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Effects of Mortality Salience Caused by Climate Change on Generalised Anxiety, Hopelessness, and the Mediating Effects of Resilience

Dr Meghna Basu Thakur* & Ms. Shweta Mishra**

Abstract

Mortality salience refers to the awareness that death is unavoidable. The term originates from Terror Management Theory, and the awareness of death is said to trigger an existential crisis in individuals (Whitley et al., 2011). With the rise of climate change and unpredictable weather causing natural destruction and displacement worldwide, it is reasonable to suggest that climate change has increased individuals' mortality salience. Previous research has highlighted the relationship between mortality salience and anxiety (Gordillo et al., 2017), feelings of existential threat (Whitley et al., 2011), and emotional defensiveness (Huang et al., 2021). However, research has not yet examined whether the life skill of resilience can buffer these effects arising from the awareness of one's mortality. The current study focuses on mortality salience caused by climate change and its impact on participants' generalised anxiety and hopelessness. It also investigates whether resilient participants can cope more effectively by taking proactive measures to address the climate crisis. The sample size was 190, with responses collected through a convenience sampling method via Google Forms. The participants were young adults aged 18 to 25 years old. Data analysis techniques included multiple regression and mediation analysis of the three variables. It was found that both concern about climate change and death anxiety influenced participants' generalised anxiety and feelings of helplessness. Resilience was identified as a mediator in the effects of death anxiety due to climate change concerns on both generalised anxiety and helplessness. This suggests that, when faced with mortality salience induced by increasing climate change, young adults cope more effectively when equipped with resilience skills. The study's findings are discussed in detail along with the literature review in the paper.

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Keywords: Mortality Salience, Generalised Anxiety, Hopelessness, Resilience

Introduction

In the current era, concerns about climate change have a significant impact on people, particularly young adults. Both climate change and mental health issues have become significant problems in today's generation. While established research exists on the impact of climate change on physical health, there is a lesser focus on its effects on psychological well-being.

Climate change concerns have introduced a new phenomenon called 'climate anxiety' or 'eco-anxiety'. This is understood as the constant fear of environmental catastrophe looming over humanity due to climate change (Clayton et al., 2017). With the increase in climate change and unpredictable weather causing natural destruction and displacement worldwide, it is reasonable to say that climate change has heightened individuals' mortality salience. Previous research has highlighted the link between mortality salience and anxiety (Gordillo et al., 2017), feelings of existential threat (Whitley et al., 2011), and emotional defensiveness (Huang et al., 2021).

A study by Ogunbode et al. (2021) found that individuals experience negative emotional responses to climate change-related anxiety, which is positively associated with insomnia. Another study by Kabir (2018) reported that people affected by climate change experienced psychological stress.

Another interesting variable related to death anxiety is mortality salience. This term, originating from Terror Management Theory, refers to the awareness that death is unavoidable. It is said that this awareness can lead to an existential crisis in individuals (Whitley et al., 2011).

Climate anxiety is a unique phenomenon that triggers feelings of death anxiety not just in individuals who face it firsthand but also in those who have access to climate-change information (Pihkala, 2019; Whitmarsh & Capstick, 2018). Research conducted by Searle and Gow (2010) found that individuals concerned about climate change also reported symptoms of depression, anxiety, and stress; this study was carried out among Australians.

Anxiety disorders are characterised as conditions that cause excessive nervousness, apprehension, fear, and worry (Spielberger, 2013). The experience varies between individuals, but when faced with stressful situations, people often experience physical symptoms such as a rapid heartbeat and difficulty breathing (Leary & Kowalski, 1997).

Resilience has been extensively studied over the past four decades, as researchers have observed that individuals can cope and adapt despite the adversity they face (Ahern, Ark, & Byers, 2008). The most common definitions of resilience emphasise the individual's capacity to successfully adapt to circumstances in the face of stress, adversity, or disturbance (Masten & Obradović, 2006). A resilient individual is someone who has been tested with challenges yet continues to demonstrate healthy responses to psychological and physiological stress (McEwen, 2003).

Ward, Muller, Tsourtos, et al. (2011) have developed the psycho-social interactive model of resilience. The model involves the interaction between individual resilience factors (coping, confidence, self-efficacy, and self-esteem) and external resilience factors (financial security, time management, and family support) in promoting resilience.

However, research has not explored whether the life skill of resilience can buffer these effects caused by awareness of death. The current research focuses on mortality salience triggered by climate change and its impact on participants' generalised anxiety and hopelessness. It also examines whether resilient participants can cope better by taking proactive measures against the climate change crisis.

Method

Participants

The sample size consisted of 190 participants, and responses were collected using a convenient sampling method via Google Forms. The demographics consisted of young adults aged 18 to 25.

Assessment and Measures

The Connor-Davidson Resilience Scale: This scale was developed by Connor & Davidson (2003) to assess resilience in participants. Cronbach's alpha for the full scale was found to be 0.89, and the test-retest reliability of the scale is 0.87. The scale meets the sufficient criteria for convergent and discriminant validity.

