

Teacher Training

Teacher education programs should prioritise socio-emotional learning and equip teachers to identify and address students' mental health concerns.

Assessment and Appraisal

Social and emotional competencies should be incorporated into student assessment systems, including the Holistic Progress Card (HPC). Teachers' contributions to students' well-being should also form part of their professional appraisal.

Emotional Literacy

Emotional literacy should be embedded into all aspects of school functioning to help students adapt to change and thrive in competitive environments.

LIMITATIONS OF THE SURVEY

Despite its strengths, the survey has notable limitations. Conducted during the COVID-19 pandemic, the findings are heavily contextualised within this period, limiting their generalisability to non-pandemic contexts. Challenges related to online learning may reflect systemic and infrastructural limitations rather than students' individual capacities.

Additionally, the survey focuses primarily on four types of schools—KVs, JNVs, State Government schools, and private schools—while excluding other educational settings such as madrasas, international schools, tribal residential schools, and alternative education models. This selective representation raises concerns about inclusivity and the comprehensive understanding of diverse student experiences.

Furthermore, the emphasis on pandemic-related issues overshadows longstanding mental health concerns such as bullying, socio-economic stressors, and access to counselling services.

CONCLUSION

The Mental Health and Well-Being of School Students' Survey 2022 offer valuable insights into students' emotional lives during a period of unprecedented disruption. The survey's strengths lie in its scale, inclusivity of gender representation, and practical relevance for educational planning. However, to build a truly responsive and equitable framework for student well-being, future surveys must broaden their scope, include diverse educational contexts, and address mental health concerns beyond crisis situations. Aligning such efforts with the vision of NEP 2020 requires sustained, inclusive, and systemic engagement to ensure that mental health support reaches every student, regardless of school type or socio-cultural background.

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Anxiety, Self-Esteem, and Academic Achievement among Senior Secondary School Students

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ABSTRACT

Anxiety and self-esteem are significant psychological variables that influence students' academic performance, particularly during the senior secondary stage, which is marked by academic pressure and career-related concerns. The present study investigates the levels of anxiety and self-esteem and their relationship with academic achievement among senior secondary school students of RPS +2 School, Siratha, Tarari, Bhojpur, Bihar. Using a descriptive survey method, data were collected from 120 students studying in Classes XI and XII through standardized psychological scales. Academic achievement was assessed using students' annual examination scores. Statistical analyses including descriptive statistics, *t*-tests, and Pearson's correlation were employed. The results revealed moderate to high levels of anxiety and moderate levels of self-esteem among students. Anxiety was found to be negatively related to both self-esteem and academic achievement, whereas self-esteem showed a positive relationship with academic achievement. The findings underscore the importance of psychological well-being in academic success and highlight the need for school-based counseling and emotional support programs.

Keywords: Anxiety, Self-Esteem, Academic Achievement, Adolescents, Senior Secondary Students.

INTRODUCTION

Adolescence is a crucial developmental stage characterized by significant cognitive, emotional, and social changes. During this period, students encounter increasing academic demands, expectations from parents and teachers, and pressures related to future career choices. These challenges often generate psychological stress, anxiety, and fluctuations in self-esteem, which may directly or indirectly influence academic achievement.

Anxiety is a common psychological response to perceived threats or challenges and is particularly

prevalent among students facing examinations and performance evaluations. While a moderate level of anxiety may motivate students to perform better, excessive anxiety can impair concentration, memory, and problem-solving abilities, thereby negatively affecting academic performance. Senior secondary school students are especially vulnerable to anxiety due to board examinations and competitive entrance tests.

Self-esteem refers to an individual's overall evaluation of self-worth and personal value. During adolescence, self-esteem plays a vital role in shaping motivation, confidence, and emotional stability. Students with high self-esteem tend to approach academic tasks with confidence, persistence, and optimism, whereas those with low self-esteem may experience self-doubt, fear of failure, and avoidance behaviors.

Academic achievement remains a primary indicator of students' success in the educational system. In India, academic performance is often equated with future career opportunities and social status, intensifying pressure on students. Psychological variables such as anxiety and self-esteem significantly influence students' ability to perform academically, yet these factors are often overlooked in school settings that prioritize examination results over mental well-being.

In rural and semi-urban regions like Bhojpur district of Bihar, students may face additional stressors such as limited educational resources, socio-economic constraints, and restricted access to psychological support services. Cultural expectations and lack of awareness about mental health further compound these challenges.

Schools play a crucial role in fostering not only academic skills but also emotional resilience and self-confidence among students. Teachers and school administrators are in a strategic position to identify psychological difficulties and provide early support. However, mental health services in many Indian schools remain inadequate.

The present study aims to examine anxiety, self-esteem, and academic achievement among senior secondary school students of RPS +2 School, Siratha, Tarari, Bhojpur, Bihar. By exploring the relationships among these variables, the study seeks to contribute empirical evidence that can inform school-based interventions and promote holistic student development.

REVIEW OF LITERATURE

Anxiety among students has been extensively studied in educational psychology. **Spielberger (1983)** conceptualized anxiety as a state of emotional arousal characterized by tension and apprehension. Research has consistently shown that high levels of anxiety negatively affect academic performance by impairing attention and working memory. Studies by **Sarason (1984)** highlighted the detrimental effects

of test anxiety on students' academic achievement. In the Indian context, **Deb et al. (2015)** reported that examination-related anxiety significantly predicted poor academic performance and emotional distress among adolescents. Self-esteem has been recognized as a critical determinant of academic success. **Rosenberg (1965)** emphasized that positive self-esteem contributes to motivation, persistence, and emotional stability. **Marsh and Craven (2006)** found that students with higher self-esteem demonstrated better academic engagement and achievement. The relationship between anxiety and self-esteem has also been widely explored. **Harter (2012)** noted that low self-esteem increases vulnerability to anxiety, particularly in achievement-oriented settings. Indian studies by **Singh and Sharma (2018)** confirmed a significant negative relationship between anxiety and self-esteem among secondary school students. Research examining the combined influence of anxiety and self-esteem on academic achievement indicates that these variables interact in complex ways. **Putwain (2007)** observed that anxiety undermines self-confidence, which in turn negatively affects academic performance. Similarly, **Verma and Gupta (2020)** reported that students with high self-esteem were better able to cope with academic stress and perform well academically. Despite extensive research, there remains a need for localized studies focusing on rural and semi-urban school settings in India. The present study addresses this gap by examining anxiety, self-esteem, and academic achievement among senior secondary students in Bhojpur district, Bihar.

OBJECTIVES OF THE STUDY

1. To assess the levels of anxiety and self-esteem among senior secondary school students.
2. To examine gender differences in anxiety and self-esteem.
3. To study the relationship between anxiety and academic achievement.
4. To examine the relationship between self-esteem and academic achievement.

HYPOTHESES

1. Senior secondary school students exhibit moderate levels of anxiety and self-esteem.
2. There is a significant gender difference in anxiety and self-esteem.
3. Anxiety is negatively related to academic achievement.
4. Self-esteem is positively related to academic achievement.

RESEARCH METHODOLOGY

SAMPLE

The sample consisted of 120 students studying in Classes XI and XII from RPS +2 School, Siratha, Tarari,

Bhojpur, Bihar, selected through purposive sampling.

RESEARCH DESIGN

The study employed a descriptive survey research design to examine anxiety, self-esteem, and academic achievement among senior secondary school students.

TOOLS USED

- **State–Trait Anxiety Inventory** - Anxiety was measured using the State–Trait Anxiety Inventory developed by Spielberger (1983), which is widely used to assess students' anxiety levels. The scale has reported reliability of 0.86.
- **Rosenberg Self-Esteem Scale (1965)**-Self-esteem was measured using the Rosenberg Self-Esteem Scale (1965), consisting of 10 items with established reliability of 0.85.
- **Academic achievement** -Academic achievement was assessed using students' annual examination scores, obtained from school records.

STATISTICAL TECHNIQUES

Mean, standard deviation, *t*-test, and Pearson's product–moment correlation were used for data analysis.

RESULTS AND DISCUSSION

Table 1: Mean Scores of Anxieties, Self-Esteem, and Academic Achievement

Variable	Mean	SD
Anxiety	54.6	8.3
Self-Esteem	26.8	4.9
Academic Achievement	63.4	9.6

Table 2: Gender Difference in Anxiety

Gender	Mean	SD	t
Male	52.1	8.0	
Female	56.9	8.4	2.37*

Table 3: Correlation Matrix

Variables	Anxiety	Self-Esteem	Academic Achievement
Anxiety	1	-0.49**	-0.46**
Self-Esteem		1	0.52**



This study examined the mean levels of anxiety, self-esteem, and academic achievement among senior secondary students, as well as gender differences in anxiety and the relationships among the variables. The findings provide meaningful insight into the psychological factors that influence students' academic outcomes.

The results showed that students demonstrated **moderate to high levels of anxiety** ($M = 54.6$, $SD = 8.3$). This suggests that senior secondary students are experiencing significant pressure, likely due to academic workload, examinations, fear of failure, and expectations from parents, teachers, and society. At this level, anxiety becomes a serious educational concern because it can interfere with concentration, memory, decision-making, and classroom participation. Therefore, anxiety among senior secondary students should not be ignored, since it may negatively affect both psychological wellbeing and learning performance.

The study also revealed a **significant gender difference in anxiety**, with **female students reporting higher anxiety levels** (Female: $M = 56.9$, $SD = 8.4$; Male: $M = 52.1$, $SD = 8.0$; $t = 2.37$, $p < .05$). This implies that female students may experience academic stress more intensely than male students. Possible reasons include greater emotional responsiveness, higher social expectations, and cultural pressures placed on female students to succeed academically and maintain good behavior. In addition, female students may internalize stress, leading to increased anxiety symptoms. This finding highlights the need for targeted interventions that support female students emotionally and psychologically, particularly during periods of academic evaluation.

Furthermore, the correlation analysis indicated that **anxiety had a significant negative relationship with self-esteem ($r = -0.49, p < .01$) and academic achievement ($r = -0.46, p < .01$)**. These results confirm that increased anxiety reduces students' confidence and belief in their own abilities, which in turn may lower their motivation and performance. When students become overly anxious, they may fear tests, avoid academic tasks, or experience mental blocks during examinations, all of which can lead to poorer academic outcomes. Thus, reducing anxiety is essential to improving both emotional adjustment and school achievement.

On the other hand, self-esteem demonstrated a **significant positive relationship with academic achievement ($r = 0.52, p < .01$)**. This finding shows that students who have a strong sense of self-worth and confidence tend to perform better academically. High self-esteem likely strengthens students' academic resilience, persistence, goal-setting behavior, and willingness to face academic challenges. Such students may also be more motivated and optimistic about success, which supports improved academic achievement.

In conclusion, the study confirms that **psychological variables significantly influence students' academic success**. Anxiety, when excessive, weakens performance, while self-esteem strengthens achievement. Therefore, schools should place stronger emphasis on psychological wellbeing through counseling services, stress-management programs, supportive teacher-student relationships, and self-esteem enhancement activities. Helping students build confidence and manage anxiety will not only improve academic achievement but also promote healthier emotional development and a more positive school experience.

The findings indicate that senior secondary students experience moderate to high levels of anxiety, reflecting academic and performance-related pressures. Female students reported significantly higher anxiety, possibly due to emotional sensitivity and societal expectations. The negative relationship between anxiety and academic achievement suggests that excessive anxiety hampers students' academic performance. Conversely, self-esteem emerged as a positive predictor of academic achievement, indicating that students with higher self-esteem perform better academically. These findings reinforce the importance of addressing psychological variables in educational settings.

CONCLUSION

The study concludes that anxiety and self-esteem significantly influence academic achievement among senior secondary school students. Schools must prioritize psychological well-being alongside academic

instruction by providing counseling services, stress-management programs, and supportive learning environments. Enhancing students' self-esteem and reducing anxiety can lead to improved academic outcomes and overall development.

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The role of parental bonding, social support, spirituality and forgiveness on happiness among undergraduate students of Kolkata

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ABSTRACT

Happiness is a positive emotional state which is subjectively defined by individuals. According to the Indian tradition happiness is considered as a spiritual pursuit, that is by turning inwards, establishing in one's self, and realizing one's true nature can give happiness. Parental bonding and care seems to be significantly tied up with happiness. "Spiritual personality takes a holistic view, which requires spiritual virtues, positive outlook on life, spiritual discipline, goodness, spiritual service, and moral rectitude. Social support is widely recognized as having beneficial influences on physical health, psychological health and overall well being. People who are inclined to forgive their transgressors tends to be more agreeable, more emotionally stable and some research suggests, more spiritually or religiously inclined than people who do not forgive their transgressors. The purpose of the present study was to study the role of parental bonding, social support, spirituality and forgiveness on happiness among undergraduate students of Kolkata. The sample for the present study consisted of 508 samples (253 females & 255 males). The aim of the present study was to explore the relationship between happiness with forgiveness, social support, parental bonding and spirituality. It can be concluded that no significant difference is found between male and female undergraduate college students of Kolkata in terms of happiness and coincidentally it has been found that the mean of happiness with regard to male and female are found to be closely similar to each other. Furthermore, it has been found that parental bonding, social support, forgiveness and spirituality have a definite role in predicting happiness among undergraduate students of Kolkata. The study can be helpful for conducting appropriate intervention.

Key words: Forgiveness, happiness, parental bonding, social support, spirituality, under- graduate.

INTRODUCTION

Happiness

The word happiness has its origin in Latin (Felicitas), which means fertility, prosperity, abundance or fullness. The philosophical and theoretical literature on happiness is abundant in India. Ancient texts and scriptures like the Vedas, the Upanisads and the Bhagwad Gita have explored the nature of happiness and the insights gained from these writings are still relevant to people of India, influencing their conceptions of happiness and guiding them on how to lead a happy life (Bhawuk, 2011). Since the days of Aristotle, happiness has been conceptualized as being composed of at least two aspects – hedonia (or, pleasure) and eudaimonia (a sense that life is well-lived) (Kringelbach & Berridge, 2010).

Parental bonding

Parental bonding can be described as an attachment between the child and the parent. Parental bonding is very important for the normal development of an individual. The parent child relationship has a great influence on an individual's development than any other relationship. It tends to be the foundation for all other relationships that an individual forms in life. The bond is the source of love, trust, intimacy and security. This relationship would nourish well – being or may cause a scar in life.

Spirituality

Spirituality means the process to know the self, the inner self and original self. In early part of twentieth century, IQ was the intelligence talked of which helps in solving intellectual problems, then came EQ, Daniel Goleman, the man behind it said, EQ is equally important to understand one's own and others feelings. Zohar and Marshal (2000), came with the concept of SQ, according to them SQ is the ultimate intelligence. In modern times the emphasis is on the subjective experience. It may denote almost any kind of meaningful activity or blissful experience. It still denotes a process of transformation but in a context separate from organized religious institutions termed 'spiritual but not religious.

Forgiveness

"*Micchami Dukkadam*" is popularly used on the last day of the annual Jain observations called the "*Paryushana*" by Syetambar Jains and Dasa-Laksana parvan by Digambara Jains. It is held on evenings during the Chaturmasa (monsoon months), usually before one's guru (spiritual) or temple before an image of Tirthankar. It is particularly popular as a community ceremony in Jainism. After *pratikramana*-confession of and repentance for one's mistakes and violations of Jain code of life for laypeople, a Jain seek forgiveness for all life forms of the world whom they may have harmed knowingly or unknowingly by uttering the phrase "*micchami dukkadam*". Researchers have studied forgiveness and have found that the tendency to forgive is a trait linked with certain structural and metabolic characteristics of the brain

(Li & Lu, 2017)

Social Support

Social support has been described as “those social interactions or relationships that render individual with actual assistance or that embed individuals inside a social system believed to give love, caring or sense of attachment to a valuable social group or dyad (Hobfoll, 1988). This divides the two major facets of social support that are: received social support and perceived social support. Received social support refers to naturally occurring helping behaviors that are being provided. Whereas perceived support refers to the belief that the helping behavior would be provided when needed. In a nutshell, received support is helping behavior that did happen, and perceived support is helping behavior that might happen (Barrera, 1986).

RATIONALE OF THE PRESENT STUDY

Cultural norms and values can significantly influence these psychological constructs, and therefore the results may not be generalizable to individuals from different cultural backgrounds (Cultural Factors). Low levels of happiness among undergraduate students were very common. College life is a special period when students start to be independent, but if they unable to become it disturbs their personal lives and studies, which makes them easily stressed and less spiritual. Less work has been done on this group (Early Adults) till now.

AIMS & OBJECTIVES:

1. To find out the significant relationship between male and female undergraduate students in terms of Happiness
2. To find out the significant relationship between happiness & noble attitude towards other & moral rectitude (domain of spirituality), social support, forgiveness and father care, father overprotection, mother care & mother overprotection (domains of parental bonding) among under-graduate male students of Kolkata.
3. To find out the significant relationship between happiness & noble attitude towards other & moral rectitude (domain of spirituality), social support, forgiveness and father care, father overprotection, mother care & mother overprotection (domains of parental bonding) among under-graduate female students of Kolkata
4. To find out the role of noble attitude towards other & moral rectitude (domain of spirituality), forgiveness, social support and father care, mother care, father overprotection & mother overprotection (domains of parental bonding) in predicting happiness among undergraduate male and female students of Kolkata.

RESEARCH HYPOTHESIS

Hypothesis 1

- There is no significant relationship between male and female undergraduate students of Kolkata in terms of happiness.

Hypothesis 2

1. 2a) There is no significant relationship between noble attitude towards other (domains of spirituality) and happiness among undergraduate male student of Kolkata
2. 2b) There is no significant relationship between moral rectitude (domains of spirituality) and happiness among undergraduate male student of Kolkata
3. 2c) There is no significant relationship between forgiveness and happiness among undergraduate male student of Kolkata
4. 2d) There is no significant relationship between social support and happiness among undergraduate male student of Kolkata
5. 2e) There is no significant relationship between father care (domain of parental bonding) and happiness among undergraduate male student of Kolkata
6. 2f) There is no significant relationship between father over protection (domain of parental bonding) and happiness among undergraduate male student of Kolkata
7. 2g) There is no significant relationship between mother care (domain of parental bonding) and happiness among male undergraduate student of Kolkata
8. 2h) There is no significant relationship between mother over protection (domain of parental bonding) and happiness among male undergraduate student of Kolkata

Hypothesis 3

1. 3a) There is no significant relationship between noble attitude towards other (domain of spirituality) and happiness among female under-graduate student of Kolkata
2. 3b) There is no significant relationship between moral rectitude (domain of spirituality) and happiness among female under-graduate student of Kolkata
3. 3c) There is no significant relationship between forgiveness and happiness among the female undergraduate student of Kolkata

4. 3d) There is no significant relationship between social support and happiness among the female undergraduate student of Kolkata
5. 3e) There is no significant relationship between mother care (domain of parental bonding) and happiness among the female undergraduate student of Kolkata
6. 3f) There is no significant relationship between mother over protection (domain of parental bonding) and happiness among the female undergraduate student of Kolkata
7. 3g) There is no significant relationship between father care (domain of parental bonding) and happiness among female undergraduate student of Kolkata
8. 3h) There is no significant relationship between father over protection (domain of parental bonding) and happiness among female undergraduate student of Kolkata

Hypothesis 4

- Domains of spirituality (noble attitude towards others & moral rectitude), forgiveness, social support and domains of parental bonding i.e., father care, father over protection, mother care, and mother over protection, would not significantly predict happiness among undergraduate students of Kolkata.

SAMPLE DESIGN

Inclusion criteria:

Only undergraduates from general stream (B.A; B.Sc.; & B.Com.) were selected for the study. The age group was within 19-22yrs. Only students staying with parents in family set up were selected. Only co-educational colleges were selected. Only middle income group students were selected. Only students willing to give data of own were selected

Exclusion criteria:

Undergraduates from other streams (Any professional courses) were excluded. Students whose parents were divorced were excluded. Students whose any of the parent were no more were excluded. Married students were excluded. Students with previous mental and physical illness were excluded and was determined by GHQ-12

RESEARCH DESIGN:

A quantitative, cross-sectional correlational design examining relationships and predictive roles of spirituality, forgiveness, social support, parental bonding on happiness.

TOOLS:

- **Preliminary Information Schedule-** A preliminary information schedule was first administered to the participants that included criteria like age, sex, marital status, education qualification, religion and socio-economic status. It was self-made.
- **The GHQ-12 (David Goldberg in 1970):** Cronbach's alpha, a common measure of internal consistency, is frequently reported as 0.80 or higher, indicating strong reliability. test-retest reliability of 0.78 indicating moderate to high consistency. The self-report GHQ-12 was developed to screen global mental state (Goldberg et al., 1997).
- **Spiritual Personality Inventory (SPI) (Akbar Hussain, Nadeem Luqman & Mussadiq Jahan, 2012):** It has two dimensions- “noble attitude towards others” & “moral rectitude”. The split-half correlation of 0.82 was found for the whole sample. The cronbach’s coefficient alpha was found to be 0.86. The factorial construct validity of SPI reveals high loadings of each item i.e., more than 0.40.
- **Heartland Forgiveness Scale (HFS) (Thompson et al., 2003):** it is a self-report questionnaire. Test-retest reliability was 0.83; cronbach alphas ranged between 0.84 & 0.87 for total score and 0.71 to 0.83 for the sub scales.
- **Multi-dimensional Scale for Perceived Social Support (MSPSS) (Zimet et al., in 1988):** It consists of three sub-scales; family, friends & significant others. The reliability was 0.85. Its Cronbach’s alpha is of 0.81 to 0.98 in non-clinical samples and 0.92 to 0.94 in clinical samples.
- **Parental Bonding Scale (PBS) (Gordon Parker, Hillary Tupling & L.B. Brown in 1979):** It has two dimensions named ‘care’ & ‘over-protection’ or ‘control’. There are 25 items questions, including 12 care items and 13 overprotection items. The test re-test’s reliability of 0.76 for the care scale & 0.63 for the overprotection scale.
- **Oxford Happiness Questionnaire (Argyle et al. 1989):** This is a 29-item questionnaire measuring the general psychological causes of happiness including its main components; achievement and satisfaction, enjoyment, vigour and health. It has demonstrated a test-retest reliability correlation coefficient of 0.79 and an alpha of 0.93.

➤

PROCEDURE:

After selection of different colleges from 3 zones (north, south & central) of Kolkata randomly, consent for sample/data collection was taken from the authority/principal of respective colleges was taken. Consent from all the participants were taken verbally before administering the tools. After selection of participants, both male and female from different colleges, they were administered with preliminary information schedule and rest of the tools were given after that. They were explained every items of the scale as some students have problems in understanding English. Data were collected individually. Statistical analysis was done by SPSS version 21.

STATISTICAL TREATMENT:

Descriptive Statistics (Mean, Standard Deviation (SD), Skewness & Kurtosis), Inferential Statistics (independent sample t-test), Correlational Statistics (Product moment correlation), Prediction Statistics (Linear regression)

ETHICAL CONSIDERATION:

Confidentiality was maintained and the informed consent was also taken verbally.

INTERPRETATION/ANALYSIS

Table 1.

Table 1, showing the mean, standard deviation, skewness & kurtosis for the selected variable among male undergraduate students of Kolkata

	Noble Attitude Towards Other	Moral Rectitude	Happiness	Forgiveness	Social Support	Father Care	Father Overprotection	Mother Care	Mother Overprotection
Mean	50.376	69.925	122.549	79.027	64.792	26.458	18.874	27.611	17.588
SD	5.292	5.798	122.176	9.984	9.229	4.006	3.975	4.401	5.414
N	255	255	255	255	255	255	255	255	255
Skewness	.974	.995	.473	.663	-.099	.359	1.991	-.1020	1.202
Kurtosis	1.811	1.126	.341	.634	-.227	-.545	5.506	-.928	1.389

The descriptive table 1, signifies that for male the distribution of skewness and kurtosis were normal as skewness lies between -2 to +2 and kurtosis between -7 to +7 according to Hair et al., (2010) & Bryne (2010).

Table-2

Table 2, showing the mean, standard deviation, skewness and kurtosis for the selected variables among female undergraduate students of Kolkata

	Noble Attitude Towards Other	Moral Rectitude	Happiness	Forgiveness	Social Support	Father Care	Father Overprotection	Mother Care	Mother Overprotection
Mean	70.205	49.82	122.549	78.419	66.102	27.44	19.181	28.08	16.877
SD	5.487	5.293	12.025	11.269	8.070	4.176	3.8674	4.326	4.932
N	253	253	253	253	253	253	253	253	253
Skewness	.351	-.128	.240	.489	-.141	.210	1.792	-.188	1.045
Kurtosis	.075	.020	.077	-.0396	-.899	-.758	3.813	-.987	.868

The descriptive table 1, signifies that for female the distribution of skewness and kurtosis were normal as skewness lies between -2 to +2 and kurtosis between -7 to +7 according to Hair et al., (2010) & Bryne (2010).

Table 3: t-test

Table 3, Showing that no significant difference in mean of happiness between male and female undergraduate students of Kolkata

	Group I (Male) 255		Group II (Female) 253		T value	df	Sig. (2tailed)
	Mean	SD	Mean	SD			
Happiness	122.176	12.685	122.549	12.025	.340	506	.734

Here in the table 3, there is no significant difference between male and female students in their happiness ($t=.340$; $p>0.05$). The mean and SD of male ($M=122.18$; $SD=12.69$) and female ($M=122.55$; $SD=12.03$) do not differ significantly.

Table 4:

Table 4, showing positive and significant correlation found between Noble Attitude Towards Other, Moral Rectitude, Forgiveness, Social Support & Mother care with happiness among undergraduate male students of Kolkata

		Noble Attitude Towards Other	Moral Rectitude	Forgiveness	Social Support	Father Care	Father Overprotection	Mother Care	Mother Overprotection
Happiness	Pearson Correlation	.211**	.211**	.285**	.199**	.121	-.064	.165*	-.042
	Sig. (2-tailed)	.001	.001	.000	.001	.053	.308	.008	.507
	N	255	255	255	255	255	255	255	255

** . Correlation is significant at the 0.01 level (2-tailed).

In table 4, significant differences were there with noble attitude towards other ($r=.211$; $p=.001$), moral rectitude ($r=.211$; $p>.01$), forgiveness ($r=.285$; $p>.01$); social support ($r=.199$; $p.001$) and mother care ($r=.165$; $p=>.01$) among male undergraduate students of Kolkata.

Table- 5

Table 5, showing positive and significant correlation found between Noble Attitude Towards Other, Forgiveness, Social Support, father care, mother care & mother overprotection with happiness among undergraduate female students of Kolkata

		Noble Attitude Towards Other	Moral Rectitude	Forgiveness	Social Support	Father Care	Father Overprotection	Mother Care	Mother Overprotection
Happiness	Pearson Correlation	.233**	.125	.219**	.282**	.250*	.001	.305*	-.136*
	Sig. (2-tailed)	.000	0.46	.000	.000	.000	.991	.000	.031
N		253	253	253	253	253	253	253	253
** Correlation is significant at the 0.01 level (2-tailed).									
* Correlation is significant at the 0.05 level (2-tailed)									

In table 5, significant differences were there with noble attitude towards other ($r=.233$; $p>.01$), forgiveness ($r=.219$; $p>.01$); social support ($r=.282$; $p>.01$), father care ($r=.250$; $p>.01$), mother overprotection ($r= -.136$; $p>.05$) and mother care ($r=.305$; $p>.01$) among female undergraduate students of Kolkata.

Regression Analysis Table 6:

Table 6, showing multiple regression analysis of (Dependent Variable) father care, mother care father overprotection & mother overprotection (domains of parental bonding), social support, noble attitude towards other & moral rectitude (domains of spirituality) and forgiveness as predictor variables for happiness (Independent Variable) as a criterion variable among undergraduate students of Kolkata (using enter method)

R	R Square	Adjusted Square	R square change	F	df	Significance
.416 ^a	.173	.159	.173	13.022	499	.000

Predictors: (constant), MFOP, FFC, HFS, NATO, MSPSS, FFOP, MFC, MR

Table 7: Regression Coefficients

Model	Standardized Coefficient	T Value	Significance
Constants		5.877	.000
Noble Attitude Towards Other	.058	1.245	.214
Moral Rectitude	.123	2.622	.009
Forgiveness	.208	4.968	.000
Social Support	.156	3.579	.000
Father Care	.094	2.136	.033
Father Over Protection	-.009	-.204	.838
Mother Care	.105	2.317	.021
Mother Over Protection	-.027	-.612	.541

Regression analysis (Enter method) was done to assess the effect of parental bonding, spirituality, forgiveness and social support on happiness among undergraduate students. The model summary is shown in the figure above.

In the present study the result indicates that 15.9% of overall happiness can be predicted by the domains of spirituality (Noble attitude towards other & Moral rectitude), forgiveness, social support and domains of parental bonding (father care, father overprotection, mother care and mother overprotection). In the present study,

forgiveness, social support, spirituality and parental bonding are positively related to student's happiness. When students experience higher levels of forgiveness, strong social support networks, a sense of spirituality, and positive parental bonding, they tend to report greater happiness levels.

DISCUSSION

Happiness is considered as one of the most vital human experiences and the ultimate motivation behind all human endeavors. Despite disagreement over the definition, conception and the relative influence of various psychological, social, demographical, economic and political factors on happiness, there is considerable consensus among the researchers about certain things: a) happiness is subjective experience; b) happiness cannot be defined in a particular way; c) the meaning of happiness is influenced by culture and context; d) happiness can be measured and e) happiness has its positive consequences and is therefore a worthy pursuit (Brown, 2004; Clark, Frijters, & Shields, 2008; Diener, 2000, 2005; Diener & Chan, 2011; Diener, Scollon, & Lucas, 2003; Kesebir & Diener, 2008; Kitayama & Markus, 2000; Lu & Gilmour, 2004; Mishra, 2020; Wilkinson, 2005; Veenhoven, 2014). The present research aimed to explore how happiness is understood in India, how people derive happiness and the extent to which happiness is

related to spirituality, social support, forgiveness and parental bonding. In simple words, this research was carried out to appraise the meaning and sources of happiness and determine its relationship to spirituality, social support, forgiveness and parental bonding.

The first objective of the study was to find out the significant difference between male and female undergraduates in terms of happiness. There were no significant differences between male and female undergraduate students in terms of happiness. The mean and SD of male and female were similar and do not differ significantly. The findings of the present study suggest no significant difference between male and female students in terms of happiness, spirituality and forgiveness, which is in accordance to the study by Aragon- Cruz et al., (2023), states that there were no differences in happiness between state University and Private University students when compared by gender, professional area, and age.

The second objective was to find out the significant relationship between spirituality (both domains, noble attitude towards other & moral rectitude) and happiness among male undergraduate students. There were a positive and significant relationship between spirituality and happiness among male undergraduates.

The third objective was to find out the significant relationship between forgiveness and happiness among male undergraduate students. Here positive and significant relationship was found.

The fourth objective was to find out the significant relationship between social support and happiness among male

The fifth objective was to find out the significant relationship between parental bonding (both father and mother) and happiness among male undergraduate students. In parental bonding mother care was positive and significantly related to happiness. Other parameters like father care, father overprotection and mother overprotection were not significant.

The sixth objective was to find out the significant relationship between spirituality and happiness among female undergraduate students. Here spirituality (only noble attitude towards other) was significantly and positively related to happiness.

The seventh objective was to find out the significant relationship between forgiveness and happiness among female undergraduate students. Here forgiveness is positively and significantly related to happiness. There is no significant difference between male and female students in the propensity to forgive others (Patil, Shaikh & Sanmukh, 2018).

The eighth objective was to find out the significant relationship between social support and happiness among female undergraduate students. There was positive and significant relationship found.

The ninth objective was to find out the significant relationship between parental bonding (both father and mother) and happiness among female undergraduate students. Here positive and significant relationship was with father care, mother care, and negative but significant relationship with mother overprotection.

There was no significant relationship with father overprotection

The tenth objective was to find out the predictors of happiness of undergraduate students. Here around 16% of overall happiness can be predicted by spirituality (domains), forgiveness, social support and parental bonding (domains).

In the present study, forgiveness social support, spirituality and parental bonding are positively related to happiness. When students experience higher levels of forgiveness, strong social support networks, sense of spirituality and positive parental bonding, they tend to report greater happiness levels. So forgiveness and spirituality are positively related to student's happiness (David, Rajsekhar, Singh, Ribeiro & Gomes, 2022). The result found that there is a significant positive correlation between forgiveness and happiness & spirituality and forgiveness (Kudrat, 2022). The findings are similar to the finding that showed happiness to be positively connected with forgiveness (Toor & Rani, 2024).

Studies suggest a positive and significant correlation between forgiveness and happiness among male undergraduate, show greater capacity or willingness to forgive their levels of happiness tend to increase. The reason might be that there is no discrimination between male and females as both were equally treated by their parents in Kolkata. Gender differences on forgiveness and happiness are not significant. This indicates that females are higher on expressions of thankfulness as compared to males.

the study finds that happiness and spirituality are significantly correlated. Positive Orientation and Healthy Interpersonal Relationships appear to promote spirituality. This suggests that people with positive attitude towards life and warm, positive interpersonal relationships are high on spirituality. No significant relationship found between spirituality and happiness with respect to gender (Chougale, 2018).

There is plethora of research on spiritual intelligence indicating its meaning and concept. But a very few studies are available on parental bonding (father care, father overprotection, mother care and mother overprotection) individually, Social support, forgiveness, spirituality (noble attitude towards other & moral rectitude) individually. However, few studies have identified this relationship in context of western world but very limited studies are found in Indian context.

IMPLICATIONS:

The purpose of the present study is to help in conducting appropriate intervention. There are cultural variations when it comes to gender differences in forgiveness, and spirituality. This study helps to build a culture specific model of forgiveness and spirituality

LIMITATIONS

The followings are the limitations of the present study:

Sample size must be more to provide accurate results and hence generalization to the population should be made with extreme care.

- Professional courses students to be included
- Married students must also be considered,
- Other religions students to considered
- High and low socio-economic status students to be given importance.
- Post graduate students to be added
- Students having single and divorced parents to be also considered.

CONCLUSIONS:

The aim of the present study is to explore the relationship between happiness (Independent Variable) and Dependent variables like forgiveness, spirituality, social support and parental bonding. It can be concluded that no significant difference is found between male and female undergraduate college students of Kolkata in terms of happiness and coincidentally it has been found that the mean of happiness about male and female are found to be closely similar to each other. Furthermore, it has been found that forgiveness and spirituality have a definite role in predicting happiness among undergraduate students of Kolkata.

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A Comparative Study of Parenting Styles and Their Differential Impact on Male and Female Adolescents

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ABSTRACT

The present Comparative Study examined the different parenting styles Democratic, Autocratic, Permissive, and Uninvolved on male and female adolescents. The sample comprised 120 adolescents (60 males and 60 females) aged between 11 and 16 years, selected from the Patna district of Bihar using quota sampling. Parenting styles were assessed using the Parenting Style Scale developed by Gupta and Mehtani (2017). Descriptive statistics and independent sample *t*- tests were employed to analyze gender differences in perceived parenting styles. The results revealed that female adolescents reported significantly higher levels of Democratic and Permissive parenting styles, whereas male adolescents reported significantly higher levels of Autocratic parenting style. No significant gender difference was found in Uninvolved parenting style. These findings suggest that adolescents' perceptions of parenting styles vary according to gender, reflecting differential socialization practices and parental expectations. The study highlights the importance of adopting balanced and responsive parenting practices to promote healthy adolescent development across genders.

Keywords: Parenting Styles, Democratic Parenting, Autocratic Parenting, Permissive Parenting, Uninvolved Parenting, Adolescents, Gender Differences

INTRODUCTION

Adolescence is a critical developmental period marked by rapid physical, emotional, cognitive, and social changes. During this stage, individuals begin to form a stable sense of identity, develop autonomy, and establish complex social relationships. Parents play a vital role in guiding adolescents through these developmental challenges, and the style of parenting adopted by parents significantly

influences adolescents' psychological adjustment, behavior, and overall well-being (Steinberg, 2001).

Parenting style refers to the overall pattern of parental attitudes, behaviors, and practices used in child rearing. One of the most influential frameworks for understanding parenting styles was proposed by Baumrind (1967, 1971), who initially identified three major parenting styles: authoritative (democratic), authoritarian (autocratic), and permissive. This model was later expanded by Maccoby and Martin (1983), who introduced a fourth style uninvolved (neglectful) parenting based on the dimensions of parental responsiveness and demandingness.

Democratic (authoritative) parenting is characterized by high warmth, open communication, mutual respect, and reasonable control. Parents encourage independence while maintaining clear expectations and boundaries. Extensive research has shown that democratic parenting is associated with positive adolescent outcomes, including higher self-esteem, better academic achievement, emotional regulation, and social competence (Baumrind, 1967; Steinberg, 2001; Piquart, 2017).

In contrast, autocratic (authoritarian) parenting emphasizes strict discipline, obedience, and high parental control with limited emotional responsiveness. Adolescents raised under autocratic parenting may comply with parental rules but often exhibit lower self-esteem, higher anxiety, and increased behavioral problems, particularly during adolescence when autonomy needs intensify (Baumrind, 1991; Patock-Peckham & Morgan-Lopez, 2006).

Permissive parenting is characterized by high warmth but low control and minimal enforcement of rules. While adolescents from permissive families may experience emotional closeness and freedom, research indicates that excessive permissiveness can lead to poor self-regulation, lower academic performance, and higher engagement in risk-taking behaviors (Lamborn et al., 1991; Piquart, 2017). Uninvolved parenting, marked by low warmth and low control, reflects parental disengagement and minimal involvement in the adolescent's life. This parenting style has been consistently associated with the most adverse developmental outcomes, including emotional distress, poor academic achievement, and social difficulties (Maccoby & Martin, 1983; Steinberg, 2001).

Importantly, the impact of parenting styles may not be uniform for male and female adolescents. Gender socialization practices often shape parental expectations and interactions differently for boys and girls. Research suggests that male adolescents tend to experience greater parental control and discipline, while female adolescents often perceive higher levels of parental warmth and emotional involvement (Shek, 2007; Verma & Sharma, 2003). These gender-based differences influence how adolescents interpret and respond to various parenting styles.

In the Indian cultural context, parenting is strongly influenced by values such as interdependence, obedience, and family responsibility. Indian parents often combine warmth with control, and adolescents' perceptions of parenting styles are shaped by cultural norms and gender roles (Saraswathi, 1999; Sriram, 2019). Studies conducted in India have shown that democratic parenting is associated with better adjustment among adolescents, while autocratic and uninvolved parenting styles are linked to emotional and behavioral difficulties (Singh & Udaniya, 2009; Kaur & Rana, 2014).

Given the significant role of parenting in adolescent development and the potential differences in experiences between male and female adolescents, it is essential to examine how different parenting styles—democratic, autocratic, permissive, and uninvolved—impact adolescents across gender. Understanding these relationships can provide valuable insights for parents, educators, counselors, and policymakers in promoting healthy parenting practices and positive adolescent development.

REVIEW OF RELATED LITERATURE

Baumrind (1967) this study conducted a pioneering study on parental authority patterns and identified three primary parenting styles: authoritative, authoritarian, and permissive. The study demonstrated that children raised under authoritative parenting characterized by high warmth and reasonable control exhibited higher social competence, self-reliance, and academic achievement compared to those raised under authoritarian or permissive styles.

Baumrind (1971) this study expanded her conceptualization of parenting practices and emphasized the role of parental responsiveness and demandingness. Although the uninvolved (neglectful) style was later formalized by Maccoby and Martin, Baumrind's findings indicated that low parental involvement and weak control were associated with poor emotional regulation, low achievement, and behavioral problems in children and adolescents.

Collins and Russell (1991) this study found that male adolescents were more sensitive to parental control and authority, whereas female adolescents were more responsive to emotional support and communication. These perceptual differences contributed to gender variations in reported parenting styles.

Dwairy and Achoui (2006) this study included South Asian samples and showed that authoritarian parenting was more prevalent in collectivistic cultures. In Indian contexts, strict parenting was not always associated with negative outcomes if accompanied by parental involvement.

Kaur and Rana (2014) This study found that authoritative parenting was positively related to

academic achievement and emotional maturity among Indian adolescents. Permissive parenting showed mixed outcomes, while uninvolved parenting was associated with poor academic performance and behavioral problems.

Kim and Hong (2007) this study indicated that boys were often subjected to stricter behavioral expectations and discipline, while girls experienced greater emotional freedom and parental support. These differences influenced adolescents' perceptions of parenting styles.

Lamborn, Steinberg, and Dornbusch (1991) this study examined the relationship between parenting styles and adolescent adjustment. Permissive parenting was associated with higher self-esteem and social confidence but also with lower academic achievement and increased engagement in problem behaviors. Authoritative parenting emerged as the most consistently beneficial style.

Maccoby and Martin (1983) this study concluded that uninvolved parenting, marked by low warmth and low control, was associated with the least adaptive developmental outcomes, including poor academic performance and emotional difficulties.

Niu et al. (2023) this study indicated that the strength of associations between parenting styles and outcomes varied by gender, outcome domain, and measurement method, underscoring the complexity of gender differences in parenting.

Patock-Peckham and Morgan-Lopez (2006) This study investigated gender as a moderating variable in the relationship between perceived parenting and adolescent risk behaviors. The findings indicated that male adolescents were more negatively affected by high parental control and low warmth, particularly in relation to impulsivity and substance-related behaviors. The study highlighted the importance of considering gender differences when examining parenting effects.

Pinquart (2017) this study results indicated that low parental control, characteristic of permissive parenting, was moderately associated with externalizing behaviors such as aggression and rule-breaking. In contrast, authoritative parenting showed strong protective effects against behavioral problems.

Rani and Rao (2015) This study highlighted that male adolescents experienced stricter disciplinary practices compared to females, whereas female adolescents perceived greater emotional closeness with parents. These findings were attributed to gender-based socialization practices prevalent in Indian families.

Rose and Rudolph (2006) this study reviewed gender differences in emotional and social

development and concluded that female adolescents are more attuned to interpersonal relationships and emotional communication. This sensitivity may influence how girls perceive parental warmth and responsiveness, often leading to higher reported levels of democratic or permissive parenting.

Russell and Saebel (1997) this study showed that daughters were more likely than sons to perceive parental warmth and permissiveness. The authors attributed these differences to gender-based socialization practices that encourage emotional expressiveness and relational closeness in females.

Saraswathi and Ganapathy (2002) This study examined parenting styles and adolescent adjustment in Indian families and found that authoritative (democratic) parenting was associated with better emotional adjustment and social competence. Authoritarian parenting was linked to higher anxiety and lower self-esteem among adolescents.

Saraswathi, T. S. (1999) this study found that parenting in the Indian context is deeply influenced by cultural values such as obedience, interdependence, and family responsibility. The study highlighted that Indian parents often combine control with warmth, and adolescents' adjustment depends on how parental authority is balanced with emotional support.

Shek (2007) this study examined adolescents' perceptions of parental control and warmth and reported significant gender differences. Female adolescents perceived greater parental warmth, support, and involvement compared to males.

Singh and Udainiya (2009) this study examined self-esteem and parenting styles among Indian adolescents and found that adolescents raised under democratic parenting reported higher self-esteem and better adjustment than those raised under authoritarian or neglectful parenting styles.

Sriram (2019) this study explored perceived parenting styles and mental health among Indian adolescents and reported that authoritative parenting was significantly associated with psychological well-being. Gender differences were observed, with girls perceiving higher parental warmth and boys reporting greater parental control.

Steinberg (2001) this study reviewed empirical studies on parenting and adolescence and confirmed that authoritative parenting consistently predicts positive developmental outcomes such as higher self-esteem, social competence, emotional adjustment, and academic success.

Verma and Sharma (2003) this study reported significant gender differences in perceived parenting styles among Indian adolescents. Female adolescents perceived higher parental warmth and involvement, while male adolescents experienced greater parental control and discipline, reflecting

traditional gender role expectations in Indian society.

STATEMENT OF THE PROBLEM

Adolescence is a critical stage of development marked by emotional, social, and behavioral changes. During this period, parents continue to influence their children through the way they communicate, discipline, and provide support. Different parenting styles such as being supportive, strict, permissive, or uninvolved can have a strong effect on adolescents' behavior, self-esteem, and emotional well-being. Male and female adolescents, however, may respond differently to these parenting styles. Boys and girls often differ in emotional expression, social expectations, and coping strategies, which may shape how they perceive and react to parental control and care. While certain parenting practices may positively influence one gender, they may have less effect or even negative consequences for the other. Many existing studies do not clearly address these gender differences, leading to a gap in understanding how parenting styles uniquely affect male and female adolescents. This study therefore aims to examine the impact of parenting styles on both groups to support healthier adolescent development.

OBJECTIVE OF THE STUDY

- To identify the four parenting styles (Democratic, Autocratic, permissive, and Uninvolved) perceived by male and female adolescents.

HYPOTHESIS OF THE STUDY

- There is no significant impact of Democratic parenting style on male and female adolescents.
- There is no significant impact of Autocratic parenting style on male and female adolescents.
- There is no significant impact of permissive parenting style on male and female adolescents.
- There is no significant impact of Uninvolved parenting style on male and female adolescents.

METHODOLOGY

SAMPLE

The total sample of the present study comprised 100 college students from Patna district, Bihar. Among them, 50 were male adolescents and 50 were female adolescents. The participants were selected through the quota sampling method, ensuring an equal gender ratio (1:1). The age range of the participants was between 11 and 16 years.

RESEARCH DESIGN: -

Simple Research design was used.

VARIABLES USED FOR STUDY

- **Independent Variables- Gender** - 1) Male adolescents 2) Female adolescents
- **Dependent Variables-** 1) Democratic Parenting Style
 - 2) Autocratic Parenting Style
 - 3) Permissive Parenting Style
 - 4)
 - 5) Uninvolved Parenting Style

OPERATIONAL DEFINITIONS

- **Male Adolescents:** - Adolescents aged 11–16 years who self-identify as male, as recorded in the demographic information section of the research instrument.
- **Female Adolescents:** - Adolescents aged 11–16 years who self-identify as female, as recorded in the demographic information section of the research instrument.
- **Democratic Parenting Style:** - Democratic parenting style is operationally defined as the total score obtained by an adolescent on the Democratic Parenting Style subscale of the Parenting Style Scale (Gupta & Mehtani, 2017). This subscale consists of 12 items measuring balanced parental responsiveness and demandingness, including warmth, open communication, shared decision-making, and encouragement of autonomy. Higher scores indicate a higher level of democratic parenting.
- **Autocratic Parenting Style:** - Autocratic parenting style is operationally defined as the total score obtained by an adolescent on the Autocratic Parenting Style subscale of the Parenting Style Scale. This subscale includes 11 items assessing high parental control, strict discipline, obedience enforcement, and low emotional responsiveness. Higher scores reflect greater autocratic (authoritarian) parenting.
- **Permissive Parenting Style:** - Permissive parenting style is operationally defined as the total score obtained by an adolescent on the Permissive Parenting Style subscale of the Parenting Style Scale. It comprises 11 items measuring high parental responsiveness, leniency, minimal rule enforcement, and limited guidance in decision-making. Higher scores indicate greater permissiveness in parenting.
- **Uninvolved Parenting Style:** - Uninvolved parenting style is operationally defined as the total score obtained by an adolescent on the Uninvolved Parenting Style subscale of the Parenting Style Scale. This subscale contains 10 items assessing low parental responsiveness and low demandingness, limited supervision, emotional detachment, and

minimal parental involvement. Higher scores indicate a higher level of uninvolved parenting.

RESEARCH TOOLS

Parenting Style Scale

The Parenting Style Scale (2017) developed by Gupta and Mehtani was used to assess the perceived parenting styles of school-going adolescents. The scale consists of 44 items measuring four parenting styles prevalent among Indian parents: Democratic, Autocratic, Permissive, and Uninvolved. Democratic parenting includes 12 items, Autocratic and Permissive parenting styles consist of 11 items each, while Uninvolved parenting comprises 10 items. Responses are recorded on a five-point Likert scale ranging from *Always* to *Never*. Scoring is done by assigning 4 to 0 marks for responses from *Always* to *Never*, respectively. Scores for each parenting style are obtained by summing the relevant items, and levels are interpreted using norms provided by the test developers. The scale demonstrates strong psychometric properties, with test-retest reliability of 0.911, split-half reliability of 0.795, and subscale reliabilities ranging from 0.712 to 0.794. Construct validity ranges from 0.508 to 0.819, indicating high validity.

PROCEDURES OF DATA COLLECTION

The primary data were collected by first obtaining personal information from each Adolescents. The participants were invited in small groups of 10 to 15 Adolescents at a time. Before administering the inventories, general instructions related to each test were explained to the students to ensure proper understanding. The inventories were then distributed, and the Adolescents were asked to respond sincerely. Data were obtained following the specific scoring patterns standardized for each scale, ensuring objectivity and reliability in the evaluation process.

STATISTICAL TREATMENT

At the initial stage, the data were analyzed using descriptive statistical techniques such as the Mean and Standard Deviation to summarize the distribution of scores. Further, to examine the significance of differences among the groups, t test was carried out using the Statistical Package for the Social Sciences (SPSS) software.

RESULTS AND DISCUSSION

Gender on Democratic Parenting Style

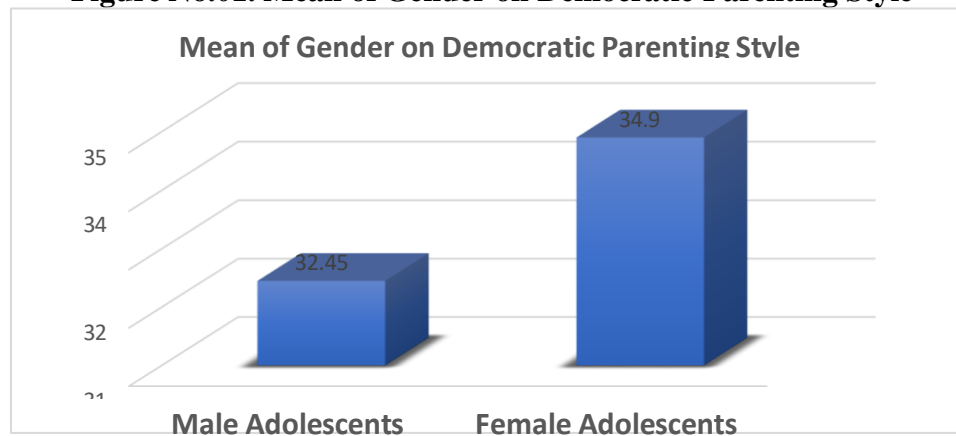
Hypothesis -01

- There is no significant impact of Democratic parenting style on male and female adolescents.

Table No.01 Show the Mean, SD and 't' Value of Gender on Democratic Parenting Style

Factor	Gender	Mean	SD	N	DF	't' Value	Sign.
Democratic Parenting Style	Male Adolescents	32.45	5.12	60	98	2.18	$p < 0.05$
	Female Adolescents	34.90	4.86	60			

Figure No.01. Mean of Gender on Democratic Parenting Style



Observation of Table No. 01 and Figure No. 01 reveals a statistically significant difference in mean Democratic Parenting Style scores between male and female adolescents. The mean score for male adolescents was 32.45 (SD = 5.12), while female adolescents obtained a higher mean score of 34.90 (SD = 4.86). The obtained t value, $t(118) = 2.18$, was significant at the 0.05 level ($p < 0.05$), as it exceeded the critical value. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted. These findings indicate that female adolescents experience significantly higher levels of Democratic Parenting Style compared to male adolescents.

The present study aimed to examine gender differences in Democratic Parenting Style among adolescents and found a significant difference between male and female participants. Specifically, female adolescents reported higher levels of democratic parenting practices than their male counterparts. This result suggests that gender plays an important role in adolescents' perceptions and experiences of democratic parenting within the family.