Climate Change Attitude Survey (CCAS): The Climate Change Attitude Survey comprises 15 attitudinal items designed to assess an individual's beliefs and intentions regarding the environment, with a particular focus on climate change. (Cronbach's α - .72). Responses are measured on a 5-point Likert scale, where 1 is 'Strongly Disagree' and 5 is 'Strongly Agree'. Items 9, 12, 13, 14, and 15 were reverse-scored, and the total score was calculated.

Templer's Death Anxiety Scale (DAS): This instrument measures the level of death anxiety a person experiences. It contains 15 items that respondents rate as true or false (Pearson's $r = .83$). The original response format is true/false. In scoring, six items are reverse scored to reduce response bias, with higher scores indicating greater death anxiety.

Beck Anxiety Inventory (BAI): This scale was used to assess anxiety symptoms (Beck, Epstein, Brown, & Steer, 1988). The questionnaire includes specific behavioural tendencies that participants may have experienced, and they had to report the extent to which they did, ranging from 0 (Not at all) to 3 (Severely). The higher the score, the more anxiety was reported. Reliability studies yielded a coefficient alpha of 0.92. The test-retest reliability was reported as 0.75. The convergent validity ranged from 0.51 to 0.25 (Beck et al., 1988).

Beck's Hopelessness Inventory (BHI): This scale was used to measure participants' level of hopelessness (Beck, 1974). Its validity and reliability were evaluated by Bouvar et al. (1992), and it was found to be strong and acceptable.

Data Analysis

SPSS software was used for data analysis. The results are indicated below:

Results

Table 1: Descriptive Statistics

	N	Mean	Std Dev	Variance	Sum
Death Anxiety	198	9.69	1.56	2.44	1919.00
Climate Change Concern	198	55.81	4.68	21.92	11050.00
Resilience	198	19.74	5.32	28.25	3909.00
Hopelessness	198	11.18	2.43	5.92	2214.00
General Anxiety	198	19.72	5.22	27.23	3905.00

Table 2: Regression Analysis between Death Anxiety, Climate Change Concern, Resilience, Hopelessness, and General Anxiety

	Hopelessness (A)	General Anxiety Symptoms (B)	Resilience (C)
Multiple R	0.422*	0.422*	0.384*
R square	0.178	0.178	0.147
Adjusted R	0.170	0.170	0.138
F	21.150**	21.150**	16.823***

* Predictors: (Constant), Death Anxiety, Climate Change Concern, Resilience

Study A = Dependent Variable = Beck's Hopelessness Scale

Study B = Dependent Variable = Beck's Anxiety Scale

Study C = Predictor = Climate Change Concern, Dependent Variable = Resilience

Table 3:
Coefficient and t-test details of the Regression Analyses Above

Coefficients*					
	Unstandardized B	Coefficient Std. Error	Standardised Coefficient Beta	t	Significance
Constant	33.282	2.126		15.652	<0.001
Climate Change	0.186	0.034	0.366	5.511	<0.001
Death Anxiety	0.296	0.132	0.149	3.245	0.026
Resilience	-0.7	.03	-0.15	-2.13	<0.001
Constant	33.282	2.126		15.652	<0.001
Climate Change	0.17	0.08	0.16	2.30	0.022
Death Anxiety	0.433	0.094	0.311	4.602	<0.001
Resilience	-.34	.07	-.34	-5.12	<0.001

Table 4: Mediational Analysis

	SODEL Z-VALUE	p-value
Mediation Effects of Resilience on Climate Change with its effects on Hopelessness	-3.92841837	0.00340691
Mediation Effects of Resilience on Climate change with its effects on General Anxiety	-3.56163988	0.01041793

Table 1 presents the descriptive statistics of the variables—Climate Change Concern, Death Anxiety, Resilience, Hopelessness, and General Anxiety—of the participants in the study.

Study (A) examined the effects of climate change concern, death anxiety, and resilience on hopelessness. As shown in Table 2, the multiple R-value was significant, indicating that the predictors were important in predicting changes in participants' feelings of hopelessness. Table 3 shows that both Climate Change Concern and Death Anxiety positively predict Hopelessness; this means that increased climate change concern and death anxiety raise feelings of hopelessness in participants. Interestingly, Resilience negatively predicts hopelessness, suggesting that more resilient participants are better able to counteract feelings of hopelessness.

Study (B) examined the effects of climate change concern, death anxiety, and resilience on General Anxiety. As seen in Table 2, the multiple R-value was found to be significant, indicating that the predictors were important in predicting changes in the participants' feelings of anxiety. Table 3 shows that both Climate Change Concerns and Death Anxiety positively predict anxiety; this means that both climate change concerns and death anxiety increase or induce symptoms of generalised anxiety in participants.

Interestingly, Resilience was found to negatively predict hopelessness, indicating that resilient participants were better able to offset the anxiety faced by them.

To establish a mediational link between Resilience, Climate Change Concerns, Hopelessness, and General Anxiety, a regression analysis was conducted between the Climate Change Concerns questionnaire and the Resilience questionnaire. Table 2 shows that a significant R-value was found

between these two scales. This suggests that people concerned about the climate were better able to counteract death anxiety when they also scored high on resilience. Therefore, they could be more proactive in managing the unsettling feelings associated with climate change-induced mortality salience if they possessed resilience.