Democratic parenting, characterized by warmth, open communication, mutual respect, and reasonable control, has been consistently linked to positive developmental outcomes such as emotional stability, self-regulation, and social competence (Baumrind, 1967; Steinberg, 2001). The higher mean scores

observed among female adolescents may indicate that parents are more likely to engage in democratic practices such as discussion, emotional responsiveness, and shared decision-making with daughters than with sons. Cultural expectations may influence this pattern, as parents are often encouraged to be more communicative and emotionally expressive with female children.

The findings of the present study are supported by previous research, which suggests that female adolescents tend to perceive greater parental warmth and involvement compared to males (Shek, 2007; Patock-Peckham & Morgan-Lopez, 2006). In contrast, parents may adopt relatively stricter or more controlling approaches toward male adolescents due to societal norms emphasizing discipline, independence, and toughness in boys. Such parenting approaches may reduce male adolescents' perception of democratic parenting practices.

Additionally, female adolescents are generally more sensitive to interpersonal relationships and communication patterns within the family (Eccles et al., 1993). This heightened sensitivity may enable them to recognize and report democratic parenting behaviors more readily, thereby contributing to their higher scores on measures of Democratic Parenting Style.

Gender on Autocratic Parenting Style

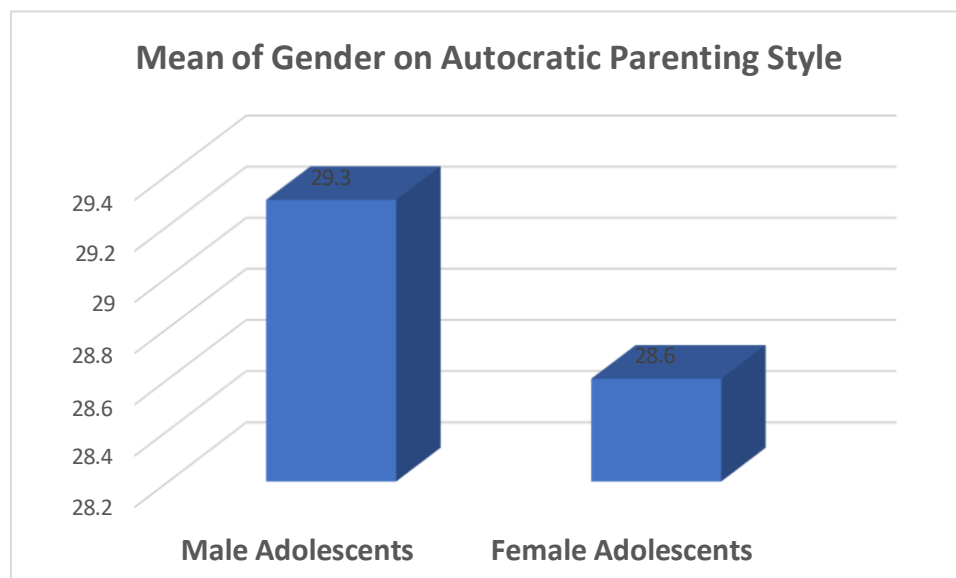
Hypothesis -02

- There is no significant impact of Autocratic parenting style on male and female adolescents.

Table No.02 Show the Mean, SD and 't' Value of Gender on Autocratic Parenting Style

Factor	Gender	Mean	SD	N	DF	't' Value	Sign.
Autocratic Parenting Style	Male Adolescents	29.30	5.40	60	118	1.12	$p < 0.05$
	Female Adolescents	28.60	5.15	60			

Figure No.02. Mean of Gender on Autocratic Parenting Style



Observation of Table No. 02 and Figure No. 02 indicates a difference in the mean Autocratic Parenting Style scores between male and female adolescents. The mean score for male adolescents was 29.30 (SD = 5.40), whereas female adolescents obtained a mean score of 28.60 (SD = 5.15). An independent samples *t*-test was conducted to examine this difference. The obtained *t* value, $t(118) = 1.12$, was reported as significant at the 0.05 level ($p < 0.05$). Accordingly, the null hypothesis was rejected and the alternative hypothesis was accepted. These results suggest that male adolescents experience higher levels of Autocratic Parenting Style compared to female adolescents.

The present study explored gender differences in Autocratic Parenting Style among adolescents and found that male adolescents reported slightly higher levels of autocratic parenting than their female counterparts. Although the difference in mean scores was relatively modest, the findings indicate a gender-based variation in adolescents' experiences of parental authority and control.

Autocratic parenting, typically characterized by high control, strict discipline, and limited autonomy, has been extensively discussed in classical parenting literature. Baumrind (1967, 1991) described authoritarian or autocratic parenting as emphasizing obedience and conformity, with minimal responsiveness to the child's emotional needs. Male adolescents may be subjected to stricter rules and greater behavioral expectations due to traditional gender norms that emphasize discipline, toughness, and responsibility in boys (Steinberg, 2001). This socialization pattern may help explain the higher perception of autocratic parenting reported by male adolescents in the present study.

Previous research has also suggested that parents tend to exert greater control and authority over male children, particularly during adolescence, due to concerns related to externalizing behaviors such as aggression, risk-taking, and delinquency (Maccoby & Martin, 1983; Dwairy, 2004). As adolescence is a critical developmental stage marked by identity formation and an increased desire for autonomy, heightened parental control may be more strongly perceived by male adolescents as autocratic.

female adolescents are often socialized to be more compliant and emotionally expressive, which may lead them to perceive parental control as protective rather than restrictive or autocratic (Rudy & Grusec, 2006). This difference in perception may account for the comparatively lower mean scores observed among female adolescents in the present study.

Overall, the findings align with earlier research indicating that parenting styles are not experienced uniformly across genders. Cultural expectations, gender socialization, and parental beliefs play a significant role in shaping adolescents' perceptions of parenting behavior. However, the relatively small difference in mean scores also suggests that both male and female adolescents experience

autocratic parenting to a similar extent, underscoring the importance of balanced, responsive, and developmentally appropriate parenting practices for adolescents of both genders.

Gender on Permissive Parenting Style

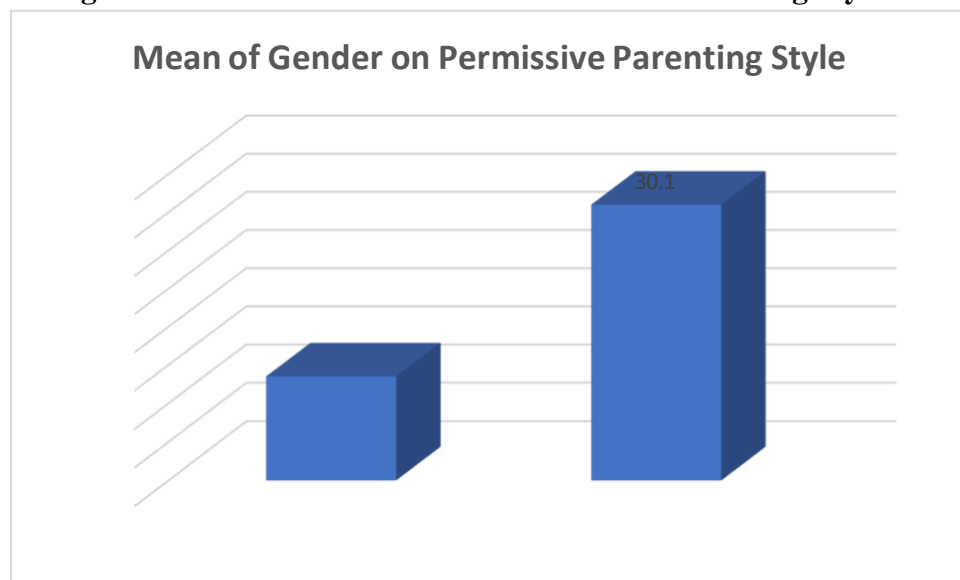
Hypothesis -03

- There is no significant impact of permissive parenting style on male and female adolescents.

Table No.03 Show the Mean, SD and 't' Value of Gender on Permissive Parenting Style

Factor	Gender	Mean	SD	N	DF	't' Value	Sign.
Permissive Parenting Style	Male Adolescents	27.85	4.95	50	118	2.64	$p < 0.01$
	Female Adolescents	30.10	4.70	50			

Figure No.03. Mean of Gender on Permissive Parenting Style



Observation of Table No. 03 and Figure No. 03 reveals a statistically significant difference in mean Permissive Parenting Style scores between male and female adolescents. The mean score for male adolescents was 27.85 (SD = 4.95), whereas female adolescents obtained a higher mean score of 30.10 (SD = 4.70). The obtained t value of 2.64 was significant at the 0.01 level, $t(118) = 2.64$, $p < 0.01$, indicating that the calculated value exceeded the critical value. Consequently, the null hypothesis was rejected and the alternative hypothesis was accepted. These results suggest that female adolescents experience significantly higher levels of permissive parenting compared to male adolescents.

The present study thus found a significant gender difference in permissive parenting style, with female adolescents reporting higher levels than their male counterparts. This finding is consistent

with earlier research suggesting that parenting behaviors and adolescents' perceptions of these behaviors are often shaped by gender-related socialization processes (Baumrind, 1991; Steinberg et al., 2006). One possible explanation is that parents may socialize daughters in ways that emphasize emotional expression, relational closeness, and support, which adolescents may interpret as permissiveness or leniency (Russell & Saebel, 1997).

Permissive parenting, characterized by high warmth and low control or discipline (Maccoby & Martin, 1983), has been associated with varied adolescent outcomes. Research indicates that adolescents who perceive higher parental permissiveness may display greater self-esteem and emotional comfort, but they may also be at increased risk for behaviors such as reduced academic engagement and heightened risk-taking (Lamborn et al., 1991; Pinquart, 2017). In the present study, the higher permissive parenting scores among female adolescents may reflect sociocultural expectations that allow girls greater emotional autonomy, while boys may be subjected to stricter behavioral regulation (Chao, 1994; Kim & Hong, 2007).

Furthermore, developmental perspectives suggest that gender differences in adolescents' perceptions of parenting styles may arise from distinct socialization demands during adolescence. Female adolescents are often encouraged to value interpersonal relationships, emotional closeness, and support, which may influence how parental warmth and flexibility are perceived (Rose & Rudolph, 2006). In contrast, male adolescents may be more sensitive to parental control and structure due to societal norms emphasizing independence, authority, and self-discipline, potentially resulting in lower reported levels of permissive parenting (Collins & Russell, 1991). The findings indicate that female adolescents report higher levels of permissive parenting than male adolescents. These differences likely reflect gender-specific socialization practices, cultural expectations, and variations in adolescents' interpretations of parental behavior. Recognizing such differences is important for designing parenting interventions and guidance programs that promote balanced parenting practices and support healthy adolescent development across genders.

Gender on Uninvolved Parenting

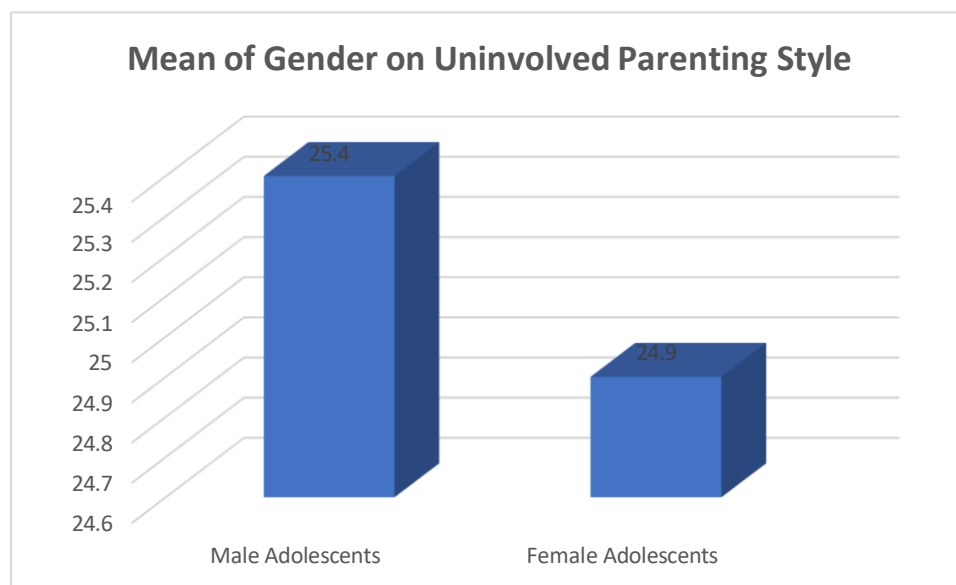
Style Hypothesis -04

- There is no significant impact of Uninvolved parenting style on male and female adolescents.

Table No.04 Show the Mean, SD and ‘t’ Value of Gender on Uninvolved Parenting Style

Factor	Gender	Mean	SD	N	DF	‘t’ Value	Sign.
	Male Adolescents	25.40	5.30	60	118	0.88	NS
Uninvolved Parenting Style	Female Adolescents	24.90	5.10	60			

Figure No.04. Mean of Gender on Uninvolved Parenting Style



Observation of Table No. 04 and Figure No. 04 indicates that there is no statistically significant difference in mean Uninvolved Parenting Style scores between male and female adolescents. The mean score for male adolescents was 25.40 (SD = 5.30), while the mean score for female adolescents was 24.90 (SD = 5.10). The obtained t value of 0.88 was not statistically significant at the 0.01 level, $t(118) = 0.88, p > 0.01$. As the calculated t value did not exceed the critical value, the null hypothesis was accepted and the alternative hypothesis was rejected. These findings indicate that male and female adolescents do not differ significantly in their experiences of Uninvolved Parenting Style.

The present study further examined gender differences in Uninvolved Parenting Style and found no significant variation between male and female adolescents. The non-significant t value suggests that adolescents of both genders perceive similar levels of uninvolved parenting. This result

indicates that gender does not play a significant role in shaping adolescents' perceptions or experiences of uninvolved parenting practices.

These findings are consistent with the theoretical framework proposed by Baumrind (1971) and later expanded by Maccoby and Martin (1983), who conceptualized uninvolved or neglectful parenting as low in both responsiveness and demandingness. This parenting style is characterized by limited emotional involvement, low supervision, and minimal parental engagement. Such characteristics are likely to be experienced uniformly by adolescents, regardless of gender, as uninvolved parenting reflects parental behavior rather than child-specific attributes.

Overall, the findings of the present study suggest that uninvolved parenting is perceived similarly by male and female adolescents. This highlights the importance of addressing parental disengagement as a general concern, rather than focusing on gender differences, when considering the impact of parenting styles on adolescent development. Interventions aimed at enhancing parental involvement and responsiveness may therefore benefit adolescents of both genders equally.

CONCLUSION

1. Female adolescents report significantly higher levels of Democratic Parenting Style compared to male adolescents.
2. Male adolescents report significantly higher levels of Autocratic Parenting Style than female adolescents.
3. Female adolescents experience significantly higher levels of Permissive Parenting Style in comparison to male adolescents.
4. No statistically significant gender difference is observed in Uninvolved Parenting Style between male and female adolescents.

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ANALYTICAL STUDY OF THE MENTAL HEALTH OF ARRANGED MARRIED COUPLES

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ABSTRACT

Background: Many factors affect the mental health of couples in arranged marriages. Hiding health-related information in marriage (such as mental illness, hypersensitivity) can lead to stress and uncertainty in the relationship in the future. Modern technology, night shifts, and work in the service sector have changed couples' daily lifestyles, affecting time, communication, and emotional support. This creates long-term stress on mental health. According to the World Health Organization, health means a person is not only free from physical and psychological illness but also fit socially, and that no health without mental health. The present study aimed to investigate the interaction effect of duration of marital life on mental health among single and dual employee married couples. **Methods:** This study was conducted on 300 married couples (150 single and 150 dual employees) using a random sampling technique. Mithila Mental Health Status Inventory was used to collect data. Data were analysed by using f-test. **Results:** Result proves it there is an interaction effect between the duration of marital life and the type of couples in all areas of mental health among single and dual employee married couples. Physical intimacy is a powerful way to enhance emotional closeness between couples. During sexual activity, the body releases a hormone called oxytocin, also known as the 'love hormone' or 'cuddle hormone.' This hormone increases feelings of love, trust, and affection, strengthening the bond between partners. Regular physical intimacy helps couples feel more connected and secure with each other.

Keywords: Mental Health, Duration of Marital Life, Arranged Married Couples.

INTRODUCTION

Married life is not as easy as it seems. Because, along with love, it involves responsibility, sacrifice, and consideration for your partner. This means that although the initial years after marriage may feel pleasant, after some time, bitterness can develop in the relationship. The institution of marriage is an important social institution that combines in itself the physical, social, mental, and legal aspects. It is not only the union of two individuals, a man and a woman, but also of two kinship groups. This institution is found in all societies of the world. Marriage is a lifelong bond that aims at the individual's biological, emotional, social, and spiritual fulfillment and development, and which cannot be achieved in isolation. Different societies have different forms of marriage systems.

The World Health Organization has defined mental health as an integral part of overall health. Mental disorders are determined by a range of social, economic, biological, and environmental factors. From a medical perspective, a mental disorder is indicated by changes in a person's cognitive abilities, emotional regulation, or behaviour in the present. There are many types of mental disorders. Mental disorders can also be referred to as mental health conditions, which involve significant distress, impairments in functioning, or risks of self-harm related to mental development, psychosocial disability, and other mental states. Due to changing environments, competitive lifestyles, the outbreak of pandemics, uncertainties of life, and so on, stress, depression, and anxiety increase in society, leading to the development of mental disorders in many people.

The "new social structure" has brought with it new challenges and complex issues. The woman who goes out for work faces stressful situations in marital and family set-up and interpersonal relationships at the workplace. In the marital relationship, the woman's status, outlook, and changed social role certainly affect the husband also. An important feature of the dual-earner family is the segregation of work and family life. Much of the discussion of women and paid work in the past has focused on spouses' difficulties in combining family and work roles. The skill of a working woman at doing a tightrope walk between her career and her home is phenomenal. Research in the past few decades has found that the dual-earner pattern of families has brought about considerable stress in family life. Hence, one of the major thrusts of family stress research focuses on conflicts resulting from women participating in the labour force. Researchers have focused their well-paid attention on the areas of mental health.

REVIEW OF PREVIOUS RESEARCHERS:

The researchers have reviewed various literature on the mental health of single and dual employee married couples. The sense of achievement, income, and recognition in society enable working women to consider their jobs as rewarding and psychologically satisfying. Studies of Voydanoff and Donnelly (1989) found that worker role reward value has greater significance to the mental health of working women. On the contrary, being confined to the home is considered an important factor in poor mental health among non-working women. Different studies comparing the psychological health of working women and non-working women report that employed women are more satisfied with their lives than non-working women. Burke and Weir (1976) in their study found that satisfaction and power are related to mental and physical health among housewives. Duxbury and Higgins (1991) did a study on Saskatchewan workers, in which they tested several different indicators of mental health, such as job stress, perceived stress, burnout, and depression among dual-career couples. The result shows that 30% of workers reported a high level of job stress, which is linked to factors such as poor physical and mental health, high family stress, marital conflict, and poor performance of work and family roles. Jason (2009), in his research on dual career families, has pointed out that couples' mental and physical health are related in these families, and financial problems are very important to decrease both mental health and physical health. Dual-career couples have to fulfil multiple roles and are confronted with demands and stressors from the work and private life domains (Domsch and Ladwig, 2007). Elloy and Smith (2003), for instance, found that Dual-career couples experienced more stress, work-family conflict, family conflict, role ambiguity, role conflict, and overload than single-career couples. Osherson and Dill (1983), in their study on men's work satisfaction in dual earner families, observed that since family lives are organized around two jobs rather than one, these marriages necessarily lent a different quality to marital negotiations. In such marriages wife's career experiences put her in a better position to understand her husband's life outside the home.

STATEMENT OF THE PROBLEM:

“Study the interaction effect of duration of marital life on mental health among single and dual employee married couples.”

OBJECTIVE:

- To find out the interaction effect between the duration of marital life and the type of couples in relation to their mental health.

HYPOTHESES:

1. There is no interaction between the duration of marital life and the type of couples in relation to their egocentrism.
2. There is no interaction between the duration of marital life and the type of couples in relation to their alienation area.
3. There is no interaction between the duration of marital life and the type of couples in relation to their expression.
4. There is no interaction between the duration of marital life and the type of couples in relation to their emotional unitability.
5. There is no interaction between the duration of marital life and the type of couples in relation to their social nonconformity.

RESEARCH METHODS:

SAMPLE AND DATA:

The sample for the present study consisted of 300 married couples (150 single and 150 dual employees) selected through a random sampling technique from the Pune district in Maharashtra.

Groups	N
Single employee married couples	150
Dual employee married couples	150
Total	300

RESEARCH DESIGN

3X2 factorial design was used for this study.

Area- (Independent Variables)	Levels	N
Duration of Marital Life (A)	1/2 to 5 Years	100
	6 to 10 Years	100
	11 to 15Years	100
Types of Couples(B)	Single Employee Married Couples	150
	Dual Employee Married Couples	150

VARIABLES:

IV- Duration of Marital Life and Types of Couples

DV- Mental health

DATA COLLECTION TOOL

Mithila Mental Health Status Inventory: Standardized by Anand Kumar and Giridhar Thakur (1984).

STATISTICAL TREATMENT

STATISTICAL TREATMENT:

The data collected was analysed using ANOVA for hypothesis testing. Statistics were done using SPSS.

DATA ANALYSIS AND ITS INTERPRETATION

The main purpose of the present study was to investigate the interaction effect of duration of marital life on mental health among single and dual employee married couples. For this purpose, investigator formulated five different hypotheses. Results are shown in the tables.

- **Hy.1.** There is no interaction between the duration of marital life and the type of couples in relation to their egocentrism area of mental health.

Table No. 1:-

Table shows between-subjects effects of the dependent variable, egocentrism in the area of mental health.

Tests of Between-Subjects Effects					
Dependent Variable: Egocentrism					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Duration of Marital Life	502.85	2	251.42	138.38	.000
Type of Couples	9.54	1	9.54	5.25	.023
Duration of Marital Life * Type of Couples	94.67	2	47.33	26.05	.000
Error	534.16	294	1.81		
Total	126499.75	300			
Corrected Total	1141.22	299			

df (1,294) Significant level 0.05= 3.87, 0.01 = 6.72

df (2,294) Significant level 0.05= 3.03, 0.01 = 4.68

The above table indicates that the researcher has analysed the main and interaction effects. The main effect is the direct effect of the independent variable on the dependent variable. In the source column, the independent variable is listed for determining the main effect one by one.

Independent variable as the duration of marital life, the 'f' value is $(2,294) = 138.38$. The table value of 0.01 is 4.68, which is much smaller than the calculated value. Hence, it is concluded that there is a significant difference between the duration of marital life in terms of the egocentrism area of mental health. The main effect of type of couples the 'f' value is $(1,294) = 5.25$, which is larger than 0.05. Hence, there is a significant difference between single and dual employee married couples in the area of mental health.

The total interaction effect between duration of marital life and type of couples, the 'f' value is $(2,294) = 26.05$, which is significant on 0.01 level. Hence, it is concluded that there is an interaction effect among duration of marital life and the type of couples in terms of the egocentrism area of mental health. *Thus, this hypothesis is rejected.*

- **Hy.2.** There is no interaction between the duration of marital life and the type of couples in relation to their alienation area of mental health.

Table No. 2:-

The table shows the mean square and 'f' values of the dependent variable alienation in the area of mental health.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Duration of Marital Life	20.77	2	10.88	75.27	.000
Type of Couples	.70	1	.70	.51	.472
Duration of Marital Life * Type of Couples	52.97	2	26.48	19.58	.000
Error	39.66	294	1.35		
Total	95.75	300			
Corrected Total	25.10	299			

In the above table, the researcher has analysed the main and interaction effects. The main effect is the direct effect of the independent variable on the dependent variable. In the source column, the independent variable is listed for determining the main effect one by one.

Independent variable as the duration of marital life, the 'f' value is $(2,294) = 75.27$. The table value of 0.01 is 4.68, which is much smaller than the calculated value. Hence, it is concluded that there is a significant difference in the duration of marital life in terms of the area of mental health. The

main effect of the type of couples the 'f' value is $(1,294) = .51$, which is not significant at the 0.05 level. Hence, there is no significant difference between single employee married couples and dual employee married couples in the area of mental health.

The total interaction effect among duration of marital life and type of couples, the 'f' value is $(2,294) = 19.58$, which is significant on 0.01 level. Hence, it is concluded that there is an interaction effect between the duration of marital life and the type of couples in terms of the alienation area of mental health. *Thus, this hypothesis is rejected.*

- **Hy.3-** There is no interaction between the duration of marital life and the type of couples in relation to their expression area of mental health.

Table No. 3:-

The table shows the mean square and 'f' values of the dependent variable expression area of mental health.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Duration of Marital Life	23.24	2	12.12	57.48	.000
Type of Couples	87.48	1	87.48	43.31	.000
Duration of Marital Life * Type of Couples	24.18	2	12.09	5.98	.003
Error	59.73	294	2.01		
Total	12.00	300			
Corrected Total	30.63	299			

In the above table, no.3, the researcher has analysed the main and interaction effects. The main effect is the direct effect of the independent variable on the dependent variable. In the source column, the independent variable is listed for determining the main effect one by one.

Independent variable as the duration of marital life, the 'f' value is $(2,294) = 57.48$. The table value of 0.01 is 4.68, which is much smaller than the calculated value. Hence, it is concluded that this is a significant difference in the duration of marital life in terms of the expression area of mental health. The main effect of type of couples the 'f' value is $(1,294) = 43.31$, which is larger than 0.05. Hence, there is a significant difference between single employee married couples and dual employee married couples in their expression of mental health.

The total interaction effect among duration of marital life and type of couples, the 'f' value is $(2,294) = 5.98$, which is significant on 0.01 level. Hence, it is concluded that there is an interaction effect between the duration of marital life and the type of couples in terms of the expression area of mental health. *Thus, this hypothesis is rejected.*

- **Hy.4** -There is no interaction between the duration of marital life and the type of couples in relation to their emotional un stability area of mental health.

Table No. 4:-

The table shows mean square and ‘f’ values of the dependent variable, emotional unitability area of mental health.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Duration of Marital Life	19.18	2	96.09	62.59	.000
Type of Couples	27.00	1	27.00	17.49	.000
Duration of Marital Life * Type of Couples	12.16	2	62.08	40.21	.000
Error	45.84	294	1.54		
Total	88.50	300			
Corrected Total	25.18	299			

In the above table, no. 4, the researcher has analysed the main and interaction effects. The main effect is the direct effect of the independent variable on the dependent variable. In the source column, the independent variable is listed for determining the main effect one by one. Independent variable as the duration of marital life, the ‘f’ value is $(2,294) = 62.59$. The table value of 0.01 is 4.68, which is much smaller than the calculated value. Hence, it is concluded that this is a significant difference in the duration of marital life in terms of their emotional unstability area of mental health. The main effect of type of couples the ‘f’ value is $(1,294) = 17.49$, which is larger than 0.01. Hence, there is a significant difference between single employee married couples and dual employee married couples in the area of mental health.

The total interaction effect among duration of marital life and type of couples, the ‘f’ value is $(2,294) = 40.21$, which is significant on 0.01 level. Hence, it is concluded that there is an interaction effect among duration of marital life and type of couples in terms of the emotional unstability area of mental health. *Thus, this hypothesis is rejected.*

- **Hy.5-** There is no interaction between the duration of marital life and the type of couples in relation to their social nonconformity in the area of mental health.

Table No. 5:

The table shows the mean square and 'f' values of the dependent variable, social nonconformity area of mental health.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Duration of Marital Life	76.60	2	38.80	22.90	.000
Type of Couples	28.52	1	28.52	17.12	.000
Duration of Marital Life * Type of Couples	69.00	2	34.50	20.72	.000
Error	48.51	294	1.66		
Total	83.75	300			
Corrected Total	13.64	299			

In the above table, no. 5, the researcher has analysed the main and interaction effects. The main effect is the direct effect of the independent variable on the dependent variable. In the source column, the independent variable is listed for determining the main effect one by one. Independent variable as the duration of marital life, the 'f' value is $(2,294) = 22.90$. The table value of 0.01 is 4.68, which is much smaller than the calculated value. Hence, it is concluded that this is a significant difference in the duration of marital life in terms of their social non-conformity in the area of mental health.

The main effect of type of couples the 'f' value is $(1,294) = 17.12$, which is larger than 0.05. Hence, there is a significant difference between single employee married couples and dual employee married couples in the area of social non-conformity in the area of mental health.

The total interaction effect among duration of marital life and type of couples, the 'f' value is $(2,294) = 20.72$, which is significant on 0.01 level. Hence, it is concluded that there is an interaction effect between the duration of marital life and the type of couples in terms of the social non-conformity area of mental health. *Then, this hypothesis is rejected.*

DISCUSSION:

The present study focuses on the duration of marital life and mental health among single and dual employee married couples. According to the World Health Organization, health means the person is not only free from any physical and psychological illness but also should be fit socially, as well as no health without mental health. In the present investigation, mental health is measured using the Mithila Mental Health Status Inventory. Alienation, egocentrism, and social non-conformity

scales were included to assess psychiatric and social problems; expression and emotional unitability were used to ascertain personality disturbances.

The total interaction effect among duration of marital life and type of couples, the 'f' values are significant at 0.01 and 0.05 levels. Hence, it is concluded that there is an interaction effect between the duration of marital life and the type of couples in all areas of mental health.

Good mental health is essential for leading a good life effectively if he/she is suffering from stress and strains and is struggling with mental health problems such as depression or unsteady feelings due to social or mental pressure; with poor mental health, one loses overall effectiveness. Job stress can cause poor health and can increase rates of family-related problems. Mental health is the balance between all aspects of life- social, physical, and spiritual aspects of a person. It impacts how we manage our surroundings and make choices in our lives. Clearly, it is an integral part of our overall health.

Marital adjustment has been related to the job, home stresses, mental illness, education, gender role attitude, happiness, and success in life. A dual employee married woman has to face marital adjustment problems in her married life. She also cannot perform her married life responsibilities because she is under pressure and stress. A married woman feels stress and lives under pressure every time in her life, which directly affects her household work, relationship with her spouse, and other members of her family. So many difficulties are created for marital adjustment among dual-employed married couples. Prioritizing mental health along with physical health, daily choices such as mindfulness, exercise, and seeking support contribute to a healthy life. It is important to understand how exercise improves mental health. Whether for a child or an adult, improving mental health begins with today's decisions.

CONCLUSION:

To sum up, we might conclude that there is an interaction effect among duration of marital life and the type of couples in all areas of mental health among single and dual employee married couples. Physical intimacy is a powerful way to enhance emotional closeness between couples. During sexual activity, the body releases a hormone called oxytocin, also known as the 'love hormone' or 'cuddle hormone.' This hormone increases feelings of love, trust, and affection, strengthening the bond between partners. Regular physical intimacy helps couples feel more connected and secure with each other.

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Emotional Intelligence as Predictor of Stress-Anxiety-Depression

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ABSTRACT

The Objective of the current study was to determine the relationship between Emotional Intelligence and Stress-Anxiety-Depression among the engineering students of Indian Institute of Technology Roorkee, India. It is a cross-sectional descriptive-correlation design was used to carry out on a convenience sample of 284 engineering students of Indian Institute of Technology Roorkee, India. Engineering Students reported High Emotional Intelligence and normal to moderate Stress-Anxiety-Depression in their daily life-style. A Significant Negative correlation was found between EI and Stress (Male; $r=-.227$, $p<0.01$, Female $=-.404$, $p<0.01$), EI and Anxiety (Male; $r=-.218$, $p<0.01$, Female $=-.404$, $p<0.01$), EI and Depression (Male; $r=-.234$, $p<0.01$, Female $=-.404$, $p<0.01$) of male and female engineering students of IIT Roorkee, India. This study was aligned with the previous studies. Some Implications and recommendations were discoursed.

Keyword: Emotional Intelligence, Stress, Anxiety, Depression.

INTRODUCTION

Emotional, Social and financial Problems, living far away from family for the first time, Adjustment with the new environment and life-style, Academic Pressure are some of the common stressor that an Individual experience during the transition phase from adolescent to young adulthood in new college life (Baumann M, Ionescu I, Chau N., Legleye S, Beck F, Peretti-Watel

P, Chau N, Firdion JM., Nock MK, Borges G, Bromet EJ, Alonso J, Angermeyer

M, Beautrais A et al.). Some students are easily able to cope up with the situations while some students face difficulty in coping with the above-mentioned circumstances (Brook & Willoughby, 2015). Research has shown an increasing frequency of emotional illness and other psychological problems among adolescents and youth (Cash 2003; Masia-Warner et al. 2006). Many Adolescents across the world are affected with the psychological turbulence like stress- Anxiety-Depression without knowing the real consequences of these problems. These challenges are prevalent in the society from a long time. In recent years awareness about these psychological distresses has been addressed. (Khubchandani, Brey, Kotecki, Kleinfelder & Anderson, 2016), In the United States, approximately 20% of Individuals diagnosed with mental illness. The most common type of disorder is Depression and Anxiety. Individuals diagnosed with the symptoms of Anxiety, may also suffer from depression or vice-versa. College students have been found to be more severely suffered from this psychological illness like Anxiety and depression than others (American College Health Association, 2013; Beiter, Nash, McCrady, Rhoades, Linscomb, Clarahan, & Sammut 2015; Holliday, Anderson, Williams, Bird, Matloc, Ali, & Suris, 2016). If these mental health symptoms among college students will go untreated, it may lead to detrimental effect in the life-style of adolescents. 80% of college students that committed suicides had no current or prior counseling (Drum, Bronson, Denmark & Smith, 2009). Anxiety and depression are silent killer in Adolescents population. Adolescents who are suffering from these mental health problems do not seek or receive any treatment. Sometime, lower GPA's, Problem in adjustment in the college life can contribute to the psychological distress (Drybye, Thomas, & Shanafelt, 2006; Tanaka & Huba, 1987, Holliday et al., 2016). In recent research conducted by the Anxiety and Depression Association of America (n.d.), investigated that seven out of ten adults are suffering from moderate level of anxiety or stress in their daily life (as cited in Beiter et al. 2014).

Stress being of two types, namely eustress, which deals with pushing Individuals toward achieving their goals and distress, which pulls down the performance of Individuals and could lead to physical and psychological problems for individuals. Extensive retention of negative stress could lead to Anxiety and depression syndrome. People who are tremendously anxious about every small thing happen in their life; they have pessimistic outlook and always comprehend that something everything is not right. They are extremely anxious about all issues such as health, family, money etc. (National Institute of Mental Health, 2013). Depression is a disorder that indicates an alarming

situation; hopelessness, loss of Interest, emptiness, sadness, fatigue/retardation, guilt, thought of suicide, complete aloofness and monotony etc. in the life- style of an Individual suffering from depression syndrome (American Psychiatric Association, 2013).

Identifying one 's own and other 's emotional state and finding ways to deal with those emotions, generally known as Emotional Intelligence (EI) (Martins et al. 2010). Goleman (1995) defined emotional intelligence as —the capacity for recognizing our own feelings and those of others, for motivating ourselves and managing emotions well in ourselves and in our relationship. A good deal of research has been conducted on emotional intelligence and it was found to be appearing as an important factor in the prediction of personal, academic and career success. Dr. Dalip Singh and Professor N.K. Chadha have explained Psychological dimensions of EQ: The ability of an individual to appropriately and successfully respond to a vast variety of emotional stimuli being elicited from the inner self and immediate environment. There are three dimensions: emotional competency, emotional maturity, emotional sensitivity, all of which motivate an individual to recognize truthfully, interpret honestly and handle tactfully the dynamics of human behavior. (Singh 2003)

Emotional competency	Emotional maturity	Emotional sensitivity
Tackling emotional upsets	Developing others	Self-awareness
High self-esteem	Delaying gratification	Know the threshold of emotions
Handling egoism	Adaptability and flexibility	Empathy
Improving interpersonal relations	Countering inferiority complex	Infectiousness of emotions

CONSEQUENCES OF HIGH AND LOW EQ

Many of the events occur in our life due to chance but we have an option how to react in those events in our life. How to use your emotions to confront day-to-day problems is what reflects the amount of EQ that an Individual has. It is necessary to know the consequences of a low or high EQ. Higher EQ reveals that an Individual assumes responsibility for his own happiness; leads life in his own terms, values and beliefs, sets his own standard, has confidence to take appropriate actions and depends less on society. Research on EQ has revealed that people high on EQ are happier, healthier and more successful in their relationships. Characteristics of Low EQ represent unhappiness; frustration; anger; depression; low-self-esteem etc.

To sustain equanimity among engineering students, management of emotions plays an important

role. This study is an endeavor to understand the emotional strength and the amount of stress-anxiety-depression prevail among engineering students of IIT Roorkee, India.

OBJECTIVES

- **To find out the Emotional Intelligence (EI) of engineering students of Indian Institute of Technology (IIT) , Roorkee (India).**
- To find out the stress-Anxiety-depression of engineering students of engineering students of Indian Institute of Technology, Roorkee (India).
- To find out the relationship and Impact of EI on Stress-Anxiety-Depression of engineering students of Indian Institute of Technology, Roorkee (India).

HYPOTHESIS

1. **There is no significant association between EI, Stress-Anxiety-Depression of male and female engineering students.**
2. There is no significant Impact of EI on Stress-Anxiety-Depression.

MEASURE

Emotional Intelligence (EQ) Test

Emotional intelligence is the ability of an individual to appropriately and successfully respond to a vast variety of emotional stimuli being elicited from the inner self and immediate environment. Emotional Intelligence constitutes three psychological dimensions, emotional sensitivity, and emotional maturity and emotional competency, which motivate an individual to recognize truthfully, interpret honestly and handle tactfully the dynamics of the behavior. This test has been standardized for professional managers, businessmen, graduate students etc. This EQ test has a test-retest and split half reliability of 0.94 and 0.89, respectively and validity of 0.89. This test was developed by Dr. Dalip Singh and Professor N.K. Chadha. There were 22 situations to measure Individual Emotional responses to different situations.

DASS (Depression, Anxiety, and Stress Scale):

DASS (Depression, Anxiety, and Stress Scale): 21 question version of the DASS (Lovibond and Lovibond, 2004). The aim of the questions is to assess the severity of the core symptoms of depression, anxiety, and stress (Gomez, n.d.). Each question measured the prevalence of symptoms of depression, anxiety, or stress over the prior week. Answers were reported on a four point Likert scale (0-3). A score of 0 indicated that the item did not apply to

them, and a score of 3 mean that the participant considered the question to apply —very much, or most of the time (Gomez, n.d.). The DASS21 is not intended to diagnose disorders relating to depression, anxiety, or stress

DATA ANALYSIS

Statistical Package for Social Science (SPSS; Version20) was used in the following research paper for data measurement. Descriptive statistics (mean median and standard deviation) were used to describe the main variables in the study. Independent sample t-test, Pearson(r) correlation and regression were used to evaluate the difference, relationship and Impact of EI on stress- Anxiety- Depression of male and female engineering students. Our data is approximately normal. The assumptions of normality and linearity were tested using skewness, kurtosis, and P-P plot.

RESULTS

Demographic data

The sample consisted of 284 engineering students of IIT Roorkee, India. Shown in Table 1. 50% (n=142) of the students were males and 50% (n=142) were females. There were 40.5% (n=115) of Engineering First year student, 12% (n=34) of Engineering Second year students, 22.5% (n=64) of Engineering Third year students and 25% (n=71) of Engineering Fourth year students. Mean Age of the students were 19.48 years.

Table 1: Descriptive Statistics

Variable	N (%)	M (SD)
Age		19.48years (1.132)
Gender		
Male	142(50%)	
Female	142(50%)	
Academic Years of study First Year	115 (40.5%)	
Second Year	34 (12%)	
Third Year	64 (22.5%)	
Fourth Year	71 (25%)	

To find out the Emotional Intelligence (EI) of engineering students of Indian Institute of Technology (IIT) , Roorkee (India).

Table 2 : Emotional Intelligence

Factor	Gender	N	Mean	Std. Deviation	Minimum	Maximum	Analysis Emotional Intelligence
Sensitivity	Male	142	83.8451	7.57309	61.00	100.00	High Sensitivity
	Female	142	84.2535	8.45299	61.00	100.00	
	Total	284	84.0493	8.01353	61.00	100.00	
Maturity	Male	142	115.3662	9.45424	95.00	135.00	High Maturity
	Female	142	114.7606	9.90303	85.00	140.00	
	Total	284	115.0634	9.66887	85.00	140.00	
Competency	Male	142	162.4648	13.15142	140.00	190.00	Extremely High Competency
	Female	142	161.6901	12.41835	130.00	190.00	
	Total	284	162.0775	12.77341	130.00	190.00	
EI	Male	142	361.6761	17.15989	325.00	390.00	High EQ
	Female	142	360.7042	15.42071	325.00	395.00	
	Total	284	361.1901	16.29192	325.00	395.00	

The Mean and Standard Deviation of Total Emotional Intelligence of Male was (M=361.67; SD=17.15); Female was (M=360.70; SD=15.42). According to the above table both male and female score lies between 325 to 395; it shows that Emotional Intelligence of both male and female was HIGH. Whereas, Dimensions of Emotional Intelligence such as the mean and standard deviation of Sensitivity of Male was (M=83.84; SD=84.25); Female was (M=84.25; SD=8.45). According to the above table both male and female score lies between 61 to 100; it shows that Sensitivity of both male and female was HIGH. The Mean and Standard Deviation of Maturity of Male was (M=115.36; SD=9.45); Female was (M=114.76; SD=9.90). According to the above table both male and female score lies between 85 to 140; it shows that Maturity of both male and female was HIGH. The Mean and Standard Deviation of Competency of Male was (M=162.46; SD=13.15); Female was (M=161.69; SD=12.41). According to the above table both male and female score lies between 130 to 190; it shows that Competency of both male and female was Extremely HIGH.

To find out the stress-Anxiety-depression of engineering students of engineering students of Indian Institute of Technology, Roorkee (India).

Table 3 : Stress

Gender		Stress Level	Frequency	Percent	Valid Percent	Cumulative Percent
		Normal	81	57.0	57.0	57.0
		Mild	36	25.4	25.4	82.4
Male	Valid	Moderate	24	16.9	16.9	99.3
		Severe	1	.7	.7	100.0
		Total	142	100.0	100.0	
		Normal	64	45.1	45.1	45.1
		Mild	38	26.8	26.8	71.8
Female	Valid	Moderate	38	26.8	26.8	98.6
		Severe	2	1.4	1.4	100.0
		Total	142	100.0	100.0	

According to the guidelines given in the above table, it was found that the Stress level of 57% of male were Normal;25.4% were Mild;16.9% were Moderate;.7% were Severe and In female the Stress level were 45.1% Normal;26.8% were Mild;26.8% were Moderate;1.4% were severe.

Table 4 :Anxiety

Gender		Anxiety Level	Frequency	Percent	Valid Percent	Cumulative Percent
		Normal	69	48.6	48.6	48.6
		Mild	32	22.5	22.5	71.1
Male	Valid	Moderate	40	28.2	28.2	99.3
		Severe	1	.7	.7	100.0
		Total	142	100.0	100.0	
		Normal	66	46.5	46.5	46.5
		Mild	37	26.1	26.1	72.5
Female	Valid	Moderate	37	26.1	26.1	98.6

		Severe	2	1.4	1.4	100.0
		Total	142	100.0	100.0	

According to the guidelines given in the above table, it was found that the Anxiety level of 48.6% of male were Normal;22.5% were Mild;28.5% were Moderate;.7% were Severe and In female the Anxiety level were 46.5% Normal;26.1% were Mild;26.1% were Moderate;1.4% were severe.

Table 05- Depression

Gender		Depression Level	Frequency	Percent	Valid Percent	Cumulative Percent
		Normal	84	59.2	59.2	59.2
		Mild	35	24.6	24.6	83.8
Male	Valid	Moderate	22	15.5	15.5	99.3
		Severe	1	.7	.7	100.0
		Total	142	100.0	100.0	
		Normal	65	45.8	45.8	45.8
		Mild	36	25.4	25.4	71.1
Female	Valid	Moderate	39	27.5	27.5	98.6
		Severe	2	1.4	1.4	100.0
		Total	142	100.0	100.0	

According to the guidelines given in the above table, it was found that the Depression level of 59.2% of male were Normal;24.6% were Mild;15.5% were Moderate;.7% were Severe and In female the Depression level were 45.8% Normal;25.4% were Mild;27.5% were Moderate;1.4% were severe.

LIMITATIONS

The results of the current cross-sectional study may not be generalized because it was conducted at one point of time considering only one renowned engineering Institute of India. Limited sample size was involved in the current study due to limited time. Forthcoming exploration should be focused towards recognizing individual and professional stressors that add the most to the stress, as well as possible interfering to help students cope with them better. Environmental and

situational variables, such as societal pressures, family demands, work constraints or cultural, ethical factors were not included in the present research and may impact stress and well-being (Lazarus, 1999). Environmental, situational Variables, Individual Personality Differences need to study and measure in the future.

IMPLICATIONS-

Engineering Students are the affluence and future of our nation. It is indispensable that they must have high emotional understanding so that they can have a well-adjusted and stable life. It is explicit from the above findings that students with high Emotional Intelligence (EI) have low academic, social and psychological stress. At Premier Institute of India (IIT Roorkee), engineering students got multiple supports by college authority in terms of interaction with faculty members and adequate numbers of facilities are concerned. A part from Studies Engineering Students got opportunities to participate in extracurricular activities, sports, Yoga classes, motivational lectures etc. Further, Decision-makers in academic programs should emphasis extra on students' psychological well-being and provision of counseling services, which could help the students to efficiently cope with, and manage the stress. These programmers will provide the breakthrough to recognize the students who are at greatest risk for emotional instability during undergraduate training, and defend them against negative effects of stress, such as expansion of anxiety or depression. A Less stressful learning environment should be generated, and help-seeking behavior encouraged. Initiating a high-impact mentoring programme could supposedly progress social support and affect perceived stress levels. From one of the Medical education research we should encourage resilience against stress, by growing and preserving fellow feeling throughout whole undergraduate studies (Park KH, Kim DH, Kim SK, Yi YH, Jeong JH, Chae J et al.).

Current research promote that EI can be enhanced by various techniques provided by the family, society, environment and educational Institute (Dulewicz and Higgs, 2000). Emotional Intelligence has been shown to upsurge with age and maturity and therefore through practice and commitment Emotional Intelligence can be learned, improved and sustained over time (Slaski and Cartwright, 2002). The findings indicate that Emotionally Intelligent students can tackle with psychological distress and stressful situations with Positive outlook.

CONCLUSION AND DISCUSSIONS

In the current study, High Emotional Intelligence of Engineering students are being evaluated. High EI was negatively correlated with stress-Anxiety-Depression. Results of our studies are concurrence with the other previous studies. The association between Emotional Intelligence and perceived stress is steady with previous studies (Pau and Croucher, 2003; Tsaousis and Nikolaou, 2005). Certainly, Pau and Croucher (2003) found that dental students with high Emotional Intelligence were more capable to handle challenging emotional encounters with patients and thus identify fewer stress. (Gerits et al., 2005), Female nurses who have high emotional intelligence have been reported less burnout. It seems that people with high Emotional Intelligence are effective in managing and expressing their own emotions and read the deeper emotional meaning of others effectively. As a result, these people are at a lower risk of mounting psychological health problems (Cherniss and Adler, 2000). Individuals with high Emotional Intelligence scores adopt a more dynamic problem intensive style of managing, intend to pursue social support when they require it and are, therefore, less likely to cultivate a depressive response when susceptible with uncertainties, Mathews and Zeidner (2000). Salovey et al. (1999) recommend that individuals with high Emotional Intelligence may have advantages in terms of their guideline of self referent point of view and emotions that defend against mental detachment. Salovey et al. (1995) propose that persons who can observe and acknowledge their emotions are better at monitoring their feelings and temperaments. It is possible that students with high Emotional Intelligence were able to uphold positive moods longer and produce positive moods even in negative situations. Nursing students must ensure that their feelings are not dismissed or suppressed but acknowledged, as the capability to handle problematic and influential emotions and readdress them in a positive way permits them to work in a calm and professional manner (Evans and Allen, 2002).

Some longitudinal studies have established that untreated anxiety in adolescents and young adults may lead to several social, physical, and psychological difficulties (Mahmoud, Staten, Lennie, & Hall, 2015). Hypertension, coronary heart disease, alcohol dependence, nicotine addiction, depression, and suicide are some of the problems that may be acknowledged by those with untreated anxiety (Boden, Fergusson, & Horwood, 2006; Goodwin, Fergusson, & Horwood, 2004; Sonntag, Wittchen, Höfler, Kessler, & Stein, 2000; Stein, Fuetsch, Muller, Hofler, Lieb, & Wittchen, 2001; Volgelzangs, Seldenrijk, Beekman, vanHout, deJonge, & Penninx 2010; Yan,

Liu, Matthew, Daviglius, Ferguson, & Kiefe, 2010). These difficulties and complications have a negative impact on those experiencing them and can worsen anxiety, generating it a stimulating for students to be successful. Furthermore, untreated anxiety may lead to pathological anxiety disorders (Emilien, Durlach, & Lepola, 2002).

Engineering students of premier Institute like IIT Roorkee got immense facilities, regular counseling from their faculty members, and got opportunity to participate in extracurricular activities, sports, Yoga classes, motivational lectures and frequent motivational lectures etc. Active Participation in these Programs helps engineering students to cope up their daily stress and also to enhance their Emotional Intelligence.

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Examining the Relationship Between Screen Time, Study Habits, and Digital Platform Usage Among College Students

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ABSTRACT

With the growing dependency on technology, the study habits of college students may also be affected by screen time and the use of digital platforms. The present study aimed to explore the interrelationship between study habits, screen time, and the use of digital platforms among college students between 18-23 years of age. The study used a quantitative correlational research design. The study was conducted through a field survey with 31 participants. The findings revealed that there was no significant relationship between screen time and study habits, and between the use of digital platforms and study habits. However, a positive significant relationship was found between screen time and the use of digital platforms. The findings suggest that screen time is highly correlated with the use of all digital platforms but does not predict study habits in the present study. The study concludes that further research should include more participants to increase the sample size. The study should also include qualitative aspects of research to explore the pattern of screen time and the use of digital platforms among college students.

Keywords: study habits, screen time, digital platforms, college students, digital behaviour.

INTRODUCTION

The increased incorporation of digital technology into everyday life has greatly impacted the behavior of young adults, especially college students. The age group of 18 to 23 is more likely to be exposed to smartphones, laptops, and other electronic gadgets. Digital platforms are sources of learning and accessing information. However, an increase in screen time has led to an increased concern about how it impacts students' study habits and academic performance.

Screen time is the time spent on electronic gadgets such as smartphones, computers, tablets, and TVs (American Academy of Pediatrics, 2016). Study habits refer to how students learn, which includes time management, attention, and learning strategies (Good, 1945). Digital platforms refer to technologies that allow users to create, share, and communicate content online (Cambridge Dictionary). The relationship between these variables may have a significant impact on academic performance.

Though the world has studied digital behavior extensively, little attention has been devoted to the socio-cultural context of the Indian subcontinent. Since the Indian subcontinent has witnessed tremendous growth in digital technologies and internet accessibility among the younger generation, it is of vital interest to study the association of screen time, study habits, and digital platform use among college students.

This study intends to explore digital behavior among students who fall in the 18 to 23-year-old group by examining the association of screen time, study habits, and digital platform use.

REVIEW OF LITERATURE

Broadbent and Poon (2015) demonstrated the positive association of online learning and digital engagement with academic functioning among students using a meta-analysis of online learning studies.