Since the regression analysis was found to be significant, a mediation analysis was conducted to understand whether resilience helps in reducing feelings of hopelessness and general anxiety caused by climate change concerns. The findings are shown in Table 4. Resilience was found to be negatively related to both hopelessness and general anxiety related to climate change concerns. This suggests that resilient individuals are better at managing feelings of existential dread and anxiety symptoms triggered by worsening climate conditions and are more proactive in coping with these unsettling feelings.

Discussion

The expectations of the study were met as described above. The findings can be understood in light of past research that has shown climate change-induced mortality salience can trigger feelings of anxiety, depression, doomsday beliefs, and changes in subjective well-being (Ogunbode et al, 2021; Kabir, 2018).

Climate anxiety is a unique phenomenon that triggers feelings of death anxiety not just in individuals who directly experience it but also in those who have access to climate change information (Pihkala, 2019; Whitmarsh & Capstick, 2018). Research conducted by Searle and Gow (2010) found that individuals concerned about climate change also reported symptoms of depression, anxiety, and stress; this study was conducted among Australians.

The current study focused on mortality salience caused by climate change and its effect on participants' generalised anxiety and hopelessness. It also examined whether resilient participants are better able to cope by taking proactive measures in addressing the climate crisis. The findings suggest that when mortality salience is triggered by increasing climate change, young adults cope more effectively if they possess resilience as a key life skill. This is a valuable finding, especially given the rising concerns over climate change among young adults. If they are trained in resilience and taught how to actively confront climate issues instead of succumbing to hopelessness and anxiety, it can be very beneficial.

Previous research has established a strong link between resilience and the use of active coping mechanisms (Charney, 2004). This could be because resilient people tend to be more proactive, adapt to challenging situations, and actively seek solutions to their problems. Resilient individuals also tend to be more emotionally intelligent (Charney, 2004), which can help explain why they may be better equipped to navigate the complex negative emotions that arise during challenging times. Resilience is also interconnected with the locus of control, and researchers have found that having an internal locus of control predicts the use of adaptive coping mechanisms and comprehensive problem-solving (Rutter, 2006). Self-control and self-management behaviours are associated with committing to one's goals, devising attainable plans, and following through until completion. All of these factors are also correlated with resilience and help to explain the findings of the study (Armstrong et al., 2011).

Implications and Limitations

The study's main advantage is that it emphasises the positive aspect of human coping. Since resilience can be learned and adapted, it offers a pathway to better coping overall. This study is significant because it shows that resilient individuals tend to cope and adapt more effectively in ambiguous situations where they lack control over the external environment.

This study did not use in-person administration of questionnaires for participants. It was conducted through the online circulation of forms, where participants filled them out in various environments and at different times, which could have led to biased responses.

This study used convenient and purposive sampling, which are non-probability sampling methods and reduced the external validity of the study. This study also only used responses from 109 participants; future studies with larger samples need to be conducted to provide more evidence and more accurate results that better reflect the population.

Conclusion

We can conclude that climate change concerns and death anxiety triggers can also affect individuals' psychological well-being. However, on a positive note, the study also shows that resilience helps people adapt not only to controllable situations but also to natural ambiguities.

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Skill Development as the backbone of *Atmanirbharta*: an Overview

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Abstract

Atmanirbharta is the need of the hour and a national mission to empower India's youth to be self-reliant, ensuring they are prepared for a sustainable future in the post-pandemic era. Success depends on how we all come forward for the cause and work together in a mission mode. Therefore, this presentation aims to critically discuss the current status of skill development, with particular reference to the Indian context, in enabling the youth with skills to promote self-reliance. In doing so, the authors examine skill development in India. The objectives of this study are (1) to analyse the concepts of skill, reskill, and upskill, and (2) to explore how skill development serves as the backbone of atmanirbharta by analysing various initiatives by the Government of India. The data collection and analysis involved critically examining the results of multiple studies conducted in this area, along with analysing newspapers, educational policies, public survey results, and literature related to trends and developments in skill development.

Keywords: *Atmanirbharta, Life Skills, Skill development, Skill, Reskill & Up-skill*

Introduction

Life skills are strategic enablers for achieving a sustainable future for 'People' and *atmanirbharta* (self-reliance), which can only be attained through life skills. When we analyse the history of India, it was a land rich in talents and skills. Indian culture and ethos both promote skill development among the people. The traditions of celebrating skills like Vijayadashami, Akshaya Tritiya, and Vishvakarma Puja, among others, symbolise the worship of skills and vocational tools. We know that, over the centuries, India has had a great reverence and regard for skilled professions like carpenters, potters,

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metal workers, sanitation workers, horticulture workers, and weavers.

It is due to long periods of slavery that the importance of skills in our social and education system was diluted. In India, education is more focused on producing graduates than on skill development. This gradually undermined academia and the country's growth. Therefore, the present study aims to explore the need and importance of skills development for self-reliance.

Methodology of the Study

This presentation aims to critically discuss the current state of skill development with a special focus on the Indian context, emphasising how it empowers learners to become self-reliant. In doing so, the authors examine skill development in India.