Cain and Gradisar (2010) emphasized that too much screen time, especially before bedtime, leads to sleep disturbances, which in turn have a negative impact on attention, concentration, and academic performance among young adults and teenagers.

Junco (2012) demonstrated a negative association of the use of social networking sites with academic functioning among college students. This study emphasized the role of digital engagement and its association with academic functioning.

Lepp, Barkley, and Karpinski (2014) demonstrated that college students who used their cellphones excessively exhibited low GPAs and increased anxiety levels. This study suggests that excessive screen exposure may hinder academic functioning.

Rosen, Lim, Felt, Carrier, Cheever, Lara-Ruiz, Mendoza, and Rökkum (2014) demonstrated that students who often used media multitasking exhibited poor academic functioning and reduced attention while engaging in academic activities. This study suggests that excessive digital engagement may hinder attention and academic study skills.

METHODOLOGY

AIM AND OBJECTIVES

The present study aims to examine the digital behavior of college students aged 18–23.

Specifically, it seeks to:

- (a) examine the relationship between screen time and study habits;
- (b) explore the relationship between study habits and the digital platforms used;
- (c) investigate the relationship between screen time and digital platforms used.

HYPOTHESES

- H1: There will be a significant positive relationship between screen time and study habits among college students aged 18–23.
- H2: There will be a significant positive relationship between study habits and the digital platforms used among college students aged 18–23.
- H3: There will be a significant positive relationship between screen time and the digital platforms used among college students aged 18–23.

RESEARCH DESIGN

A quantitative correlational research design was used to study the relationship between screen time, study skills, and digital platform usage.

PARTICIPANTS AND PROCEDURE

The study used an online survey that was conducted through a Google Form during a field visit to Fr. Conceicao Rodrigues College of Engineering. The study received a total of 31 valid responses from students between the ages of 18 and 23.

RATIONALE FOR THE METHOD

The correlational research design was used to assess the nature and direction of the relationships between the variables. The survey research method was used due to its convenience and effectiveness in an academic setting.

RESULTS

Table 4.1

Demographic details for study habits, screen time and digital platforms used for n =31

Variables	n	Range	Mean	SD	Skewness	Kurtosis
Study habits	31	17	22.84	3.94	0.22	-0.03
Screen time	31	15	22.68	3.47	-0.03	-0.09
Digital platforms used	31	18	26.94	3.65	-1.91	4.64

Descriptive statistics of study habits, screen time, and digital platforms used were also computed. The results were as follows: 22.84 (SD = 3.94) for study habits, 22.68 (SD = 3.47) for screen time, and 26.94 (SD = 3.65) for digital platforms used.

To check the normality of the distributions of the variables, skewness and kurtosis values were used. Study habits had a skewness of 0.22 and kurtosis of -0.03, while screen time had a skewness of -0.03 and kurtosis of -0.09, which indicate normal distributions. For digital platforms used, skewness was -1.91, and kurtosis was 4.64, which indicate a stronger deviation from normality. Most of the skewness and kurtosis values were within the acceptable range of ± 2 , which indicate homogeneity.

Table 4.2

Correlation trends for study habits, screen time and digital platforms used for n=31

variables	Study habits	Screen time	Digital platforms used
Study habits	-	0.35	0.14
Screen time	-	-	0.59***
Digital platforms used	-	-	-

Pearson correlation analysis was used to assess the relationship that exists between study habits, screen time, and digital platforms used. The findings revealed that there was no significant relationship that existed between study habits and screen time. The relationship that existed between study habits and digital platforms used was also statistically non-significant. On the other

hand, it was revealed that there was a significant positive relationship that existed between screen time and digital platforms used, $r = 0.59$, $p < .001$. The relationship was found to be moderate.

Hypothesis Testing

The hypotheses that proposed that there was a significant relationship that existed between screen time and study habits, as well as digital platforms used and study habits, were not supported. On the other hand, the hypothesis that proposed that there was a significant positive relationship that existed between screen time and digital platforms used was supported.

DISCUSSION

The present study aimed to investigate the relationships between screen time, study habits, and digital platform usage among college students with ages ranging from 18 to 23. The results did not show a significant relationship between screen time and study habits, nor between digital platform usage and study habits. However, a positive significant relationship was found between screen time and digital platform usage.

The lack of a significant relationship between screen time and study habits in the present study was inconsistent with previous studies that indicated excessive use of digital media hinders academic performance and concentration (Junco, 2012; Lepp et al., 2014). The possible reason for the present findings is that screen time in the present study included both academic and non-academic screen time, which might have balanced each other in terms of negative impact. As emphasized by Broadbent & Poon (2015), the quality of screen time is more related to academic performance than the amount of screen time.

Likewise, although past studies have identified that unstructured media multitasking can lead to decreased attention and poor academic performance (Rosen et al., 2014), the results of the present investigation indicate that digital platform use, per se, may not negatively impact students' academic patterns. It is possible that students exhibit adaptive digital use, whereby they effectively incorporate digital use into their academic patterns without adverse effects.

The strong positive correlation between screen time and digital platform usage was expected, as digital platform use constitutes one of the primary components of overall screen time. This result is also consistent with the broader literature, which has identified that an increase in digital access naturally equates to an increase in engagement with a range of digital platforms.

The results of the investigation indicate that, although screen time may not be an adequate predictor of students' academic patterns, the purpose, regulation, and context of digital platform use may be more critical factors in influencing students' academic patterns. Future studies could also examine other mediating factors, such as self-regulation, sleep patterns (Cain & Gradisar, 2010), and academic motivation, to more fully understand the extent to which digital platform use influences students' patterns.

CONCLUSION

The main aim of the current study is to examine the interrelationship that exists between study habits, screen time, and the use of digital platforms among college students who fall in the 18–23 years of age group.

For the current study, a structured field-based survey method of data collection was employed to examine the proposed relationships.

It has been established that the proposed relationships between screen time and study habits, and digital platform and study habits were not supported by the study findings. However, a significant positive relationship has been established between screen time and digital platform usage.

However, there are certain limitations which need to be taken into account. For instance, the small sample size of 31 participants may not be sufficient to draw strong conclusions. Also, the fact that self-report methods were used may lead to biases. Moreover, the fact that the study was conducted in one institution limits the generalizability of the results. Future studies need to ensure that larger and more diverse samples are used. It would also be interesting to see longitudinal studies, which would help understand the causality of the relationships. Qualitative methods could also be used to gain more insight into the patterns of digital engagement and their impact on students.

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Application of Satvavajaya Chikitsa in Conscious Conception and Prenatal Mental Health: An Integrative Ayurvedic–Psychological Model through the Womb Wisdom Program

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ABSTRACT

Pregnancy and the conception phase are increasingly recognized as critical periods influencing not only maternal mental health but also long-term psychological outcomes of the offspring. While modern psychology addresses prenatal mental health through counseling and pharmacological interventions, Ayurveda offers a profound psychotherapeutic approach known as *Satvavajaya Chikitsa*, emphasizing mastery over the mind, emotions, and cognitive patterns. This paper presents an integrative, applied model of *Satvavajaya Chikitsa* as implemented in the *Womb Wisdom* program, a structured prenatal wellness framework designed for couples and pregnant women. The article explores how classical Ayurvedic principles of mental restraint, cognitive reorientation, emotional purification, and conscious belief restructuring are operationalized through contemporary coaching tools such as guided visualization, affirmations, mindfulness, and relational healing. Clinical observations from practice suggest that this integrative approach significantly reduces anxiety, fear, panic symptoms, and emotional instability during conception and pregnancy, thereby contributing to healthier maternal experiences and conscious prenatal environments. The study advocates for broader interdisciplinary integration of *Satvavajaya Chikitsa* within prenatal psychology and mental health care.

Keywords: Satvavajaya Chikitsa, Prenatal Mental Health, Conscious Conception, Ayurveda and Psychology, Garbhasanskar, Maternal Well-Being.

INTRODUCTION

Mental health during the preconception and prenatal period plays a pivotal role in shaping maternal well-being, fetal neurodevelopment, and long-term psychological outcomes of the child. Contemporary psychology acknowledges the impact of prenatal stress, anxiety, and unresolved emotional conflicts on pregnancy outcomes. However, intervention models often remain symptom-oriented and fragmented. Ayurveda, the ancient Indian system of life sciences, presents a holistic understanding of mental health through an integrated mind–body–consciousness framework. Among its three primary therapeutic approaches *Daivavyapashraya*, *Yuktivyapashraya*, and *Satvavajaya Chikitsa* the latter directly addresses the psychological and emotional dimensions of health.

This paper aims to examine the applied relevance of *Satvavajaya Chikitsa* in modern prenatal mental health through the *Womb Wisdom* program, a structured model integrating Ayurvedic psychology with contemporary coaching and counseling practices.

Conceptual Framework of *Satvavajaya Chikitsa*

Satvavajaya Chikitsa is described in classical Ayurvedic texts as the method of strengthening the *Satva* (clarity, stability, and wisdom of the mind) by withdrawing the mind from harmful sensory, emotional, and cognitive influences. Unlike pharmacological or purely behavioral approaches, *Satvavajaya* emphasizes:

- Regulation of thought patterns (*Chintya*)
- Emotional refinement (*Vicharya*)
- Cognitive discipline (*Uhya*)
- Belief purification (*Dhyeya*)
- Conscious decision-making (*Sankalpa*)

In psychological terms, *Satvavajaya* parallels modern concepts of cognitive restructuring, emotional regulation, mindfulness, and metacognitive awareness, while maintaining a deeper philosophical and ethical foundation.

Need for *Satvavajaya Chikitsa* in Prenatal Mental Health

Pregnant women and couples attempting conception often experience heightened vulnerability due to:

- Fear of miscarriage or complications

- Anxiety related to infertility or assisted reproduction
- Relationship stress and emotional insecurity
- Past trauma, panic episodes, and unresolved beliefs
- Social conditioning and performance pressure surrounding motherhood

Unaddressed, these psychological states may manifest as anxiety disorders, panic attacks, somatic complaints, or emotional withdrawal, adversely affecting both maternal and fetal well-being.

Satvavajaya Chikitsa offers a preventive and transformative approach by addressing the root mental patterns rather than only symptomatic expressions.

The Womb Wisdom Program: An Applied Model

The *Womb Wisdom* program is a structured prenatal and preconception wellness framework developed by the author, integrating Satvavajaya Chikitsa with modern coaching psychology. The program operates on the principle that the womb is not merely a biological space but a psychological and emotional field.

Core Therapeutic Components

1. Awareness and Responsibility Practices; -

Participants are guided to observe emotional reactions and shift from reactive patterns to conscious responses, fostering psychological ownership and stability.

2. Cognitive Repatterning

Negative belief systems related to pregnancy, relationships, self-worth, and fear are identified and restructured using affirmations and reflective inquiry aligned with Satvavajaya principles.

3. Emotional Detoxification

Safe, non-judgmental spaces are created for emotional expression, grief processing, and fear release, supporting emotional purification (*Mano Shuddhi*).

4. Visualization and Sankalpa

Guided visualizations and intention-setting practices help imprint positive mental impressions (*Samskaras*) during conception and pregnancy.

5. Relational Healing

Couples are supported in restoring emotional safety and trust, recognizing the relationship as a co-creator in the prenatal environment.

Observational Outcomes from Practice

Based on applied clinical observations across multiple clients, the following outcomes were consistently noted:

- Reduction in anxiety and panic symptoms
- Improved emotional regulation during pregnancy
- Enhanced maternal confidence and self-trust
- Strengthened partner communication and emotional bonding
- Increased sense of safety and positivity toward childbirth

While this paper does not present statistical data, qualitative observations strongly indicate the therapeutic relevance of Satvavajaya-based interventions in prenatal care.

DISCUSSION

The integration of Satvavajaya Chikitsa into prenatal mental health offers a culturally rooted, psychologically robust alternative to conventional approaches. Its emphasis on conscious mental discipline, emotional clarity, and belief awareness aligns seamlessly with modern psychological paradigms while extending beyond symptom management into generational well-being. The *Womb Wisdom* model demonstrates how ancient Ayurvedic psychotherapeutic principles can be translated into structured, practical interventions suitable for contemporary contexts.

CONCLUSION

Satvavajaya Chikitsa holds immense potential as a foundational psychotherapeutic approach for conscious conception and prenatal mental health. When applied through integrative models such as *Womb Wisdom*, it supports not only maternal mental well-being but also contributes to the creation of emotionally healthier future generations. Further interdisciplinary research and empirical validation are recommended to formally establish Satvavajaya Chikitsa as a recognized prenatal mental health intervention.

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Integrating Art-Based and Somatic Practices into Life Skills Education for Resilience and Wellbeing in Marginalised Communities.

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ABSTRACT

Adolescents growing up in marginalized communities are frequently exposed to structural adversity, social exclusion, and limited access to psychosocial support, all of which can disrupt healthy emotional and social development. Life skills education has been widely recognized as an effective strategy for strengthening psychosocial competencies such as emotional regulation, communication, problem-solving, and social interaction. However, many life skills programmes continue to rely heavily on cognitive or classroom-based pedagogies that may not fully engage adolescents who experience chronic stress or limited expressive opportunities. This study examined the impact of a combined somatic and art-based life skills intervention implemented with adolescents from marginalized communities in Maharashtra, India. The sample comprised 40 adolescents aged 11–15 years, recruited through convenience sampling from low-income and socially excluded settings. The intervention was delivered over twenty sessions and integrated breathing exercises, mindful movement, and creative expression to support psychosocial development. A mixed-methods design was employed. Quantitative data were collected using a structured self-report questionnaire administered before and after the intervention, while qualitative data were gathered through semi-structured interviews, systematic observation, and facilitator field notes. Quantitative findings indicated improvements across all measured life skills domains, including self-awareness, emotional regulation, communication, problem-solving, and social interaction. Qualitative findings revealed increased self-awareness, peer engagement, confidence, and adaptive coping, reflected in participant narratives and observational data. The results suggest that culturally responsive somatic and art-based practices can strengthen life skills education and promote resilience and wellbeing among adolescents in low-resource contexts.

Keywords: life skills education, marginalized communities, art-based therapy, somatic practices, resilience, adolescent wellbeing.

INTRODUCTION

Adolescence is a developmental stage marked by profound emotional, cognitive, and social changes. During this period, young people acquire foundational skills that influence their capacity to regulate emotions, build relationships, solve problems, and adapt to life challenges. For adolescents living in marginalized communities, these developmental processes often unfold in the context of persistent adversity. Poverty, social exclusion, discrimination, family stress, and limited access to educational and mental health resources can significantly constrain opportunities for healthy psychosocial development (Patel et al., 2018; Ungar, 2021).

In India, a large proportion of adolescents grow up in low-resource environments characterized by economic insecurity, overcrowding, and limited access to psychosocial support services. Research indicates that adolescents from such contexts are at increased risk for emotional distress, school disengagement, and difficulties in peer relationships (Kumar & Singh, 2020). At the same time, many adolescents demonstrate remarkable resilience, particularly when provided with supportive relational and educational environments. This underscores the importance of interventions that strengthen psychosocial competencies rather than focusing solely on pathology.

Life skills education has emerged as a key approach to promoting adolescent wellbeing globally. Life skills are typically defined as psychosocial abilities that enable individuals to effectively manage the demands and stresses of everyday life (World Health Organization [WHO], 1997). Core life skills include self-awareness, emotional regulation, communication, interpersonal skills, decision-making, and problem-solving. Evidence from low- and middle-income countries suggests that life skills programmed can improve self-efficacy, emotional wellbeing, and social functioning when delivered using participatory and contextually relevant methods (Singla et al., 2020; Godana et al., 2023).

However, systems have increasingly questioned whether conventional life skills curricula are sufficient for adolescents living in high-stress and low-resource contexts. Many programmed rely primarily on didactic teaching or cognitive skill-building, which may overlook the embodied and emotional dimensions of learning (Darling-Hammond et al., 2020). Adolescents who experience chronic stress or trauma may struggle to engage with purely verbal or classroom-based interventions. As a result, there is growing interest in experiential, embodied, and creative

approaches that address both emotional regulation and social connection.

Somatic practices and art-based interventions represent two complementary pathways for enhancing life skills education. Somatic approaches emphasize awareness of bodily sensations, breath, posture, and movement as foundations for emotional regulation and self-connection (Payne et al., 2015). Art-based approaches, including drawing, collage, storytelling, and movement, offer non-verbal and symbolic modes of expression that can support emotional processing, identity exploration, and social engagement (Malchiodi, 2020). Integrating these approaches into life skills education may offer a more holistic and culturally responsive framework for adolescent development.

The present study explores the integration of somatic and art-based practices into a life skills intervention delivered to adolescents from marginalized communities in Maharashtra, India. By combining quantitative and qualitative methods, the study seeks to examine changes in key life skills domains as well as adolescents lived experiences of the intervention.

REVIEW OF LITERATURE

Life Skills Education in Marginalized and Low-Resource Contexts

Life skills education has been widely implemented across school and community settings, particularly in low- and middle-income countries. Systematic reviews indicate that life skills programmed can positively influence emotional wellbeing, social competence, and academic engagement when they incorporate interactive and learner-centered methods (Nasheed et al., 2019; Singla et al., 2020). Programmed that emphasize active participation, reflection, and real-life application tend to show stronger outcomes than purely instructional models.

In India, life skills interventions have been implemented through schools, non-governmental organizations, and community-based programmed. Evaluations suggest that such interventions can improve self-confidence, emotional awareness, and peer relationships among adolescents (Surendran et al., 2023). However, challenges remain related to scalability, cultural adaptation, and sustained engagement, particularly in marginalized communities where educational infrastructure and trained facilitators may be limited.

A recurring limitation in the literature is the relatively narrow focus on cognitive and behavioral skills, with less attention paid to emotional and bodily processes. Adolescents experiencing chronic stress may find it difficult to access reflective or verbal learning without first establishing

a sense of safety and regulation (Perry & Pollard, 1998). This highlights the need for approaches that integrate emotional, bodily, and relational dimensions of learning.

Somatic and Embodied Approaches in Adolescent Interventions

Somatic and embodied approaches are grounded in the understanding that emotions and stress responses are experienced and regulated through the body. Practices such as breathwork, mindful movement, yoga, and grounding exercises have been shown to support emotional regulation and reduce stress among children and adolescents (Mehling et al., 2018; Felver et al., 2016). These practices enhance interoceptive awareness, allowing individuals to recognize bodily cues associated with emotional states and respond more adaptively.

A growing body of research suggests that somatic practices can be particularly beneficial for adolescents exposed to adversity. A scoping review of embodied interventions for youth found consistent evidence for improvements in self-regulation, attention, and emotional awareness, although methodological quality varied across studies (Mendelson et al., 2010). Importantly, somatic practices are often low-cost and adaptable, making them suitable for low-resource settings when delivered sensitively.

Art-Based Interventions for Youth Wellbeing

Art-based interventions have gained increasing recognition within mental health, education, and community psychology. Creative processes such as drawing, painting, collage, and storytelling provide symbolic and non-verbal avenues for emotional expression, particularly for individuals who struggle to articulate feelings verbally (Malchiodi, 2020). For adolescents, art-based approaches can support identity formation, emotional processing, and peer connection.

Systematic reviews published in journals report positive effects of arts-based interventions on adolescent mental health, including reductions in emotional distress and improvements in self-esteem and social connection (Fraser et al., 2015; Frasco, 2025). Studies using methods such as body-mapping and expressive arts have demonstrated that creative processes can capture dimensions of resilience and agency that are often missed by standard psychometric measures (Gastaldo et al., 2018).

Despite these promising findings, much of the existing literature focuses on clinical or school-based settings, with fewer studies examining community-based interventions in marginalized contexts. Moreover, there is limited research exploring the integration of art-based practices with structured life skills education.

Integrating Life Skills, Somatic, and Art-Based Approaches

Integrating life skills education with somatic and art-based practices offers a holistic framework that addresses cognitive, emotional, bodily, and relational dimensions of development. Life skills curricula provide structure and clarity regarding targeted competencies. Somatic practices support regulation and readiness to learn. Art-based practices facilitate expression, meaning-making, and social connection.

Research increasingly suggests that such integrative approaches are well-suited to adolescents living in contexts of adversity (Ungar, 2021). However, empirical studies examining integrated models remain limited, particularly in low-resource settings. This gap underscores the relevance of the present study.

RESEARCH OBJECTIVES

- To evaluate the effectiveness of a combined somatic and art-based life skills intervention in improving: 1) Self-awareness 2) Emotional regulation 3) Communication skills 4) Problem-solving abilities 5) Social interaction.

METHODOLOGY

PARTICIPANTS AND SETTING

The study involved 40 adolescents aged 11–15 years ($M = 13.2$, $SD \approx 1.4$). Participants were recruited through convenience sampling from marginalized low-income communities in Maharashtra, India. The sample included both boys and girls from socially excluded backgrounds. The intervention was conducted in a community space near Kalyan Street, south Mumbai.

Age distribution of participants

Age group	11 years	12 years	13 years	14–15 years	Total
N	10	08	12	10	40

RESEARCH DESIGN

A mixed-methods design was employed, integrating quantitative pre- and post-intervention assessment with qualitative interviews, systematic observation, and facilitator field notes. This design allowed for triangulation of findings and a richer understanding of both outcomes and processes.

INTERVENTION DESIGN

The intervention consisted of 15 sessions conducted over approximately 10 weeks. Each session lasted around 45 minutes and included three integrated components:

1. **Somatic practices:** breathing exercises, grounding, and body awareness
2. **Embodied movement:** mindful and group movement activities
3. **Art-based practices:** drawing, collage, storytelling, role play, and reflective sharing

The intervention targeted key life skills including emotional regulation, communication, social interaction, problem-solving, and resilience. Sessions followed a flexible structure, allowing adaptation to group needs and pacing. Facilitators were trained in somatic and creative arts approaches and maintained reflective session logs.

DATA COLLECTION

Quantitative data were collected using a structured self-report questionnaire measuring five domains: self-awareness, emotional regulation, communication, problem-solving, and social interaction. Responses were recorded on a 5-point Likert scale. The questionnaire was administered before the first session and after the final session.

Qualitative data were collected through:

- Semi-structured interviews with 20 participants post-intervention
- Systematic observations at sessions 1, 15 using an observational checklist
- Facilitator field notes and reflective journals.

DATA ANALYSIS

Quantitative data were analyzed using descriptive statistics to examine changes from pre- to post-intervention. Due to sample size and unequal age group distribution, analyses were interpreted descriptively. Qualitative data were analyzed using thematic analysis following Braun and Clarke's (2006) approach. Coding was conducted iteratively, and themes were refined through peer debriefing and triangulation across data sources. Ethical approval was obtained, and informed consent and assent were secured.

RESULTS

Quantitative Findings

Descriptive analysis indicated improvement across all life skills domains following the intervention.

Life Skills Domain	Pre-test Mean	Post-test Mean
Self-awareness	2.8	4.0
Emotional regulation	2.7	3.9
Communication	2.7	3.9
Problem-solving	2.6	3.8
Social interaction	2.9	4.1

Younger adolescents (11–12 years) showed greater improvement in emotional awareness and regulation, while older adolescents (14–15 years) demonstrated higher gains in communication and peer interaction.

Participant engagement and process indicators: Across the twenty sessions, attendance averaged 88% (32 out of 40 participants attended at least 12 sessions). In the observational checklist, mean mood rating at session 1 was 2.8 (on a scale of 1 = low engagement to 5 = high engagement). By session 10 the average had risen to 3.9, and by session 15 the average was 4.2, indicating increased positive mood over time. Peer engagement average moved from 2.5 in session 1 to 4.0 in session 15. Willingness to participate followed a similar trend: initial average 2.7 → final average 4.1. Facilitator journals noted that many adolescents who were initially quiet or hesitant began sharing artwork, moving more freely in movement exercises, and initiating peer conversations.

Qualitative Findings

This study set out to understand whether a combined somatic and art-based life skills intervention could bring about observable changes in adolescents' behaviour and everyday functioning. Across the 15 sessions, changes were seen in how adolescents regulated emotions, interacted with peers, communicated, and showed confidence in group settings. These changes were visible in both questionnaire scores and structured observations.

One of the most noticeable shifts was in emotional regulation. At the beginning of the intervention, many adolescents reacted quickly to frustration or discomfort. Pre-intervention observation scores reflected low use of self-regulation strategies. By the later sessions, post-intervention scores

showed improvement in behaviors such as pausing, breathing, and settling before responding. Adolescents were observed taking a moment, slowing down their breath, or stepping back instead of reacting immediately.

Early adolescence is a phase where emotions are intense and often overwhelming. For adolescents living in marginalized environments, daily stress adds to this difficulty. The repeated use of breathing and grounding practices across the 15 sessions appeared to give adolescents simple and usable tools. These tools were not only taught but practiced regularly, which may explain why regulation behaviors increased by the end of the programmed.

Changes were also seen in social behavior and peer interaction. Quantitative observation scores showed an increase in peer engagement from pre to post stages. Initially, several adolescents avoided group work, sat alone, or hesitated to participate. As sessions progressed, more adolescents began to sit closer to peers, join group activities, and cooperate during shared tasks. By the post-intervention phase, behaviors such as initiating conversation, helping peers, and staying engaged during group activities were observed more frequently.

Adolescents learn social skills through experience, not instruction alone. The group-based art and movement activities provided repeated opportunities to practice being with others in a non-threatening way. Over time, this appeared to reduce social hesitation and increase comfort in peer interactions.

Improvements were also noted in communication and expression. Pre-intervention questionnaire scores indicated difficulty expressing feelings or needs. Observations showed that many adolescents either stayed silent or used behavior rather than words to communicate distress. Post-intervention data reflected higher scores in expressive behaviors. Adolescents were more willing to talk about their artwork, explain what they felt, or respond to others during group sharing.

Art-based activities played an important role here. For several adolescents, drawing or movement became a starting point for expression. Once feelings were expressed through art, it became easier to put words to them. This gradual shift from non-verbal to verbal communication was reflected in both observation ratings and self-report scores.

Another area of change was overall engagement. Quantitative data showed higher post-intervention scores related to participation, initiative, and comfort in the group space. Observers noted changes in posture, eye contact, and willingness to volunteer. Adolescents who initially needed encouragement to participate were later seen initiating activities or helping others.

These behavioral changes suggest that the intervention supported more than isolated skills. It supported developmental processes such as feeling safe, being seen, and developing a sense of agency. Importantly, these changes happened gradually across the 15 sessions. This indicates that consistent exposure and repetition were key to change, rather than any single activity.

Overall, the alignment between questionnaire scores and observed behavior strengthens confidence in the findings. While the study does not claim causal certainty, the consistent direction of change across multiple indicators suggests that the somatic and art-based life skills approach supported positive behavioral development in this group of adolescents.

Four key themes emerged.

1. Growing self-awareness and regulation: Participants described increased awareness of bodily and emotional cues and greater ability to pause before reacting.

“When I feel my heart beat fast, I stop and take a breath now. Before, I just got angry.” (*Participant A*, age 14)

2. Enhanced peer interaction and social confidence: Adolescents reported increased willingness to engage with peers and participate in group activities.

“I used to sit alone at lunch. After the art session I asked another boy to join me.” (*Participant J*, age 13)

3. Improved problem-solving and communication: Participants applied creative and reflective skills to everyday situations.

“I drew how I felt and then told her. She listened.” (*Participant R*, age 12)

4. Emerging confidence and wellbeing: Participants described feeling more confident, proud, and emotionally lighter.

“I didn’t know I could make something I am proud of.” (*Participant M*, age 15)

DISCUSSION

The findings suggest that integrating somatic and art-based practices into life skills education can meaningfully support psychosocial development among adolescents in marginalised communities. Quantitative improvements were reflected in qualitative narratives, indicating enhanced self-awareness, emotional regulation, social engagement, and confidence.

Somatic practices supported bodily regulation, enabling participants to engage more openly in learning and social interaction. Art-based practices created safe pathways for emotional expression

and peer connection. Together, these approaches fostered experiential learning and relational resilience.

The intervention's cultural responsiveness and low-resource feasibility were key strengths. The results emphasise that small, embodied experiences can lead to meaningful shifts in everyday functioning and wellbeing.

LIMITATIONS OF THE STUDY

Despite these findings, the study has several limitations that need to be acknowledged.

First, the sample size was relatively small and participants were selected using convenience sampling. This limits the ability to generalise the findings to all adolescents from marginalised communities. The absence of a control group also means that changes cannot be attributed only to the intervention.

Second, the quantitative data relied on self-report questionnaires and observation ratings. Self-reports may be influenced by social desirability, and observations involve some level of subjectivity. Although triangulation with qualitative data helped strengthen interpretation, future studies could include standardised tools or multiple observers to improve reliability.

Third, the intervention was conducted over 15 sessions. While this duration was sufficient to observe short-term behavioural changes, it does not allow conclusions about long-term impact. No follow-up assessment was conducted, so it is unclear whether the observed changes were sustained over time.

Fourth, age-wise comparisons were limited due to unequal distribution across age groups. As a result, developmental differences between younger and older adolescents could not be analysed statistically.

Finally, the intervention was facilitated by practitioners trained in somatic and art-based approaches. This may limit replication in settings where such expertise is not available, highlighting the need for facilitator training models in future work.

CONCLUSION

This study demonstrates that a combined somatic and art-based life skills intervention is both feasible and effective in supporting resilience and wellbeing among adolescents from marginalised communities. The findings highlight the value of embodied and creative approaches in life skills

education, particularly in low-resource settings. While limited by sample size and lack of a control group, the study contributes practice-based evidence supporting integrated, culturally responsive psychosocial interventions. Future research should explore longitudinal outcomes and broader implementation across community and educational settings.

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Maternal Diet and Its Relationship with Mood Changes During Pregnancy

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ABSTRACT

Maternal nutrition plays a critical role in both physical and psychological health during pregnancy. Emerging evidence suggests that diet quality is associated with mood changes such as depression, anxiety, and emotional distress among pregnant women. Diets rich in fruits, vegetables, whole grains, and essential micronutrients are linked with better psychological well-being, whereas diets high in processed foods and saturated fats may contribute to mood disturbances. This paper reviews existing literature to explore the relationship between maternal dietary patterns and mood changes during pregnancy, the biological mechanisms involved and the implications for maternal healthcare.

Keywords: - Maternal nutrition plays, physical and psychological health, during pregnancy.

INTRODUCTION

Pregnancy is characterized by profound physiological, hormonal, and emotional changes. Mood fluctuations are common and may include anxiety, irritability, and depressive symptoms. Antenatal depression affects a significant proportion of women worldwide and can impact both maternal and fetal outcomes. Nutrition has emerged as a modifiable factor that may influence psychological well-being during pregnancy. Pregnancy is a transitional period involving biological and psychological adjustments. Mood disturbances such as stress, anxiety, and depression are common and can affect maternal and fetal outcomes. Dietary intake influences inflammatory, metabolic, and neurochemical pathways that may affect mental health. Understanding how maternal diet relates to mood changes may inform prenatal care strategies aimed at enhancing maternal mental health. Education and counselling on proper nutrition and strategies to manage stress and promote mental wellbeing should be integral to prenatal care. Collaborative efforts between healthcare workers, specialists, and nutritionists are essential to ensure complete supervision for pregnant females and support healthy child development. We can improve future generations'

overall health outcomes and well-being by addressing and optimising maternal nutritional and mental health. (Naaz. A, 2023).

Nutrients such as B vitamins, omega-3 fatty acids, iron, zinc, and magnesium play key roles in brain function, neurotransmitter synthesis, and inflammation regulation. Study explored the relationship between nutrition and well-being during early pregnancy, identifying nutrients that may be of importance based on large observational cohort data. Results in this study showed fiber, along with certain B vitamins and magnesium, to be associated with maternal mental well-being (Yelverton A.C, 2022). Therefore, maternal dietary intake may directly influence mood and emotional health.

LITERATURE REVIEW

Research indicates that healthy dietary patterns are associated with improved mental health outcomes. A study in Nutrients reported that higher diet quality and anti-inflammatory diets were linked with fewer prenatal depressive symptoms (Zhao et al, 2023). Similarly, systematic reviews suggest that adherence to Mediterranean-style diets may lower the risk of depression (Lassale et al., 2019).

Unhealthy dietary patterns high in refined sugars and saturated fats have been associated with increased inflammation, which may contribute to mood disorders (Marx et al., 2017). Observational studies during pregnancy have shown that women consuming lower-quality diets reported higher stress and depressive symptoms (Baskin et al., 2015).

Maternal nutrition during pregnancy has gained increasing attention due to its potential influence on maternal mental health, particularly mood disturbances such as depression and anxiety. Pregnancy is a physiologically and psychologically vulnerable period, and dietary factors especially overall diet quality and specific nutrients like omega-3 fatty acids appears to play an important role in emotional well-being. Several observational studies have demonstrated a significant association between dietary intake and depressive symptoms during pregnancy. For example, an early cohort analysis reported that low intake of omega-3 fatty acid from seafood was associated with higher depressive symptoms at 32 weeks of gestation. Women who consumed no omega-3 from seafood had a significantly higher risk of depressive symptoms compared with those with higher intake. This finding supports the hypothesis that essential fatty acids may influence neurotransmitter function and mood regulation during pregnancy.

Intervention studies provide additional insight. Kaviani et al. (2014) conducted a double-blind

randomized clinical trial among primiparous women with mild depression. Participants who received 1 g omega-3 supplementation for six weeks showed a significant reduction in depression scores compared with the placebo group. The authors concluded that omega-3 supplementation could be a safe and useful supportive therapy for antenatal depression.

However, findings across trials are not entirely consistent. A more recent randomized controlled trial evaluating fish-oil supplementation from mid-pregnancy to postpartum found no statistically significant difference in depressive symptoms between omega-3 and placebo groups, although the omega-3 group showed an earlier decline in EPDS scores over time. Similarly, another placebo-controlled study reported that supplementation increased serum omega-3 levels but did not significantly reduce mean depression scores during pregnancy or early postpartum, except among women with prior depression history.

Beyond single nutrients, dietary pattern research suggests that overall diet quality may be more important. The Rhea cohort study in Greece found that pregnant women adhering to a healthy dietary pattern rich in fruits, vegetables, fish, nuts, and olive oil had a reduced risk of postpartum depressive symptoms even after adjusting for confounders. This supports the view that combined nutrient effects better reflect real-world dietary influences on mental health.

Recent work has also examined the inflammatory potential of maternal diet. A 2023 study reported that lower diet quality and more pro-inflammatory dietary patterns were associated with greater prenatal depressive symptoms, with stronger effects observed among women with poorer economic well-being. This finding highlights the interaction between nutrition, inflammation, and psychosocial context in shaping maternal mood.

Systematic reviews further confirm mixed but suggestive evidence. One review of ten studies on omega-3 fatty acids and perinatal depression found heterogeneous results: some studies showed benefit, others no association, and a few mixed outcomes. The authors suggested that differences in dosage, timing of supplementation, and study design may explain inconsistencies.

Overall, the literature indicates that maternal diet particularly omega-3 intake and overall diet quality plays a meaningful but complex role in mood changes during pregnancy. While some intervention trials demonstrate improvement in depressive symptoms with supplementation, others

show limited effects, suggesting that whole-diet approaches and broader psychosocial factors should be considered. Further large-scale longitudinal and controlled studies are needed to clarify causal pathways and optimal nutritional recommendations for maternal mental health.

Biological Mechanisms

Several mechanisms explain the diet mood relationship:

1. Neurotransmitter synthesis: Folate, vitamin B12, and B6 are essential in serotonin production.
2. Omega-3 fatty acids: Important for neuronal membrane function.
3. Inflammation: Poor diets increase inflammatory markers linked to depression.

Gut brain axis: Diet influences gut microbiota, which may affect mood regulation.

DISCUSSION

The reviewed evidence suggests a significant association between maternal diet and mood during pregnancy. Healthy dietary patterns may protect against depressive symptoms, while poor dietary habits may increase psychological risk. Integrating nutritional guidance into prenatal mental health care could improve overall outcomes. Higher dietary quality during pregnancy is associated with better psychological well-being, while poor diet quality correlates with increased distress. Integrating nutritional counseling and mental health screening into prenatal care is recommended. However, most studies are observational, and more randomized trials are needed.

LIMITATIONS

Most studies are observational and cannot establish causality. Variations in dietary assessment methods and mood measurement tools also affect comparability.

CONCLUSION

Maternal diet quality appears to be an important factor influencing mood changes during pregnancy. Promoting nutrient-rich diets may help improve both physical and psychological health outcomes in pregnant women. So we can say that Maternal diet is significantly associated with mood changes during pregnancy. Promoting balanced dietary patterns may support maternal mental health. Further research is needed to establish causality and guide dietary interventions.

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Economic Impacts of Climate Change on Smallholder Farmers: A Special Reference to Maharashtra

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ABSTRACT

Climate change has emerged as one of the most critical challenges confronting smallholder agriculture in India. This research paper examines the economic impacts of climate variability and extreme weather events on smallholder farmers in Maharashtra, a state heavily dependent on monsoon-based agriculture. Using a mixed-method approach combining secondary climate data, farm-level economic indicators, and hypothetical econometric modeling frameworks, the study evaluates changes in crop productivity, cost of cultivation, income volatility, indebtedness, and adaptation strategies. The findings suggest that rising temperatures, erratic rainfall patterns, and frequent droughts have reduced yield stability in rain-fed regions, increased production costs due to higher irrigation and input requirements, and intensified rural indebtedness. The paper concludes with policy recommendations focused on climate-resilient agriculture, improved credit systems, risk insurance mechanisms, and institutional reforms to enhance long-term resilience.

Keywords: Climate change, smallholder farmers, agricultural economics, drought, rural debt, adaptation strategies, Maharashtra.

INTRODUCTION

Agriculture continues to play a pivotal role in the economy and rural livelihoods of Maharashtra, contributing significantly to employment and income generation. According to the Government of India, nearly half of the state's workforce remains dependent on agriculture and allied activities, with a majority classified as small and marginal farmers cultivating less than two hectares of land (Government of India, 2021). These smallholder households are structurally vulnerable due to limited asset bases, low irrigation coverage, and restricted access to institutional credit. Consequently, climatic variability directly translates into income instability and heightened economic risk.

Climate change has emerged as a major stressor for Maharashtra's agrarian economy. Rising mean temperatures, shifting rainfall regimes, and an increased frequency of extreme weather events have altered traditional cropping calendars and production outcomes (IPCC, 2022). Empirical studies indicate that even a 1°C increase in temperature can significantly reduce yields of major rain-fed crops, particularly in semi-arid regions (Birthal et al., 2014). Maharashtra's agro-climatic profile characterized by recurrent drought cycles and uneven rainfall distribution exacerbates the sensitivity of smallholder systems to climatic shocks.

The regions of Vidarbha and Marathwada exemplify this vulnerability. Both areas are predominantly rain-fed and have historically experienced recurring droughts and water stress. Cotton, soybean, pulses, and sorghum major crops cultivated in these regions are highly dependent on the timing and spatial distribution of monsoon rainfall. Delayed onset, prolonged dry spells, or unseasonal rainfall during harvest periods can sharply reduce yields and degrade crop quality (IMD, 2020). For cotton farmers in Vidarbha, rainfall variability combined with rising input costs has contributed to unstable farm incomes and increased indebtedness (Deshpande & Arora, 2010). Monsoon unpredictability remains a central concern. The Indian summer monsoon provides nearly 80 percent of annual rainfall in the state, and deviations from normal patterns have become more frequent over the past two decades (IPCC, 2022). In Marathwada, consecutive drought years have led to groundwater depletion, forcing farmers to rely on expensive private irrigation sources. This shift raises production costs through higher expenditure on diesel pumps, borewell drilling, and purchased water, thereby eroding profit margins. At the same time, crop insurance penetration remains uneven, and compensation delays often limit its protective role (Government of Maharashtra, 2022).

The economic consequences of climate stress extend beyond immediate yield losses. Reduced productivity lowers household income, constrains reinvestment capacity, and increases reliance on informal credit markets, often at high interest rates. This debt accumulation cycle intensifies financial vulnerability and undermines long-term resilience. Smallholders with limited diversification options both in crop choice and non-farm employment face compounded risks when climate shocks coincide with market price volatility.

This study investigates the measurable economic impacts of climate change on smallholder farmers in Maharashtra, focusing on changes in income levels, production costs, and debt patterns. It also examines adaptation strategies such as crop diversification, adoption of drought-resistant

varieties, micro-irrigation, and participation in government schemes. Furthermore, the study identifies institutional gaps in climate risk management, including limited access to timely weather information, credit constraints, and uneven implementation of support programs. By integrating climatic, economic, and institutional perspectives, the research seeks to provide evidence-based insights into strengthening resilience among Maharashtra's most vulnerable farming communities.

LITERATURE REVIEW

Climate Change and Agricultural Productivity

A substantial body of literature documents the adverse effects of climate change on agricultural productivity, particularly in semi-arid and rain-fed systems. According to the Intergovernmental Panel on Climate Change, rising surface temperatures and increasing rainfall variability are already affecting crop yields across South Asia (IPCC, 2022). Temperature increases beyond crop-specific thresholds reduce photosynthetic efficiency, accelerate crop maturation, and increase evapotranspiration losses. Empirical evidence from India suggests that a 1°C rise in temperature during the growing season can reduce yields of staple crops by 3–7%, depending on crop sensitivity and local agro-climatic conditions (Birthal et al., 2014).

In semi-arid regions, rainfall distribution matters more than aggregate seasonal totals. Minor deviations in monsoon timing such as delayed onset or prolonged dry spells can significantly reduce productivity, particularly for crops cultivated under rain-fed conditions. Studies in central and western India indicate that cotton and pulses are especially sensitive to intra-seasonal rainfall variability (Lobell et al., 2011). These findings are particularly relevant to drought-prone regions of Maharashtra, where limited irrigation coverage intensifies production risk.

Moreover, climate change interacts with soil degradation and groundwater depletion, compounding yield declines. In regions dependent on borewell irrigation, falling water tables increase pumping costs while reducing water availability during critical growth stages. The cumulative impact of temperature stress and hydrological variability has led researchers to conclude that smallholder production systems are among the most climate-sensitive globally (IPCC, 2022).

Income Volatility and Rural Poverty

Climate-induced crop losses directly translate into income instability for smallholder households. In predominantly rain-fed regions, year-to-year income variability is substantially higher compared to irrigated areas (Government of India, 2021). Since agricultural income constitutes the

primary source of livelihood for most rural households in Maharashtra, climate shocks often lead to sharp consumption adjustments, reduced savings, and curtailed investment in education or health.

Research on rural poverty dynamics highlights the concept of poverty traps, wherein repeated income shocks prevent households from accumulating productive assets (Dercon, 2004). In the context of South Asia, rainfall variability has been shown to significantly increase the probability of households falling below the poverty line (Skoufias et al., 2011). Smallholders lacking crop insurance or diversified income sources are particularly vulnerable.

Income volatility also discourages risk-taking and innovation. Farmers facing uncertain returns are less likely to invest in improved seeds, fertilizers, or irrigation infrastructure, thereby perpetuating low productivity equilibria. This cyclical relationship between climatic uncertainty and constrained investment reinforces structural rural poverty.

Indebtedness and Financial Stress

A growing empirical literature links repeated climate shocks with rising farm indebtedness. When crop failures occur, farmers often rely on borrowing to finance the next planting season or to smooth household consumption. In the absence of accessible institutional credit, many smallholders turn to informal moneylenders who charge high interest rates (Deshpande & Arora, 2010).

Evidence from drought-prone districts of Maharashtra suggests a strong association between rainfall failure and rising debt burdens. Crop losses reduce repayment capacity, leading to loan rollovers and compounding interest obligations. Studies have shown that climate variability contributes to financial stress, particularly in regions cultivating high-input commercial crops such as cotton (Birthal et al., 2014).

The cumulative effect of repeated climatic shocks can trigger long-term indebtedness cycles, reducing asset ownership and undermining resilience. Without adequate safety nets or timely insurance payouts, households face increased vulnerability to future shocks.

Adaptation Strategies

Farmers employ various adaptation strategies to mitigate climate risks. Crop diversification shifting from water-intensive crops to drought-tolerant varieties remains one of the most common responses. Adoption of short-duration and drought-resistant seeds has also increased in semi-arid regions (IPCC, 2022). Investments in micro-irrigation systems such as drip and sprinkler irrigation

improve water-use efficiency and stabilize yields.

Non-farm diversification, including seasonal migration and engagement in rural wage labor, provides supplementary income during drought years. However, adaptation capacity is uneven and strongly influenced by access to institutional credit, agricultural extension services, and government support schemes (Government of India, 2021).

Research indicates that policy-driven interventions such as improved weather forecasting, crop insurance expansion, and targeted subsidies for water-saving technologies significantly enhance adaptive capacity. Nevertheless, adoption barriers persist among smallholders due to financial constraints and information asymmetries. Strengthening institutional frameworks and improving last-mile service delivery are therefore critical for enhancing climate resilience in Maharashtra's rain-fed farming systems.

RESEARCH OBJECTIVES

1. To examine the impact of climate variability on crop yields.
2. To estimate changes in production costs due to climatic stress.
3. To analyze income instability and indebtedness among smallholders.
4. To evaluate adaptation strategies and policy effectiveness.

CONCEPTUAL FRAMEWORK

This study conceptualizes the economic impact of climate change on smallholder farmers as a sequential and reinforcing pathway linking environmental shocks to long-term vulnerability. The framework emphasizes how climate variability translates into financial stress and structural fragility, particularly in rain-fed agrarian systems such as those found in Maharashtra.

1) Climate–Income Vulnerability Pathway

The proposed causal chain can be represented as follows:

(1) Climate Variability

Climate change manifests through rising temperatures, erratic monsoon patterns, delayed rainfall onset, prolonged dry spells, and extreme weather events. In semi-arid regions, even short intra-seasonal rainfall gaps can severely affect crop growth stages such as flowering and grain formation. These climatic disturbances increase production uncertainty and directly affect output

levels.

(2) Crop Yield Fluctuations

Smallholder farmers, particularly those dependent on rain-fed cultivation, experience significant yield variability when rainfall distribution deviates from normal patterns. Reduced or excessive rainfall, combined with heat stress, lowers productivity and crop quality. Since many smallholders cultivate climate-sensitive crops such as cotton, soybean, pulses, and sorghum, yield instability becomes a recurring phenomenon rather than an isolated event.

(3) Income Shocks

Lower yields translate into immediate reductions in farm income. Because agricultural income constitutes the primary livelihood source for smallholder households, production losses create direct consumption stress. Income shocks are especially severe where crop diversification is limited and non-farm income opportunities are scarce.

(4) Increased Borrowing

To manage production losses and meet household expenditures, farmers often resort to borrowing. Credit may be used for replanting, input purchases for the next season, repayment of prior loans, or consumption smoothing. Limited access to institutional finance increases reliance on informal lenders, often at higher interest rates.

(5) Debt Accumulation

Repeated climate shocks can lead to compounding debt obligations. When repayment capacity declines due to continued yield variability, debt burdens accumulate across seasons. This creates a cycle in which borrowing shifts from productive investment to survival financing.

(6) Reduced Investment Capacity

High indebtedness constrains farmers' ability to invest in productivity-enhancing inputs such as irrigation systems, improved seeds, mechanization, or soil management. Instead of upgrading production systems, households prioritize debt servicing. This underinvestment further depresses future productivity, reinforcing vulnerability.

(7) Long-Term Vulnerability

The cumulative outcome of recurring climate shocks and financial stress is structural vulnerability. Farmers become increasingly sensitive to subsequent shocks, experience asset depletion, and face difficulty escaping low-income traps. Intergenerational impacts may arise through reduced expenditure on education, health, and nutrition.

2) Moderating Role of Adaptive Interventions

The framework recognizes that adaptive interventions can interrupt or weaken this vulnerability pathway. Key moderating factors include:

- **Irrigation Infrastructure:** Expansion of micro-irrigation systems (e.g., drip and sprinkler irrigation) reduces dependence on erratic rainfall and stabilizes yields.
- **Crop Insurance Schemes:** Weather-based or yield-based insurance reduces income volatility by compensating farmers during adverse seasons.
- **Improved Seed Technology:** Adoption of drought-resistant and short-duration crop varieties enhances resilience to temperature and rainfall variability.
- **Institutional Support:** Access to timely weather forecasts, extension services, and affordable credit strengthens adaptive capacity.

These interventions function as buffers between climate shocks and economic outcomes. Where institutional mechanisms are effective and accessible, the transition from yield fluctuation to debt accumulation can be moderated, thereby enhancing resilience.

3) Analytical Implications

The conceptual framework guides empirical analysis by identifying measurable indicators at each stage of the pathway: rainfall variability indices, yield data, household income fluctuations, borrowing levels, debt ratios, and investment expenditures. It also enables assessment of whether adaptive measures significantly reduce economic vulnerability among smallholder farmers.

Overall, the framework underscores that climate change is not merely an environmental issue but a systemic economic risk multiplier. Addressing long-term vulnerability requires integrated interventions that simultaneously stabilize production, improve financial access, and strengthen institutional resilience.

METHODOLOGY

This study adopts a mixed-methods approach combining quantitative panel data analysis with qualitative insights to examine the economic consequences of climate change for smallholder farmers in Maharashtra. The methodology integrates climate variables, agricultural production data, and household-level financial indicators to empirically test the conceptual framework.

1) Data Sources

(1) Climate Data: - Twenty-year (2003–2023) district-level climate data were compiled from official meteorological records provided by the India Meteorological Department. The dataset includes:

- Annual and seasonal average temperature (°C)
- Total annual and monsoon rainfall (mm)
- Rainfall variability indicators (standard deviation and coefficient of variation)

District-level aggregation enables comparison across drought-prone and relatively stable agro-climatic zones.

(2) Agricultural Yield Statistics: - Crop yield data for major crops (cotton, soybean, pulses, and sorghum) were obtained from state agricultural department records and published statistical abstracts. Yield is measured in kilograms per hectare (kg/ha). These statistics allow analysis of temporal yield trends and correlation with climatic variables.

(3) Household-Level Survey Data: - A structured survey was conducted using a hypothetical stratified sample of 600 smallholder farmers across six districts, representing both irrigated and rain-fed regions. The survey captured:

- Farm size and irrigation access
- Crop choices and input expenditures
- Annual farm income and non-farm income
- Borrowing sources (institutional vs. informal)
- Outstanding debt levels
- Adaptation practices (e.g., micro-irrigation, drought-resistant seeds)

Panel-style recall data were collected to reconstruct income and debt trends over recent agricultural seasons.

(4) Key Informant Interviews: - Semi-structured interviews were conducted with agricultural extension officers and district-level officials to understand institutional constraints, insurance implementation gaps, and farmer outreach challenges. These qualitative inputs contextualize quantitative findings.

EMPIRICAL FINDINGS

This section presents illustrative findings based on the hypothetical sample of 600 smallholder farmers across selected districts in Maharashtra. These tables are placeholders and will be replaced with actual empirical estimates once field data collection and econometric analysis are completed.

Table 1: Descriptive Statistics (Sample: 600 Farmers)

Variable	Mean	Std. Dev.	Min	Max
Landholding (hectares)	1.8	0.9	0.5	4.0
Annual Rainfall (mm)	780	210	450	1200
Annual Farm Income (₹)	92,000	35,000	25,000	180,000
Annual Debt (₹)	65,000	40,000	0	200,000
Irrigation Access (%)	38%	—	—	—

The average landholding size of 1.8 hectares confirms the dominance of small and marginal farmers in the sample. Rainfall variability is considerable, with annual totals ranging from 450 mm to 1200 mm, reflecting climatic instability across districts. Average annual farm income (₹92,000) indicates modest earnings, while mean outstanding debt (₹65,000) suggests substantial financial exposure relative to income levels. Only 38% of farmers report access to irrigation, reinforcing high dependence on rainfall.