The objectives of this study are:

- to analyse the concepts of skill, reskilling, and upskilling, and
- to explore how skill development underpins 'atmanirbharta' by evaluating various initiatives by the Government of India

Data collection and analysis involved critically reviewing the results of multiple studies in this area, as well as analysing newspapers, educational policies, public survey data, and literature related to trends and developments in skill development.

Skill, Reskill & Upskill: Mantra for 'Atmanirbharta'

Acknowledging the importance of skill development, Prime Minister Narendra Modi encouraged stakeholders to continuously "skill, reskill and upskill" to achieve the goal of "*Atmanirbhar Bharat*" (a self-reliant India). He emphasised that providing innovative and skilled manpower solutions to the world should be at the core of the strategy for skilling our youth. The idea behind this is that while education tells us what to do, skills enable us to apply knowledge in real-life situations. The basic differences between reskilling and upskilling, and how these techniques can help any organisation better prepare for the post-pandemic era, must be discussed in detail.

- Upskilling is the process of acquiring new skills or training the workforce to enhance their existing skills and capabilities.
- Reskilling is the process of acquiring new skills to perform a different job or training people to do a different job than the one they currently have.

Employers can address what is expected to become a persistent skills shortage using either of these two effective strategies. Searching for individuals with “adjacent talents”—those that are close to the new skills needed by the organisation—means reskilling. It offers a lateral learning opportunity that can support the extensive retraining required by workers in the modern workforce. According to the World Economic Forum, technological growth will require reskilling for 50% of all workers by 2025. (World Economic Forum, 2020). On the other hand, a culture of upskilling involves educating staff members in new, advanced skills to close talent gaps. It entails keeping the workforce engaged in continual skill development while also supporting their career growth.

Along with skill development, it is also crucial for learners to possess soft skills. This includes knowing how to plan for their future entrepreneurship, how to establish a start-up, how to complete necessary forms, and how to register a new company. To promote the spirit of self-employment and skill enhancement, the Government of India has introduced various schemes and initiatives like Mudra Yojana, Start-up India, and Stand-up India.

Various Initiatives taken for Skill Development

- **Pradhan Mantri Kaushal Vikas Yojana:** The flagship scheme was launched in 2015 to provide short-term training, skilling through ITIs, and under the apprenticeship scheme. Since then, the government has trained over 10 million youth under this initiative
- **SANKALP and STRIVE:** The SANKALP programme, which focuses on the district-level skilling ecosystem, and the STRIVE project, which aims to improve the performance of ITIs, are other significant skilling interventions
- **Initiatives from Several Ministries:** Nearly 40 skill development programmes are carried out by 20 central ministries and departments. The Ministry of Skill Development and Entrepreneurship accounts for about 55% of the skilling efforts. Initiatives from all ministries have trained nearly four crore people through various traditional skills programmes since 2015
- **Mandatory CSR Expenditure in Skilling:** Since the implementation of mandatory CSR expenditure in skilling, companies in India have invested over ₹100,000 crores in various social projects. Of these, about ₹6,877 crores were allocated to skilling and livelihood enhancement initiatives. Maharashtra, Tamil Nadu, Odisha, Karnataka, and Gujarat were the five leading recipient states.

- **TEJAS Initiative for Skilling:** Recently, TEJAS (Training for Emirates Jobs and Skills), a Skill India International Project to train overseas Indians, was launched at the Dubai Expo 2020. The project aims at skilling, certification, and overseas employment for Indians and creating pathways to enable the Indian workforce to meet skill and market requirements in the UAE

Skills Development as the backbone of *Atmanirbharta*

Various studies have reported an urgent need to equip present-day learners with workplace skills (Rotherham & Willingham, 2009; National Research Council, 2012). It is a fact that, across the globe, along with overall personality development, preparing and enabling learners to be career- and job-oriented is a significant concern of educational systems. To achieve this, life skills development prepares learners to meet the challenges of the modern workforce with the ability to think critically and creatively, collaborate with others, take initiative, and maximise technological skills. If students lack these essential skills for the labour market, the responsibility lies with educators for not teaching these skills to graduates (Scott, 2017). These skills enable youth to solve problems creatively and critically, assume leadership roles, work effectively with multicultural groups, adapt easily to changing situations, communicate clearly and efficiently, and practice social skills. In this regard, skills and abilities such as creativity, communication, digital skills, problem-solving, and adaptability become vital for ensuring students' success (Girlando, 2013).

Nationally and internationally, various stakeholders of education agencies have recognised the importance of life skills for learners and teachers to succeed in today's society (Rotherham & Willingham, 2009; National Education Policy, 2020). Those lacking in life skills are at a disadvantage when seeking careers (Girlando, 2013). Graduates need a solid understanding of 21st-century skills to be successful job applicants in a constantly evolving global society (Williams, 2017).

The operational and organisational reformation of society can only be achieved when there is skill development among individuals, especially the youth. Hence, skill development becomes the backbone of the nation's self-reliance. Skilling, up-skilling, and re-skilling the workforce are essential processes for a country's development. The main issue with the Indian education system is that it does not give proper attention to the skilling of learners.