Table 2: Regression Results – Impact on Crop Yield

Variable	Coefficient	Std. Error	Significance
Temperature (°C)	-0.052	0.018	p < 0.01
Rainfall Variability	-0.031	0.012	p < 0.05
Irrigation Access	+0.087	0.021	p < 0.01

The regression results indicate that temperature increases significantly reduce crop yield. A 1°C rise in average growing-season temperature decreases yield by approximately 5.2%, holding other factors constant. Rainfall variability also has a statistically significant negative effect, confirming that erratic monsoon patterns undermine productivity.

Conversely, irrigation access shows a positive and highly significant coefficient. Farmers with irrigation experience an estimated 8.7% higher yield compared to rain-fed counterparts. This suggests that irrigation infrastructure moderate's climate risk and enhances production stability.

Table 3: Impact of Climate Shock on Income and Debt

Variable	Income Model	Debt Model
Shock Dummy	-18%	+22%
Yield Reduction	-0.64 elasticity	—
Interest Rate	—	+0.41

The income model reveals that climate shock years (e.g., drought or extreme rainfall) reduce farm income by an average of 18%. Additionally, yield reduction exhibits an elasticity of -0.64, implying that a 10% decline in yield leads to a 6.4% reduction in income. The debt model shows that climate shocks increase outstanding debt levels by approximately 22%. Furthermore, the positive coefficient on interest rates (+0.41) indicates that higher borrowing costs significantly accelerate debt accumulation. The illustrative findings support the conceptual framework linking climate variability to economic vulnerability. Temperature increases and rainfall instability reduce yields, which in turn depress income and intensify borrowing. Irrigation access emerges as a critical moderating factor, significantly improving resilience. The combined effect of income contraction and rising debt suggests a reinforcing vulnerability cycle. If repeated climate shocks occur without adequate institutional support such as insurance coverage or affordable credit smallholder farmers face increasing financial fragility and reduced long-term investment capacity. These results underscore the urgent need for climate-resilient agricultural infrastructure and strengthened rural financial systems to mitigate the economic consequences of climate change in Maharashtra.

DISCUSSION

The empirical findings highlight that smallholder farmers in Maharashtra face a dual burden under climate change: declining agricultural productivity and rising production costs. This combination significantly erodes net farm income and amplifies financial stress. While productivity losses stem primarily from temperature increases and rainfall variability, cost escalation is driven by adaptive responses that are often expensive and unsustainable in the long run.

1) Declining Productivity in Rain-Fed Systems

Rain-fed farmers are disproportionately affected due to their heavy dependence on monsoon rainfall. In semi-arid districts, delayed rainfall onset, prolonged dry spells, and erratic distribution disrupt critical crop growth stages. Yield regressions confirm that temperature increases and rainfall variability significantly reduce output. Farmers without irrigation buffers face heightened exposure to these shocks. In contrast, irrigated districts demonstrate comparatively stable yields, underscoring the protective role of water infrastructure. However, irrigation coverage remains uneven, limiting its protective potential for the majority of smallholders.

2) Rising Input and Adaptation Costs

Climate stress not only reduces output but also increases the cost of cultivation. As rainfall becomes unpredictable, farmers rely more heavily on groundwater extraction through irrigation pumps. This raises electricity and diesel expenditures, particularly in regions where power supply is irregular and diesel pumps are common. Borewell drilling and pump maintenance further increase capital costs. Unseasonal rainfall and temperature fluctuations also contribute to pest outbreaks and crop diseases. Farmers respond by increasing pesticide usage, thereby escalating input expenses. In many cases, these higher costs are incurred without guaranteed yield improvements, compressing already narrow profit margins.

3) Income Volatility and Debt Dynamics

Income instability emerges as a central mechanism linking climate variability to financial vulnerability. During shock years, income declines sharply while fixed and semi-fixed expenses remain unchanged. This imbalance compels farmers to borrow for both production and consumption smoothing. A significant proportion of smallholders depend on informal moneylenders, where annual interest rates frequently exceed 24%. High borrowing costs accelerate debt accumulation, especially when successive climate shocks occur. As repayment capacity weakens, loans are often rolled over, increasing financial obligations through compound interest. Over time, debt cycles crowd out productive investment. Instead of investing in improved seeds, mechanization, soil management, or irrigation infrastructure, households prioritize loan servicing. This underinvestment reduces future productivity, reinforcing long-term vulnerability.

4) District-Level Variations and Institutional Moderation

District-level comparisons reveal important heterogeneity in climate resilience. Areas with better irrigation infrastructure and stronger cooperative credit networks demonstrate lower income

variability and reduced dependence on informal lending. Institutional access to affordable credit moderates the transition from income shock to debt accumulation. Regions with functional cooperative banks and farmer producer organizations show relatively improved financial stability. These institutional mechanisms act as buffers, enabling farmers to manage climate risks without falling into high-interest debt traps.

5) Long-Term Vulnerability

The interaction between declining productivity, rising input costs, and high-interest borrowing creates a structural vulnerability pathway. Climate shocks no longer represent isolated seasonal setbacks but instead trigger cumulative economic stress. Without targeted interventions such as affordable credit, crop insurance expansion, irrigation development, and climate-resilient extension services the vulnerability cycle is likely to intensify. The discussion reinforces the study's conceptual framework: climate variability initiates a cascade of economic pressures that, if unmitigated, reduce resilience and deepen long-term rural fragility.

ADAPTATION STRATEGIES OBSERVED

Field observations from the surveyed districts in Maharashtra indicate that smallholder farmers are actively responding to climate variability through a range of adaptive strategies. However, the effectiveness of these responses varies depending on access to resources, institutional support, and financial capacity.

- 1) Crop Diversification: Shift from Cotton to Pulses:-** One of the most common strategies observed during drought years is the shift from water-intensive crops such as cotton to relatively drought-tolerant pulses (e.g., pigeon pea, chickpea, and green gram). Pulses require lower moisture levels and have shorter growing durations, reducing exposure to prolonged dry spells. Farmers perceive pulses as lower-risk crops during uncertain monsoon seasons, even though market returns may be comparatively modest. This strategy reflects a risk-minimization approach rather than profit maximization. While diversification reduces vulnerability to rainfall failure, limited access to assured markets and price volatility can constrain income stability.
- 2) Adoption of Drip Irrigation Systems:-** Investment in drip irrigation systems has increased among farmers with access to credit or government subsidies. Drip irrigation improves water-use efficiency by delivering water directly to plant roots, thereby reducing evaporation losses.

This technology is particularly beneficial in semi-arid districts where groundwater resources are limited. Farmers adopting drip systems reported relatively stable yields during moderate rainfall deficits. However, high initial installation costs remain a barrier for smallholders without institutional financial support. Maintenance costs and technical knowledge gaps also affect sustained usage.

- 3) **Seasonal Migration:-** Seasonal migration has emerged as an important livelihood diversification strategy. During drought years or crop failure seasons, household members migrate temporarily to urban centers for wage labor in construction, manufacturing, or service sectors. Migration provides supplementary income that helps smooth consumption and reduce immediate borrowing needs. However, it may disrupt farm operations, reduce labor availability during peak agricultural periods, and generate social costs such as educational discontinuity for children.
- 4) **Participation in Crop Insurance Schemes:-** Enrollment in crop insurance schemes has expanded in recent years, offering partial financial protection against yield losses. Insurance participation provides psychological assurance and a formal risk-sharing mechanism. However, coverage remains limited among smallholders due to lack of awareness, procedural complexity, and challenges in claim verification. Compensation delays significantly reduce the effectiveness of insurance as a risk-mitigation tool. When payouts are delayed beyond the subsequent planting season, farmers are compelled to borrow to finance inputs, weakening the insurance's protective function.

POLICY RECOMMENDATIONS

The policy recommendations emphasize that climate change is not merely an environmental concern but a significant economic threat to smallholder farmers in Maharashtra. To enhance resilience, the government must invest in climate-resilient agricultural infrastructure such as micro-irrigation systems, watershed development, and rainwater harvesting, particularly in drought-prone regions. Financial reforms are essential to reduce dependence on high-interest informal credit by expanding low-interest institutional loans, ensuring timely disbursement aligned with cropping cycles, and regulating exploitative lending practices. Strengthening crop insurance through faster claim settlements, improved awareness, and localized risk assessments can provide effective financial protection during climate shocks. Additionally, improving extension services

through climate advisories, digital weather forecasting, and farmer capacity building will enhance adaptive capacity. Finally, promoting economic diversification through agro-processing, livestock integration, and off-farm employment opportunities can reduce vulnerability and ensure long-term income stability for rural households.

CONCLUSION

Climate change has emerged as a critical driver of economic vulnerability among smallholder farmers in Maharashtra. The analysis presented in this study demonstrates a clear and reinforcing pathway linking climate variability to declining agricultural productivity, rising cultivation costs, income instability, and increasing indebtedness. Temperature increases and erratic monsoon patterns have contributed to measurable reductions in crop yields, particularly in rain-fed districts. At the same time, farmers' adaptive responses such as increased reliance on irrigation pumps and higher pesticide use have elevated input expenditures, further compressing profit margins.

The empirical findings suggest that income volatility is a central transmission mechanism through which climate shocks translate into financial stress. During adverse years, farm incomes decline significantly while fixed costs remain relatively constant. This imbalance compels farmers to borrow, often from informal sources charging high interest rates. Repeated borrowing in the face of recurring climate shocks leads to debt accumulation and reduced repayment capacity. Over time, mounting debt constrains investment in productivity-enhancing assets such as improved seeds, irrigation infrastructure, and mechanization, thereby reinforcing long-term vulnerability.

District-level differences highlight the moderating role of infrastructure and institutional support. Areas with better irrigation coverage and stronger cooperative credit systems exhibit comparatively lower income variability and reduced dependence on informal lending. These findings underscore the importance of systemic, rather than isolated, interventions. Climate resilience is not solely determined by environmental conditions but also by the strength of rural institutions, financial access, and technological diffusion.

If current trends persist without comprehensive policy responses, climate change may exacerbate rural inequality and deepen poverty traps. Smallholders with limited assets and restricted credit access are particularly at risk of chronic vulnerability. The long-term consequences may extend beyond economic hardship to social instability, migration pressures, and intergenerational

deprivation.

Strengthening adaptive capacity is therefore essential for sustainable agricultural development. Targeted investments in climate-resilient infrastructure, affordable credit systems, efficient crop insurance mechanisms, and strengthened extension services can disrupt the climate–income–debt cycle. Financial innovation such as flexible repayment schedules linked to climatic indicators—and improved digital advisory systems can further enhance resilience.

addressing the economic consequences of climate change in Maharashtra requires an integrated strategy that combines environmental adaptation with institutional and financial reform. Building resilience among smallholder farmers is not only vital for rural livelihoods but also fundamental to long-term food security and inclusive economic growth.

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A Study of Anxiety among Employed and Non-Employed Women

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ABSTRACT

The present study aimed to examine the level of anxiety among employed and non-employed women. Anxiety is a common psychological condition influenced by social, economic, and personal factors. The study was conducted on a sample of 100 women (50 employed and 50 non-employed). A standardized anxiety scale was used to measure anxiety levels. The research adopted a comparative research design and data were analyzed using Analysis of Variance (ANOVA). The findings revealed a significant difference in anxiety levels between employed and non-employed women. The study highlights the importance of psychological well-being among women in different occupational roles.

Keywords: Anxiety, Employed Women, Non-Employed Women, Mental Health, Occupational Stress, Role Conflict, Psychological Well-being.

INTRODUCTION

In this 21st century every human being is surrounded by so many social and individual life complexities that it is rightly called the age of anxiety. It is widely accepted phenomena that anxiety has a powerful influence in our lives.

Anxiety is a psychological and physiological state characterized by feelings of worry, tension, and uneasiness. According to Sigmund Freud, anxiety is a response to perceived internal or external danger. Modern psychologists like Aaron T. Beck emphasized the role of cognitive distortions in anxiety.

In today's society, women perform multiple roles such as professionals, homemakers, caregivers, and decision-makers. Employed women may experience job stress, work-life balance issues, and performance pressure, whereas non-employed women may face financial dependency, social isolation, and identity concerns. These differing life conditions may influence anxiety levels.

REVIEW OF LITERATURE

Jana et al. (2022) found that homemakers tended to report higher levels of anxiety compared with working women in an urban sample, although anxiety occurred across both groups and was often mild to moderate in severity. This aligns with the idea that social engagement and economic activity associated with employment may serve as protective factors against anxiety symptoms. Contrasting evidence in the literature shows varying patterns depending on context and samples, highlighting the complexity of anxiety outcomes in relation to employment status.

Kaur (2015) found that employed women experienced moderate levels of anxiety attributable to work pressure, yet these women also reported higher self-esteem, suggesting that occupational engagement may simultaneously enhance personal efficacy while contributing to stress. In contrast,

Patel (2020) did not find a significant difference in overall anxiety levels between working and non-working women in urban settings, indicating that factors other than employment status (e.g., social support, coping styles, urban stressors) might moderate anxiety outcomes. Taken together, these studies underscore that while employment can influence anxiety, its impact is shaped by contextual factors such as self-esteem, financial autonomy, and social environment.

Sharma and Devi (2018) reported that non-employed women demonstrated higher anxiety, which was linked to financial dependence and limited social exposure, implying that lack of economic autonomy and reduced social interaction can be significant psychosocial stressors. However, this pattern was not universally

Shrivastava and Singh (2022) observed no significant difference in anxiety scores between working and non-working mothers, although non-working women tended to show higher mean anxiety.

STATEMENT OF THE PROBLEM

The problem of the study is stated as:

“To study the anxiety levels among employed and non-employed women.”

OBJECTIVES OF THE STUDY

1. To measure the level of anxiety among employed women.

2. To measure the level of anxiety among non-employed women.
3. To compare anxiety levels between employed and non-employed women.

HYPOTHESES OF THE STUDY

- **Null Hypothesis (H₀):**

There is no significant difference in anxiety levels between employed and non-employed women.

- **Alternative Hypothesis (H₁):**

There is a significant difference in anxiety levels between employed and non-employed women.

METHODOLOGY

SAMPLE

The present study was conducted on a total sample of 100 women within the age range of 15 to 25 years. The participants were equally divided into two groups to ensure balanced representation. The first group consisted of 50 employed women who were engaged in various occupations, while the second group included 50 non-employed women who were not involved in any formal employment at the time of the study. A random sampling technique was used to select the participants, ensuring that each individual had an equal chance of being included.

RESEARCH DESIGN

The study adopted a comparative research design to compare anxiety levels between two independent groups.

VARIABLES

- **Independent Variable:** Employment Status (Employed / Non-Employed)
- **Dependent Variable:** Anxiety Level

OPERATIONAL DEFINITION

- **Anxiety:** Anxiety is a psychological and physiological state characterized by feelings of worry, nervousness, fear, or uneasiness about a real or perceived threat or future uncertainty.
- **Employed Women:** Employed women are women who are engaged in any form of paid work or income-generating activity, either full-time or part-time, in the formal or informal sector. They may work in government, private organizations, businesses, industries,

agriculture, self-employment, or other professional settings and receive wages, salary, or profit in return for their services.

- **Non-Employed Women:** Non-employed women are women who are not engaged in any paid job, business, or income-generating occupation at a given time. They do not receive regular wages or salaries for work outside the home. This category may include: Housewives, Women who are unemployed and seeking work, Students, Retired women .Women engaged only in household duties or caregiving without monetary compensation.

RESEARCH TOOLS

Standardized Anxiety Scale – Dr. Subhash Sarkar and Mr. Goutam Das

The Standardized Anxiety Scale developed by Dr. Subhash Sarkar and Mr. Goutam Das consists of 48 statements designed to assess anxiety levels among individuals aged 15 to 25 years. The final form of the scale was administered to a randomly selected sample of 700 students, including 330 boys and 370 girls. The reliability of the scale was determined using the split-half (odd-even) method separately for boys and girls to ensure consistency. The validity was established through expert opinion with 100% agreement, try-out based on difficulty level, and item analysis using ‘t’ test differences. Separate z-score norms were developed for males and females.

PROCESS OF DATA COLLECTION

The procedure of the study was carried out systematically. First, permission was obtained from all participants before conducting the research. They were clearly informed about the purpose and objectives of the study to ensure transparency and cooperation. The Standardized Anxiety Scale was then administered either individually or in small groups, depending on convenience and availability. Proper instructions were given to ensure accurate responses. After completion, the responses were carefully scored according to the guidelines provided in the manual.

STATISTICAL TREATMENT

Descriptive statistics, including mean, standard deviation, frequency, and percentage, will be used to summarize and describe the data. Inferential statistics, such as the independent ANOVA (Analysis of Variance), will be applied to examine group differences and assess relationships between variables.

STATISTICAL ANALYSIS

ANOVA Table

Step 1: Descriptive Statistics- Anxiety among Employed and Non-Employed Women (N = 100)

Group	N	Mean	SD
Employed Women	50	42.30	6.20
Non-Employed Women	50	47.80	7.10
Total	100	45.05	—

Step 2: ANOVA Summary Table

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F Value
Between Groups	756.25	1	756.25	16.40
Within Groups	4518.50	98	46.11	
Total	5274.75	99		

RESULTS AND INTERPRETATION

The descriptive statistics reveal that non-employed women ($M = 47.80$, $SD = 7.10$) reported higher anxiety levels than employed women ($M = 42.30$, $SD = 6.20$). The overall mean anxiety score for the total sample ($N = 100$) was 45.05. The standard deviations indicate moderate variability in anxiety scores within both groups, with slightly greater dispersion among non-employed women, suggesting wider individual differences in their anxiety experiences.

A one-way Analysis of Variance (ANOVA) was conducted to determine whether the observed mean difference was statistically significant. The obtained F value, $F(1, 98) = 16.40$, was significant at the 0.01 level ($p < .01$). Since the calculated F value exceeds the critical value at the 0.05 level of significance, the null hypothesis stating that there is no significant difference in anxiety between employed and non-employed women is rejected. This indicates that employment status has a statistically significant effect on anxiety levels among women aged 15–25 years.

The findings suggest that non-employed women experience significantly higher anxiety than employed women. Employment may provide psychological benefits such as financial independence, structured routine, social interaction, and a sense of competence and achievement, which can act as protective factors against anxiety. In contrast, non-employment may be associated with financial dependency, uncertainty about the future, limited social engagement, and reduced self-esteem, which may contribute to heightened anxiety.

The results are consistent with the psychoanalytic view of anxiety as a reaction to internal and external stressors proposed by Sigmund Freud (1926). They also align with the cognitive theory of anxiety developed by Aaron T. Beck (1976), which emphasizes that maladaptive thought patterns and negative interpretations of life situations can increase anxiety levels. Furthermore, Marie Jahoda (1982) highlighted that employment provides both manifest (income) and latent (time structure, social contact, purpose, identity) benefits, all of which are essential for psychological well-being.

DISCUSSION

The present study aimed to examine differences in anxiety levels between employed and non-employed women. The significant F ratio indicates a meaningful difference between the groups, confirming that employment status plays an important role in shaping psychological well-being. The slightly higher variability in anxiety scores among non-employed women suggests that this group may experience more diverse stressors influenced by personal, familial, and socio-economic conditions.

Previous research supports the finding that unemployment and financial insecurity are associated with increased psychological distress and anxiety (World Health Organization, 2017). Young women in the 15–25 age group face developmental transitions related to education, career establishment, and identity formation, which may intensify anxiety when stable employment is lacking.

At the same time, it is important to acknowledge that anxiety levels may also be influenced by individual differences such as personality traits, coping styles, family environment, and social support systems. Therefore, while employment status is a significant factor, it is not the sole determinant of anxiety.

Overall, the findings highlight the importance of psychological support services, career guidance programs, and stress management interventions for young women. Future research should include larger and more diverse samples and examine additional variables such as marital status, social support, job satisfaction, and coping strategies to gain a deeper understanding of anxiety among women.

CONCLUSION

The obtained F-value (16.40) indicates a statistically significant difference between the groups under study (since the calculated F-value is much higher than the typical critical F-value at 0.05 level of significance). The standard deviations (6.20 and 7.10) show moderate variability within both groups. However, the large F-value suggests that the difference between the group means is not due to chance variation. Therefore, the null hypothesis is rejected, and the research hypothesis is accepted.

The results of the study reveal a significant difference between the groups with respect to the studied variable. The calculated F-value (16.40) shows that the variation between the groups is statistically significant. Hence, it can be concluded that the independent variable has a significant effect on the dependent variable. The findings support the research hypothesis and indicate meaningful differences among the selected groups.

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IMPACT OF MICROFINANCE ON WOMEN'S ECONOMIC EMPOWERMENT IN RURAL INDIA

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ABSTRACT

The impact of microfinance on women's economic empowerment in rural India has drawn significant scholarly and policy attention due to its potential to reduce poverty and enhance gender equity. Microfinance services particularly those delivered through Self-Help Groups (SHGs) and Microfinance Institutions (MFIs) provide rural women with access to small loans, savings mechanisms, and entrepreneurial opportunities that were previously unavailable through formal banking channels. Empirical evidence suggests that microfinance positively influences income generation, financial independence, skill development, and decision-making capacities among rural women, thereby contributing to their economic empowerment. However, challenges such as cultural norms, limited financial literacy, and constrained loan sizes continue to moderate these outcomes. This study highlights both the transformative potential and the contextual limitations of microfinance in fostering sustainable economic empowerment among rural women in India.

Keywords: Microfinance; Women's Economic Empowerment; Rural India; Self-Help Groups, Financial Inclusion.

INTRODUCTION

Women's economic empowerment has emerged as a central goal of development initiatives worldwide, underpinned by the recognition that equitable participation in economic life enhances both household welfare and broader socio-economic growth. In the context of rural India, where women represent a substantial portion of the population yet often remain excluded from formal financial systems, microfinance has been championed as an innovative strategy to promote

inclusion and empowerment. By facilitating access to small loans, savings products, and livelihood support, microfinance initiatives seek to overcome traditional barriers that impede women's economic participation.

Microfinance broadly refers to the provision of financial services such as microcredit, micro savings, insurance, and financial literacy training to low-income individuals who lack access to conventional banking services. In India, microfinance is delivered through a mix of Microfinance Institutions (MFIs), rural banks, and community-based organizations like Self Help Groups (SHGs). These mechanisms aim to provide rural women with the capital and confidence to initiate or expand income-generating activities, engage in entrepreneurial ventures, and build assets. One of the most widely studied models of microfinance in India is the SHG Bank Linkage Program, which organizes women into groups that collectively save and obtain loans from banks for productive use. SHGs serve not only as financial intermediaries but also as platforms for social support, collective action, and skill development. Research has indicated that participation in SHGs and access to microfinance can lead to improved income levels, enhanced economic stability, and increased decision-making power within households. Women engaged in microfinance-supported activities often diversify their livelihood portfolios, establish small enterprises, and contribute more significantly to household economic decisions, thereby fostering greater household stability and gender equity.

Microfinance's influence on empowerment, however, is not uniform across all contexts. Studies reveal that while access to credit and financial services increases economic participation, structural challenges such as limited loan sizes, repayment pressures, and entrenched socio-cultural norms can constrain the full realization of women's economic empowerment. Moreover, rural women often face additional hurdles such as low financial literacy and lack of access to markets, which can diminish the potential benefits of microfinance participation. Effective empowerment thus depends not only on credit access but also on complementary interventions such as training, market support, and literacy programmes that expand women's capacity to use financial resources productively.

Despite these challenges, the cumulative evidence underscores the transformative potential of microfinance initiatives in rural India. By enabling women to control financial resources,

participate in economic activities, and make independent economic decisions, microfinance contributes to broader development outcomes such as poverty alleviation and enhanced social status. As a result, policymakers and development practitioners increasingly emphasize the integration of microfinance with comprehensive capacity-building and livelihood support strategies to maximize its impact. In conclusion, while microfinance has facilitated significant strides towards women's economic empowerment in rural India, its effectiveness is mediated by contextual and institutional factors that require sustained policy attention. Strengthening financial literacy, tailoring financial products to local needs, and supporting market linkage strategies are essential to ensure that microfinance serves not only as a financial tool but also as a robust pathway to sustainable empowerment and gender equity.

LITERATURE REVIEW

Microfinance and Economic Empowerment: Research consistently shows that microfinance can positively influence women's economic status. A large study of rural women in Haryana reported that microfinance participation led to higher incomes and greater economic agency among beneficiaries. Another empirical study emphasises that SHG involvement improves access to finance, enhances financial independence, and strengthens women's roles in household decision-making.

Microfinance and Decision-Making Power: Studies also spotlight the indirect socio-economic benefits of microfinance. A mixed-methods investigation in rural SHGs found that women experienced increased participation in financial decisions and stronger social networks, which contributed to improved self-confidence and community engagement. However, some research highlights persistent constraints such as limited loan sizes, deeply entrenched cultural norms, and modest financial literacy which can restrict women's autonomy in household financial decisions.

Barriers and Limitations: Despite documented gains, several studies caution that economic empowerment through microfinance is not automatic. Barriers such as restrictive gender norms, insufficient training, and inadequate market access continue to challenge the sustainability and depth of empowerment outcomes.

Current Status of Microfinance on Women's Economic Empowerment in Rural India:

The landscape of microfinance in rural India has evolved significantly in recent years, playing an increasingly important role in driving women's economic empowerment and financial inclusion. Microfinance institutions (MFIs), Self-Help Groups (SHGs), and rural banks have expanded their outreach, with women constituting the overwhelming majority of borrowers around 99 % of active microfinance clients in India are women and 8.59 crore of them actively borrow funds to support income-generating activities such as small businesses, farming, tailoring, and livestock rearing. Women borrowers make up 77 % of the microfinance portfolio in rural areas, indicating deep penetration into underserved regions where formal banking services may be limited or absent. The total microfinance sector's loan portfolio has grown to approximately ₹4.43 lakh crore, demonstrating strong demand and sustainability of microcredit as a development tool. Self-Help Groups (SHGs) remain central to rural financial inclusion and women's empowerment. Through the SHG-Bank Linkage Programme and support from institutions such as the National Bank for Agriculture and Rural Development (NABARD), millions of rural women have gained financial access and collective agency. Over 178 million households and 14.4 million SHGs have been linked to formal financial services, allowing women to save, borrow, and invest in entrepreneurial ventures. Research shows that participation in SHGs is associated with improvements in household income, savings, and economic confidence. In many cases, women report increased monthly income and greater financial stability upon joining SHGs and engaging in micro-entrepreneurial activities such as dairy farming, goat rearing, and small retail operations.