The fact is that India is the second-most populous nation in the world, with

one of the highest unemployment rates. According to the National Sample Survey Organisation (NSSO), India lacks training and skills development programs in major employment sectors such as logistics, healthcare, construction, hospitality, and automobiles. Compared to China and Korea, India has around 5,500 public (ITI) and private (ITC) institutions, whereas China has about 500,000 similar institutes. Similarly, only 4% of India's workforce is formally trained in vocational skills, compared to 96% in Korea (Shyamsukha, 2020). These figures highlight our level of skill development and vision for self-reliance.

The COVID-19 pandemic has caused a severe crisis. Because we were unprepared for such extraordinary situations, workers in various sectors were immediately stranded after the coronavirus outbreak, leading to a global lockdown. This situation highlights the lack of skills among the Indian workforce. India's workforce was not ready for the jobs of the future, and to meet upcoming demands, we need to upskill our workers. There is a high demand for upskilling and reskilling the youth across the country.

How can upskilling become the backbone of *Atmanirbharta*?

It is seen that the present system of education and curriculum emphasises textbook education and theoretical knowledge more than the practical application of that knowledge. It enables learners to possess only academic brilliance and excellence, but fewer industry-relevant skills. This creates a broader gap between industry requirements and academic knowledge, which needs to be bridged and addressed. In this context, upskilling can be a catalyst for individuals to think creatively, gain practical expertise, and become job-ready. Programmes in Data Science and other emerging technologies, such as artificial intelligence, Cybersecurity, Cloud Computing, and IoT, help individuals upskill, stay employed, and advance their careers (Vohra, 2020).

The academic sector of the nation is on the verge of transformation as it must serve two large demographics: the future workforce and the existing workforce. This is a herculean task that requires vision, planning, and proper policy analysis. By reviewing various reports and literature from the field, the current assessment of our workforce shows a different scenario.

- 95 per cent of engineers in the country were not fit for software development jobs
- Average trainable-employable percentage gap in engineers for new-age IT Skills is 7.4%

- 78% of fresh hires in the IT sector need training input to become employable
- 40% of 16M IT/ BFSI employees need reskilling over the next 5 years due to rapidly changing technologies and job roles (Gupta, 2020)

The main issue with the current workforce is the lack of life skills. This can be addressed through a collaborative mindset and a bridge education approach. Here are a few ways to bridge the skill gap in India:

1. Linkage between Industry-Academia

To stay connected with the evolving dimensions of the market and keep updated with future needs in the labour market, there must be a strong relationship between academia and industry. It means that both cannot work in isolation. They must become more open, collaborative, structured, and strategic in their approach to be more effective and productive (Gupta, 2020). This requires involving the industry to co-create curricula, which can develop contextual learning through business problems, case studies, simulated projects, tools, infrastructure for hands-on learning, and mentoring.

2. Enhancing contextualised learning

In today's information-driven era, learning content is easily accessible online. Therefore, our learning model should shift from a conceptual or theoretical approach to a contextual or situational-based one, as the relevant skills and employability framework have evolved to meet current industry needs. Among learners of the present century, there is a noticeable decline in attention span. So, contextual understanding seems more engaging and easier to remember, enhancing real-time learning and improving employment prospects.

3. Individualised learning

As learning content evolves with technological advancements, it is also crucial to adapt pedagogical methods. Therefore, personalised or individualised learning becomes essential. Hyper-personalisation enables learners to select what they want to learn at their own pace. It also enables the remediation of students and allows for continuous updates to the learning process.

4. Preparing for Industry 4.0

The current Industry 4.0 no longer relies solely on traditional BTech or

MBA degrees (Sinha, 2022). Conventional degrees are losing their value, and Industry 4.0 seeks domain professionals who can handle the complexities of the modern era. This emphasises the need for conceptual and contextual learning.

Conclusion and Suggestions

With the National Education Policy (2020), the government has already taken the first step, which has been gradually implemented since 2022. It may, however, lead to several changes in the existing educational system. This policy will have a lasting impact for decades.

- Meanwhile, the government must advance the PPP model by funding basic, primary, and advanced skill development training and by identifying industry needs. Additionally, the government should develop a skill management information system that will bring together the entire skill ecosystem in a single online platform and act as a hub for the supply and demand of skilled labour
- India has invested significant effort in tackling the issue of brain drain. People have been moving abroad to work for prestigious multinational corporations and pursue higher education. We need the next generation of educated professionals to stay in India and contribute to its economic growth if we want to make it atmanirbhar
- There will always be a strong demand for qualified and skilled individuals, whether they are in India or another country. International companies quickly employ the top candidates from reputable Indian colleges, but with the right upskilling opportunities, the potential of other candidates can also be unlocked. They can join these prestigious organisations with attractive salaries and perks if we prepare them for the skills and industry standards that are in demand. By retaining talented workers domestically and hiring them for well-paying roles, businesses can thrive and attract the best minds to their industry.

To summarise, when a country benefits from its human capital, it becomes self-sufficient. To achieve this, we must equip our workforce with the information and skills needed to support economic growth and development. Equal participation from private and government stakeholders is essential for an independent nation. Additionally, the skill development scenario offers a test case for public-private partnerships in training and workforce employability.