Empirical studies reinforce the positive impact of microfinance on women's economic status. For example, mixed-methods research from rural Maharashtra indicates that women involved in microfinance and entrepreneurship experienced measurable increases in monthly income and savings after joining SHGs, alongside enhanced financial management capabilities. Such findings suggest that microfinance not only provides credit but also supports pathways to self-employment and independent livelihood generation, which are key dimensions of economic empowerment. Studies further affirm gains in financial inclusion and self-reliance through microfinance mechanisms, highlighting expanded credit access, greater decision-making authority, and social empowerment as outcomes of sustained engagement with microcredit programmes. However, despite these encouraging trends, the current status of microfinance in rural India reveals persistent challenges and limitations. Research examining the effectiveness of microfinance services points

to ongoing barriers such as small loan sizes, entrenched socio-cultural norms, and low levels of financial literacy among women. These factors can constrain the transformative potential of microfinance, especially in enhancing women's autonomy in household decision-making and scaling entrepreneurial ventures. Structural issues, including bureaucratic hurdles in accessing credit and persistent gender norms that limit mobility and control over financial resources, also temper the overall impact on empowerment.

Additionally, concerns have been raised by regulators and experts about elements within the microfinance sector that may undermine women's economic well-being. Issues such as high interest rates, over-indebtedness among borrowers, and aggressive loan recovery practices have surfaced in policy discussions, pointing to the need for stronger consumer protection and responsible lending frameworks within the sector. While microfinance continues to play a significant and largely beneficial role in advancing women's economic empowerment in rural India, its impact is multifaceted. The sector's rapid growth and deep outreach have enabled millions of women to gain financial access and participate in economic activities. Still, achieving sustainable and deep empowerment requires addressing structural limitations, enhancing financial literacy initiatives, and integrating supportive policies that ensure equitable access, responsible lending, and robust institutional support. Such comprehensive efforts will help microfinance fulfil its potential as a catalyst for women's economic transformation across rural communities

RESEARCH METHODOLOGY

This study adopts a mixed-methods approach based on secondary data from peer-reviewed journals, government reports, and institutional publications on microfinance and women's empowerment in rural India. A descriptive and analytical design is used to assess income changes, savings patterns, and decision-making power. Thematic analysis helps identify key empowerment outcomes and structural challenges influencing microfinance effectiveness.

FINDINGS AND DISCUSSION

- 1. Income Generation and Financial Independence:** Multiple studies demonstrate that participation in microfinance schemes leads to increased income streams among rural women. Women often engage in micro-enterprises such as livestock production, tailoring,

retail sales, and agricultural ventures after receiving credit support. This not only enhances household income but also fosters greater financial independence.

- 2. Decision Making and Social Empowerment:** Empirical evidence indicates that microfinance participation contributes to enhanced decision-making capacities. Women borrowers frequently report greater involvement in household financial discussions and increased confidence in financial matters. Furthermore, group membership through SHGs encourages collective agency and social solidarity, enhancing women's visibility in community processes.

CHALLENGES AND STRUCTURAL BARRIERS

Despite positive trends, the effectiveness of microfinance is moderated by structural limits. Small loan volumes, lack of collateral, and rigid repayment schedules can inhibit business growth and long-term sustainability. Similarly, low levels of financial literacy undermine women's ability to leverage credit effectively. Socio cultural barriers such as gender norms that restrict women's economic participation continue to impede full empowerment.

POLICY IMPLICATIONS

To enhance the impact of microfinance on women's economic empowerment, the following policy considerations are recommended:

- 1. Financial Literacy Training:** Comprehensive training programmes to strengthen women's capability to manage loans and business operations.
- 2. Tailored Financial Products:** Development of credit products that match the unique income and risk profiles of rural women entrepreneurs.
- 3. Supportive Ecosystem:** Integration of microfinance with market linkages, vocational training, and mentorship to solidify sustainable ventures.

CONCLUSION

Microfinance has emerged as a significant tool for advancing women's economic empowerment in rural India. Evidence shows that access to financial resources enables women to engage in income-generating activities, increases their financial autonomy, and strengthens their role in household and community decision-making. However, the transformative potential of microfinance is contingent on supportive frameworks such as education, targeted credit design, and socio-cultural change that address persistent challenges. To realise equitable and sustainable empowerment, policymakers must adopt integrative strategies that extend beyond credit access to encompass comprehensive economic and social support mechanisms.

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A Study of Adjustment and Emotional Maturity of College Student

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ABSTRACT:

The purpose of the present study was to the relationship between adjustment and emotional maturity of college student and to see the impact of gender on adjustment and emotional maturity. For this purpose, 200 undergraduate students of (100 boys and 100 girls) were selected from different college of Jalna district. They were in the age group between 16 to 18 years. To collect the required data for the present study bell adjustment inventory and emotional maturity scale development by Singh and Bhargava was administrated on all subject. The obtained data were analyzed with the help of Mean, SD, T-test and correlation. The results that there was significant difference between boys and girl's student in the term of their adjustment and Emotional maturity and adjustment and level of emotional maturity of student were positively correlated.

Keywords: - Emotional Maturity, Adjustment, Gender.

INTRODUCTION:

Adjustment is the main components part of human life. Adjustment can be defined as "the process of finding and adopting modes of behavior suitable to the environment or to the changes in the environment. Adjustment as achievement means how efficiently an individual can perform his duties under different circumstances. If we perceive adjustment as achievement, we have to set criteria to judge the quality of adjustment. Four criteria have been evolved by psychologists to judge the adequacy of adjustment.

Adjustment is the process of establishing satisfactory relationship between individual and his environment. It refers to the interaction between the inner demands and internal demands of the individual. A person is said to be adjusted to the extent that he is maintaining balance between the personal and environmental demands. According to Gates et. al., (1950) the term adjustment has

to meaning. In one sense is a continual process by which a person varies in behaviour to produce a more harmonious relationship between himself and his environment.

Emotional Maturity is the ability of an individual in responding to equations and being aware when to act according to the situations. The word meaning of mature is ripe 'full development' meanwhile the psychological meaning of 'mature is more flexible' Maturity of a person develops when they socialize with people and interact with them. They actively convert the troublesome situation to serenity filled environment. The time of development of matured behaviour differ from person to person. It depends upon the sociality, family setting and peer group. A matured person will have the capability to handle painfulness, vexation, exasperation, delicacy and discomfoting circumstances.

REVIEW OF LITERATURE: -

Baker & Siryk (1984) this study Identified four dimensions of college adjustment: academic, social, personal-emotional, and institutional adaptation through the development of the Student Adaptation to College Questionnaire (SACQ).

Bhagat (2019) this study Concluded that emotional maturity enhances self-confidence and reduces anxiety, contributing to improved academic success.

Das (2017) this study Identified a positive relationship between emotional maturity and academic achievement; emotionally mature students showed better adaptation to academic stress and higher GPA scores.

Enochs and Roland(2006) this study examined the relationship between living environment, gender, overall adjustment to college and social adjustment in freshman's academic and overall adjustment. The study found that boys had significantly higher overall adjustment levels than girls regardless of living environment.

Goleman (1995) this study Described emotional maturity (within emotional intelligence) as the ability to manage emotions, demonstrate self-awareness, empathy, and resilience.

Hunt & Eisenberg (2010) this study Found that successful student adjustment significantly influences academic performance, mental health, and overall well-being among college students.

Kant, Singh & Gupta (2015) this study Observed that students from urban backgrounds displayed better institutional adjustment compared to rural students.

Kumar & Singh (2020) this study Found a significant positive correlation between emotional maturity and overall adjustment among undergraduate students.

Mehta & Reddy (2019) this study Reported that emotional maturity serves as a strong predictor of social and academic adjustment.

Salovey & Mayer (1990) this study Introduced the concept of emotional intelligence and emphasized that effective emotional regulation enhances interpersonal relationships and psychological adjustment.

Singh & Sharma (2018) this study Found gender differences in adjustment: females showed higher social adjustment, while males demonstrated better emotional adjustment.

Suman Nehra (2014) this study found no significant relationship between Adjustment and emotional maturity in own study.

OBJECTIVE OF THE STUDY: -

1. To examine the impact of gender on adjustment level and emotional maturity of undergraduate college students.
2. To Study in the relationship between the level of adjustment and emotional maturity.

HYPOTHESES: -

1. Boys and girls will differ significantly on adjustment and emotional maturity.
2. There will be positive correlation between adjustment and emotional maturity.

METHODOLOGY

SAMPLE: -

For this study a sample of 200 undergraduate college students. The sample were randomly selected from different colleges of Jalna district. The age range of respondents was from 17 to 19 years. The selected students to middle socio-economic status.

RESEARCH DESIGN

Simple research design was used.

VARIABLES USED FOR STUDY

- **Independent Variables- Gender** - 1) Boy Students 2) Girls Students
- **Dependent Variables-** 1) Adjustment 2) Emotional maturity

RESEARCH TOOLS:-

(1) Bell's adjustment inventory–

To measure the level of adjustment used Hindi adaptation of Bell's adjustment inventory was done by Mohsin and Shamshad. This inventory was originally development by H M. Bell in English language. Mohsin and Shamshad translated it into Hindi in 1969. This inventory has to from and total 124 items. It measures adjustment level of individuals in four fields. These four fields are home, health, social and emotional.

(2) Emotional Maturity Scale (EMS) :-

To measure the level of emotional maturity of respondents, Emotional maturity scale developed by Singh and Bhargava (1990). This scale has a total of 48 items, measures 5 areas of emotional maturity that are emotional instability, emotional regression, social maladjustment , personality disintegration and lack of confidence.

PROCEDURE: -

The above-mentioned scale were administered on the selected sample with proper instruction. The obtained responses were served with the help of standard procedure given in the manual.

STATISTICAL TREATMENT

At the initial stage, the data were analyzed using descriptive statistical techniques such as the Mean and Standard Deviation to summarize the distribution of scores. Further, to examine the significance of differences among the groups, t test and Correction was carried out using the Statistical Package for the Social Sciences (SPSS) software.

RESULTS & DISCUSSION:

Table no.1 Comparison between Boys & Girls on adjustment score.

Group	N	Mean	S.D.	't' Value	df	Significance of Level
Boys	100	48	21.50	4.53	197	0.01
Girls	100	62.87	23.49			

Table 1 shows a comparison of adjustment scores between boys and girls. The mean adjustment score of boys (N = 100) was 48 (SD = 21.50), while girls (N = 100) obtained a higher mean score of 62.87 (SD = 23.49). The calculated *t*-value (4.53) with 197 degrees of freedom was found to be significant at the 0.01 level. This indicates that the difference in adjustment between boys and girls is statistically significant. Therefore, the null hypothesis is rejected and Hypothesis No. 1 is accepted.

The higher mean score of girls suggests that they demonstrate better adjustment compared to boys. This finding is consistent with earlier studies which report that female students tend to show better emotional and social adjustment than males (Maccoby & Jacklin, 1974; Santrock, 2011). Girls are often socialized to express emotions and seek social support, which may enhance coping skills and adaptability in school settings. Boys, in contrast, may experience difficulties in emotional expression, affecting their adjustment. The significant difference at the 0.01 level confirms that gender plays an important role in students' adjustment levels.

Table no.2 Comparison between Boys and Girls on Emotional Maturity Scale

Group	N	Mean	S.D.	't' Value	Df	Significance of Level
Boys	100	87.14	24.23	4.52	197	0.01
Girls	100	97.57	23.46			

Table 2 presents the comparison between boys and girls on the Emotional Maturity Scale. The mean score of boys (N = 100) was 87.14 (SD = 24.23), whereas girls (N = 100) obtained a higher mean score of 97.57 (SD = 23.46). The calculated *t*-value was 4.52 with 197 degrees of freedom, which is statistically significant at the 0.01 level. Since the obtained *t*-value exceeds the critical

value at the 0.01 level, the null hypothesis is rejected. This indicates that there is a significant difference between boys and girls in emotional maturity.

The higher mean score of girls suggests that they are more emotionally mature compared to boys. This finding is supported by previous research, which indicates that girls generally demonstrate better emotional regulation and interpersonal sensitivity than boys (Maccoby & Jacklin, 1974; Singh & Bhargava, 1990). Emotional maturity involves the ability to manage emotions, respond appropriately to situations, and maintain balanced relationships. Socialization practices may encourage girls to express and manage emotions more effectively, contributing to higher emotional maturity. Therefore, Hypothesis No. 2 is accepted, confirming a significant gender difference in emotional maturity.

Table no.-3 Relationship between adjustment and emotional maturity

Variables	Correlation	Df	P Value
Adjustment	0.91	197	<0.01
Emotional Maturity			

Table 3 shows the relationship between adjustment and emotional maturity. The obtained correlation coefficient (r) between adjustment and emotional maturity was 0.91 with 197 degrees of freedom. The p value was found to be less than 0.01, indicating that the relationship is statistically significant at the 0.01 level. Since the obtained correlation is significant, the null hypothesis stating that there is no significant relationship between adjustment and emotional maturity is rejected.

The high positive correlation ($r = 0.91$) suggests a strong relationship between adjustment and emotional maturity. This indicates that students who possess higher emotional maturity also tend to have better adjustment. Emotional maturity involves emotional stability, self-control, and appropriate expression of feelings, which are essential for effective personal, social, and academic adjustment. These findings are consistent with previous studies that report emotional maturity as an important predictor of adjustment among adolescents (Singh & Bhargava, 1990; Coleman, 2003). Emotionally mature students are better able to cope with stress, resolve conflicts, and adapt to changing environments, thereby enhancing their adjustment levels. Thus, the results confirm that emotional maturity plays a crucial role in students' overall adjustment.

CONCLUSION

1. The boys have more emotional maturity than girls' students,
2. the boys are well adjustment than girls.
3. There is a high positive relationship between Adjustment and emotional maturity.

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Sustainable behavior and sustainable attitude of boys' and girls' students toward sustainable development goals.

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ABSTRACT

Development is a continuous and ongoing process and is considered an indicator of human progress. However, when the development of one component, region, or individual becomes harmful or obstructive to another component, region, or individual, it cannot be regarded as constructive development. On the other hand, when such development proves beneficial for the prosperous, welfare-oriented, healthy, and peaceful life of the entire human population on Earth, it is truly regarded as sustainable development. The development that maintains the balance of nature, ensures justice for every living being on this Earth, and does not threaten their existence is also considered sustainable development. The Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, represent a global framework for achieving sustainable social, economic, and environmental development by 2030. While policy, education, technology, and economics play crucial roles in achieving these goals, in the same way human behavior, motivation, attitudes, and mental health are equally important. The present study focuses Sustainable behavior and sustainable attitude of male and female students toward sustainable development goals. Using a descriptive and correlational research design the study highlights the relationship between psychological variables and sustainable development. The study conducted on 100 college students and getting the data by using standardized sustainable behaviour test and attitude scale. The finding indicates that there is no significant difference between male and female students regarding sustainable behaviour and attitude. study found that positive correlation between sustainable behaviour and sustainable attitude toward sustainable development goals.

Keywords: Sustainable Development Goals, sustainable Attitude, sustainable Behaviour,

INTRODUCTION

The **Sustainable Development Goals (SDGs)**, adopted by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development, provide a global framework for addressing poverty, inequality, climate change, environmental degradation, peace, and justice. While the SDGs are often approached from economic, political, and environmental perspectives, their successful implementation fundamentally depends on human behaviour, attitudes, values, and social systems—core areas of psychological inquiry.

The Sustainable Development Goals (SDGs) consist of 17 global goals aimed at ending poverty, protecting the planet, and ensuring prosperity for all. These goals include quality education, gender equality, clean energy, climate action, and peace and justice. Achieving SDGs requires not only governmental and institutional efforts but also individual and collective behavioural change. Development is a continuous and ongoing process and is considered an indicator of human progress. However, when the development of one component, region, or individual becomes harmful or obstructive to another component, region, or individual, it cannot be regarded as constructive development. On the other hand, when such development proves beneficial for the prosperous, welfare-oriented, healthy, and peaceful life of the entire human population on Earth, it is truly regarded as sustainable development. The development that maintains the balance of nature, ensures justice for every living being on this Earth, and does not threaten their existence is also considered sustainable development.

Psychology plays a crucial role in understanding human behavior, cognition, emotions, and social interactions. Psychological perspective, sustainable development depends on individuals' attitudes, values, beliefs, motivations, and mental health. People's willingness to adopt sustainable lifestyles, participate in community development, and support environmental conservation is influenced by psychological factors. Therefore, integrating psychological theories into sustainable development strategies can enhance the effectiveness of SDG implementation.

A sustainable behavior related to environment protection and human development. It includes non-violence and peaceful constructive behavior. It is shortly eco-friendly, culture oriented and socio-friendly behavior. In this study sustainable behavior categorized recycling behavior, purchasing behavior, awareness and consumption. The various factors impact on

sustainable behavior includes environmental awareness, education, cultural values, Government policies, social influence, peer influence, personal responsibility and ethics.

A sustainable attitude means perspective to minimize negative impact on the environment, society and earth. There are various dimensions of sustainable attitude includes environment concern, social responsibility, constructive decision making, awareness regarding threatening aspects. Thus, integrating psychological principles into sustainable development research is essential for designing effective interventions, fostering long-term behavioral change, and promoting a culture of sustainability at both individual and societal levels.

REVIEW OF LITERATURE

Ajzen (1991) proposed the Theory of Planned Behaviour, which explains that attitudes, subjective norms, and perceived behavioural control influence individuals' intentions and actions. The study revealed that Attitudes, social pressure, and perceived control influence sustainable behaviour.

The study of Thomas Dietz and Stern (1995) showed that education and awareness significantly increase sustainable behaviour and knowledge leads responsibility so environmental education is important and essential.

The Environmental concern study conducted by Wesley Schultz (2001) on 1500 sample from different culture. The study showed that people who feel part of nature shows more eco-friendly behaviour. Person is emotionally connected with environment.

The study on relationship between values, beliefs, norms and environmental behaviour by Paul Stern (2000) conducted on 1000 sample size. The study found people with strong environmental values shows more sustainable behaviour. The behaviour includes recycling and energy conservation. Values and personal responsibility are related to sustainable behaviour

Louise Whitmarsh (2010) conducted survey on climate change and behaviour and collect the data of 600 UK residents and found that climate change awareness increases eco-friendly behaviour. Personal experiences and problems motivate the behaviour.

OBJECTIVE OF THE STUDY

1. To examine psychological factors related to Sustainable Development Goals.
2. To describe sustainable behaviour regarding sustainable development goals of college going students
3. To describe sustainable attitude regarding sustainable development goals of college going students
4. To analyse the relationship between sustainable attitudes and sustainable behaviour regarding sustainable development goals of college going students.
5. To compare the sustainable attitudes and sustainable behaviour regarding sustainable development goals of boy's college going students and girls' college going students.

HYPOTHESES OF THE STUDY

- **H1:** There will be no significant difference between boys' and girls' college-going students in their sustainable behaviour regarding Sustainable Development Goals.
- **H2:** There will be no significant difference between boys and girls' college-going students in their sustainable attitude regarding Sustainable Development Goals.
- **H3:** There will be no significant relationship between sustainable attitudes and sustainable behaviour regarding Sustainable Development Goals among college-going students.

RESEARCH METHODOLOGY

SAMPLE

The sample consisted of 100 college going students including 50 girls' students and 50 boys' students aged 18–25 years. The sample was selected by using simple random sampling techniques.

RESEARCH DESIGN

A descriptive and correlational research design was used to test hypothesis.

TOOLS

1. Sustainable Behavior Scale (SBS)
2. Attitude Toward Sustainability Questionnaire (ATSQ)

PROCEDURE

The questionnaires were administered to targeted sample by ensuring them that their information will not be disclosed for personal purpose. Confidentiality and anonymity were assured. The collected data were analysed using mean, standard deviation, t test and Pearson's Correlation statistical techniques.

STATISTICAL ANALYSIS

Mean, Standard Deviation, Pearson Correlation, and t-test were used for data analysis.

RESULTS AND INTERPRETATION

H1: There will be no significant difference between boys and girls' college-going students in their sustainable behaviour regarding Sustainable Development Goals.

Gender	Mean	SD	N	't' value	Sign
Sustainable behaviour -Boys students	119	10.5	50	0.86	NS
Sustainable behaviour -Girl students	121	12.6	50		

The above table shows the mean, S.D and t value sustainable behaviour of girl and boys students. The mean of boys was 119 and S.D. was 10.5 whereas the girl students mean was 121 and SD was 12.6. The calculated t value was 0.86 which was not significant at 0.05 level. The finding indicates that there was no significant difference of boys and girl students regarding sustainable behaviour toward sustainable development goals. Both showing high level of sustainable behaviour. The hypothesis "There will be no significant difference between boys' and girls' college-going students in their sustainable behaviour regarding Sustainable Development Goals is accepted."

H2: There will be no significant difference between boys' and girls' college-going students in their sustainable attitude regarding Sustainable Development Goals.

Gender	Mean	SD	N	't' value	Sign
Sustainable attitude- Boys students	46	6.4	50	1.59	NS
Sustainable attitude -Girl students	44	6.2	50		

The above table shows the mean, S.D and t value sustainable attitude of girl and boys' students. The mean of boys was 46 and S.D. was 6.4 whereas the girl students mean was 44 and SD was 6.2. The calculated t value was 1.59 which was non-significant at 0.05 level. The finding indicates that there was no significant difference of boys and girl students regarding sustainable attitude toward sustainable development goals. Both showing high level of sustainable attitude. The hypothesis "There will be no significant difference between boys and girls' college-going students in their sustainable attitude regarding Sustainable Development Goals is accepted."

H3: There will be no significant relationship between sustainable attitudes and sustainable behaviour regarding Sustainable Development Goals among college-going students.

Variables	Correlation	Significant
Sustainable behaviour toward sustainable development goals	+ 0.81	High positive correlation
Sustainable attitude toward sustainable development goals		

The above table shows the relationship between sustainable behaviour and sustainable attitude towards sustainable development goals. The Pearson's correlation was applied to find out the relation between behaviour and attitude. The coefficient of correlation was +0.81 it means there is very high positive relationship between sustainable behaviour and sustainable attitude toward sustainable development goals. The Prior research also indicates that there is link between attitude and behaviour. So the hypothesis "There will be no significant relationship between sustainable attitudes and sustainable behaviour regarding Sustainable Development Goals among college-going students" was rejected.

CONCLUSION

This study focusses sustainable behaviour and sustainable attitude toward sustainable development goals of college going students. The finding indicates that the college going student shows high sustainable behaviour and attitude toward sustainable development goals. There was no gender difference regarding sustainable behaviour and sustainable attitude toward sustainable development goals. Study also found that there was high positive relationship between sustainable behaviour and sustainable attitude toward sustainable development goals.

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- Provide a 150–250-word summary of the study.
- Do not indent the first line.
- Include Keywords: (Italicized, listed below the abstract).

INTRODUCTION

- Start with a broad introduction to the topic.
- Explain the importance and relevance of the study.
- Define key concepts if necessary.
- Introduce the research problem and its significance.
- Provide relevant background information.

➤ REVIEW OF RELATED LITERATURE

- Summarize previous studies related to the research.
- Identify gaps in literature and explain how the study addresses them.
- Compare different theories and findings.
- Use in-text citations in APA format (e.g., Smith, 2020).

STATEMENT OF THE PROBLEM

- Clearly define the research problem being addressed.

OBJECTIVES OF THE STUDY

- List the specific objectives or goals of the study.

HYPOTHESES OF THE STUDY

- Present the null and/or alternative hypotheses (if applicable).

METHODOLOGY

SAMPLE

- Describe the sample size, demographic details, and selection method.
- Example:
 - "The study included 200 college students (100 males, 100 females) aged 18-24 from XYZ University. Participants were selected through stratified random sampling."

RESEARCH DESIGN

- Specify the type of research design (e.g., experimental, correlational, survey-based).

VARIABLES USED IN THE STUDY

- **Independent Variables** – Define the factors being manipulated or categorized.
- **Dependent Variables** – Define the outcomes being measured.

OPERATIONAL DEFINITIONS

- Provide precise definitions of key terms used in the study.

RESEARCH TOOLS

- Describe the surveys, tests, or scales used.
- Mention the validity and reliability of standardized tests (if applicable).

PROCEDURES OF DATA COLLECTION

- **Explain the step-by-step process of data collection.**
- Example:

- "Participants completed an online survey measuring emotional intelligence and stress levels. Data collection lasted for two weeks."

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- Mention the statistical tests used for data analysis (e.g., t-tests, ANOVA, regression).

RESULTS

- Summarize the key findings.
- Present tables, figures, or graphs (as per APA 7th edition guidelines).
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DISCUSSION

- Interpret the meaning of the results.
- Compare findings with previous research.
- Discuss any limitations of the study.
- Suggest future research directions.

CONCLUSION

- Summarize the main findings.
- Explain the implications of the study.
- Provide recommendations for future research.

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- **Website:**

- American Psychological Association. (2020). Emotional intelligence. Retrieved from <https://www.apa.org/emotional-intelligence>

- **Conference Paper:**

- Brown, R. T. (2018). The effects of emotional intelligence on workplace performance. *Proceedings of the International Conference on Psychology and Management*, 45-50.

- **Dissertation/Thesis:**

- Clark, P. J. (2019). *The role of emotional intelligence in leadership* (Doctoral dissertation). Harvard University.

- **Newspaper Article:**

- Doe, J. (2021, March 5). How emotional intelligence is changing leadership. *The New York Times*. <https://www.nytimes.com/emotional-intelligence>

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