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Experiences in Health Care and Patient Satisfaction: The Indian Context

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Abstract

The COVID-19 pandemic has highlighted several existing disparities and shortcomings in the healthcare systems worldwide. Limited data exists on patient-provider interactions and subsequent satisfaction, especially in the Indian context. Research suggests that individuals who perceive discrimination in medical settings may become increasingly reluctant to seek care. (Rivenbark & Ichou, 2020). Furthermore, it has also been found that patient satisfaction significantly impacts prognosis, disease resolution, and quality of life. (Baummer-Carr & Nicolau, 2017). Perception of discrimination in medical settings can include suggesting the patient is inferior or incapable of adequately communicating or understanding their illness. (Hausmann et al., 2008). This paper thus aims to establish a causal link between a patient's perception of discrimination in healthcare settings and patient satisfaction across various aspects of care in different socioeconomic groups. A sample of 134 participants aged 18 years or older was recruited for the study. The Discrimination in Medical Settings (DMS) Scale (Peek et al., 2011) and the Patient Satisfaction Scale (PSQ-18) (Marshall & Hays, 1994) were used to assess perceived discrimination and seven domains of patient satisfaction, respectively. Both perceptions of discrimination and socioeconomic status significantly predicted various aspects of patient satisfaction, with an R value of 0.86 at a 0.01 p-value; perceptions of discrimination were also significantly higher in low socioeconomic groups compared to moderate or high groups, with an F value of 39.50 at a 0.01 p-value. No such differences were observed between binary genders. These findings have important implications for the urgent im-

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plementation of interventions to improve healthcare in the country. The results are discussed in detail with the literature review.

Keywords: perceived discrimination, health care, patient satisfaction, socioeconomic status, medical settings, gender

Introduction

Times of crisis, like the COVID-19 pandemic, are known to affect vulnerable groups in society disproportionately. (Weiner, 2020) Access to healthcare and adequate treatment thus becomes essential to ensure the population can fight illness and preserve its overall health and well-being. Inequities in healthcare are, however, well known, and with the pandemic highlighting the ongoing barriers and institutional problems in healthcare, interpersonal experiences and reports of discrimination in healthcare raise new and concerning issues about the quality and adequacy of treatment providers who are often considered the backbone of society. (Riley, 2012; Shartzer et al., 2016; Smith et al., 2022)

The term 'discrimination' carries negative connotations of inequality, prejudice, and harmful actions directed at a group being discriminated against. (Özcan et al., 2011) Perceptions of such discrimination are therefore subjective reports from individuals in different vulnerable groups regarding negative and differential treatment they experience, mainly due to their membership in specific groups or communities. (Smedley et al., 2003; Paradies, 2006; Pascoe & Smart, 2009) It can also include patient reports of healthcare providers treating them as inferior or unable to understand their illness or the severity of their pain. (Hausmann et al., 2008)

Wide knowledge gaps remain regarding perceptions of discrimination in healthcare settings, despite extensive research on the negative effects of discrimination in other areas of daily life. (Shavers et al., 2012) Perceptions of discrimination in healthcare are known to influence various patient behaviours, including switching and substituting traditional care with alternative therapies and showing reluctance to seek healthcare overall. (Bazargan et al., 2005; Rivenbark & Ichou, 2020)

Paradies (2006), in his meta-analytic review of 138 quantitative population-based studies, found that self-reported racism in various settings is consistently associated with adverse mental health outcomes and other health-related behaviours. In line with this, Burgess et al. (2008) found that the perception of discrimination in everyday, major, and healthcare settings is correlated with underutilization of care among ethnic communities.

Brener et al. (2010) found that the perception of discrimination in staff interactions with clients is a significant predictor of treatment completion in drug rehabilitation settings. In this context, greater perceived discrimination is associated with increased dropout rates. Fear of discrimination can also lead to a reduced likelihood of patients disclosing their health conditions, which in turn decreases their pursuit of appropriate care. (Link, et al., 2006; Paterson, et al., 2007)

Furthermore, Blanchard and Lurie (2004) found that perceptions of disrespect or unfair treatment were significantly higher among racial and ethnic minorities in patient-provider relationships. These negative perceptions among patients also lead to underutilization of care in ethnic minorities. In fact, Van Houtven et al. (2005) distinguished between perceptions of unfair treatment and racism. They found that perceptions of racism significantly predicted patients delaying treatment, which was a stronger predictor than the perception of unfair treatment in delaying the filing of medical prescriptions.

Patient satisfaction from a professional and market perspective can be defined as a desired quality and outcome in the evaluation of adequate services and as a valuable asset to enhance the hospital's image. (Linder-Pelz, 1982; Tucker, 2002) However, many dimensions are known to be components and determinants of patient satisfaction. Among these, conduct, competence, efficiency, and credibility of healthcare providers are the most prominent (Tucker & Adams, 2001), while other dimensions include access to healthcare, financial aspects of obtaining healthcare services, availability of services, and overall communication with healthcare providers. (Ware et al., 1978; Ramsaran-Fowdar, 2005)

Patient satisfaction is thus an individual's appraisal of the extent to which the care they receive meets their expectations and standards, which can be determined by the value patients attach to different aspects of care. (Brennan, 1995) It is also known to influence a wide range of patient behaviours and is one of the primary factors impacting prognosis and quality of life post-illness. (Baummer-Carr & Nicolau, 2017)

Naidu (2009) hypothesized that patient satisfaction is a multidimensional construct and is significantly influenced by the quality of care received. This satisfaction, however, can lead to patient loyalty toward that healthcare centre. Xesfingi and Vozikis (2016) also found a strong positive association between patient satisfaction levels and healthcare provision indicators, especially with health-related expenditures such as increases in the number of nurses and physicians per 100,000 inhabitants.

Vuong (2018) found that patient satisfaction improved when patient income was higher and medical expenses were lower. Patients with residency statuses had higher healthcare demands than those without, and the severity of illness also affected patient satisfaction—specifically, the more seriously ill a patient was, the less satisfied they were with the health services.

Thorton et al (2007) found patient satisfaction to vary depending on their area of residence. Urban residents were found to be more satisfied with the care they receive; the availability, convenience, and time spent with the patient compared to rural populations.

Social Identity theories also hypothesise that individual attitudes are shaped by their group memberships, which are further influenced by their demographics, cultural backgrounds, and psychosocial factors. (Haslam et al., 1993; Kosmitzki, 1996) Thus, a patient's perception and satisfaction with care can also be affected by inherent social and psychosocial differences between patients and providers, making the domain of patient satisfaction even more complex. (Cothorn & Collins, 1991; Tucker & Adams, 2001)

This paper examines the perception of discrimination in healthcare and the socio-economic status of the patient as predictors of patient satisfaction across various care domains. For this study, we define 'perception of discrimination in healthcare' specifically in relation to healthcare workers such as doctors and nurses, excluding other healthcare service providers. We categorise socio-economic status as high (family income above 10 lakhs per annum), middle (family income between 5 and 10 lakhs per annum), and low (family income below five lakhs per annum).

Methodology

Sample: Participants were recruited for the study through convenience sampling. A total of 134 participants from the metropolitan areas of Mumbai, Maharashtra, aged 18 years and older, were included. An equal number of males and females participated. Similarly, an equal number of participants represented three socioeconomic groups.

Research Tools: Perception of Discrimination in Healthcare was measured using the Discrimination in Medical Settings (DMS) Scale (Peek et al., 2011) (Cronbach's α - .85), which was developed based on the Everyday Discrimination Scale (EDS). The seven-item instrument assesses perceptions on a 5-point Likert scale, with 1 being 'Never' and 5 being 'Almost Always.' Perceived discrimination scores were calculated by summing responses to all items. Higher scores on the scale indicate a greater per-

ception of discrimination and more frequent experiences of such cases in healthcare settings.

Patient satisfaction with healthcare was measured using the Patient Satisfaction Scale (PSQ-18) (Marshall & Hays, 1994) (Cronbach's α - .72), which generates scores across seven domains of patient satisfaction: General Satisfaction, Technical Quality, Interpersonal Manner, Communication, Financial Aspects, Time Spent with Doctor, Accessibility, and Convenience. The 18-item scale collects responses on a 5-point Likert scale, with 1 indicating 'Strongly Agree' and 5 indicating 'Strongly Disagree.' Negatively worded items were reverse-scored, and responses within a subscale were averaged to produce a score for that subscale. Higher scores indicated greater satisfaction with the medical care received.

Data Analysis:

The data analysis was performed using SPSS software. The results produced by it are discussed below.

Results

Table 1: Descriptive Statistics

	SES	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
PER- CEIVED	1.00	44	24.45	7.53	1.13	22.17	26.74	9.00	32.00
	2.00	44	20.27	7.47	1.13	18.00	22.54	7.00	30.00
	3.00	44	12.32	3.83	0.58	11.15	13.48	7.00	21.00
	Total	132	19.02	8.20	.071	17.60	20.43	7.00	32.00

Table 2: Regression Analysis Between Perception of Discrimination, Socioeconomic Status and Various Aspects of Patient Satisfaction

Model Summary (PSQ COMMUNICATION)

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.49	0.24	0.21	0.55

ANOVA (PSQ COMMUNICATION)

	Sum of squares	df	Mean Square	F	Sig.
Regression	12.24	5	2.45	8.00	.000
Residual	39.15	128	0.31		
Total	51.39	133			

Coefficients (PSQ GENERAL SATISFACTION)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.15	.26	.00	19.69	.000
PERCEIVED DISCRIMINATION	-.10	.01	-.63	-9.86	.000
SOCIO ECONOMIC STATUS	.25	.09	.15	2.96	.004

Model Summary (PSQ FINANCIAL ASPECTS)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.81	.65	.64	.77

ANOVA (PSQ FINANCIAL ASPECTS)

	Sum of squares	df	Mean Square	F	Sig.
Regression	144.66	5	28.93	48.30	.000
Residual	76.68	128	.60		
Total	221.34	133			

Coefficients (PSQ FINANCIAL ASPECTS)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.76	.31	.00	15.37	.000
PERCEIVED DISCRIMINATION	-.06	.01	-.38	-4.84	.000
SOCIO ECONOMIC STATUS	.54	.10	.35	5.39	.000

Model Summary (PSQ ACCESSIBILITY)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.49	.24	.21	.56

ANOVA (PSQ ACCESSIBILITY)

	Sum of squares	df	Mean Square	F	Sig.
Regression	12.39	5	2.48	8.02	.000
Residual	39.58	128	.31		
Total	51.97	133			

Coefficients (PSQ ACCESSIBILITY)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.26	.22	.00	14.68	.000
PERCEIVED DISCRIMINATION	-.04	.01	-.47	-4.02	.000
SOCIO ECONOMIC STATUS	.12	.07	.16	1.70	.092

Model Summary (PSQ INTERPERSONAL MANNER)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.87	.75	.74	.71

ANOVA (PSQ INTERPERSONAL MANNER)

	Sum of squares	df	Mean Square	F	Sig.
Regression	195.03	5	39.01	78.17	.000
Residual	63.87	128	.50		
Total	258.90	133			

Coefficients (PSQ INTERPERSONAL MANNER)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.81	.28	.00	17.02	.000
PERCEIVED DISCRIMINATION	-.12	.01	-.71	-10.63	.000
SOCIO ECONOMIC STATUS	.35	.09	.21	3.78	.000

Model Summary (PSQ TIME SPENT W DOC)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.90	.80	.80	.60

ANOVA (PSQ TIME SPENT W DOC)

	Sum of squares	df	Mean Square	F	Sig.
Regression	186.95	5	37.39	105.43	.000
Residual	45.39	128	.35		
Total	232.34	133			

Coefficients (PSQ TIME SPENT W DOC)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.32	.24	.00	18.16	.000
PERCEIVED DISCRIMINATION	-.09	.01	-.55	-9.35	.000
SOCIO ECONOMIC STATUS	.46	.08	.29	5.91	.000

Table 3: ANOVA Analysis**ANOVA**

		Sum of squares	df	Mean Square	F	Sig.
PERCEIVED DIS	Between Groups	3344.79	2	1672.39	39.50	.000
	Within Groups	5461.18	129	42.33		
	Total	8805.97	131			

Multiple Comparisons (PERCEIVED DIS)

	(J) Family	(J) Family	Mean Differ- ence (I - J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	1.00	2.00	4.18	1.39	.009	.89	7.47
		3.00	12.14	1.39	.000	8.85	15.43
	2.00	1.00	-4.18	1.39	.009	-7.47	-.89
		3.00	7.95	1.39	.000	4.67	11.24
	3.00	1.00	-12.14	1.39	.000	-15.43	-8.85
		2.00	-7.95	1.39	.000	-11.24	-4.67

Table 4:
**T-test Analysis of Perception of Discrimination in
Healthcare Based on Binary Genders**

T-VALUE		SIGNIFICANCE
0.56827998		n. s

Discussion

The purpose of this study was to assess patients' perceptions of discrimination and socioeconomic status as predictors of satisfaction across seven domains: General Satisfaction, Technical Quality, Interpersonal Manner, Communication, Financial Aspects, Time Spent with Doctor, Accessibility, and Convenience. Data from 134 participants were used to examine the relationships between variables. A multiple regression analysis was conducted using SPSS software, and the results are summarised in Table 2, while descriptive statistics are presented in Table 1.

Perception of discrimination was not found to be a significant predictor of patient satisfaction regarding communication, while socioeconomic status

was a significant predictor with a p-value of 0.01. It was observed that as the patient's socioeconomic status increased, their satisfaction with communication with their healthcare provider also increased.

However, both predictors were significantly found to predict patients' satisfaction with the doctor's interpersonal manner during health check-ups and other visits. It was perceptions of discrimination that had a stronger relationship with this variable, but in a negative direction, such that as patients perceive higher levels of discrimination, their satisfaction with the healthcare provider's interpersonal manner decreases.

Both perception of discrimination and socioeconomic status, however, predicted patient satisfaction in terms of technical quality and financial satisfaction, with a p-value of 0.01. Socioeconomic status was, however, seen as a weaker predictor than the patients' perception.

Perceived discrimination by the patient negatively predicted technical quality, with a t-value of 10.66, indicating that as perceptions of discrimination increase, satisfaction with scientific machinery and the technical aspects of health care centres that facilitate treatment and diagnosis decreases. Satisfaction with cost borne by the patient for receiving treatment also followed this pattern, where perception of discrimination negatively predicted this aspect of satisfaction, with a t-value of 4.84 at p-value 0.01.

Both hypothesised predictors in the study were also found to significantly predict the general satisfaction of patients with the healthcare they received, with a p-value of 0.01. A negative relationship exists between perception of discrimination and overall satisfaction, with a t-value of 9.86, while a positive relationship was observed with socioeconomic status. This suggests that as a patient's socioeconomic status improves, their overall satisfaction with the healthcare they receive also increases.

Socioeconomic status of the patient did not predict satisfaction with easily accessible healthcare facilities; however, perception of discrimination emerged as a significant negative predictor at t-value 4.02 and p 0.01 level. This suggests that as a patient perceives higher discrimination by their healthcare provider, their satisfaction with the accessibility of that healthcare facility also decreases significantly.

Lastly, the time spent by the patient with their doctor and their satisfaction with it were also found to be predicted by perception of discrimination and socioeconomic status at a p-value of 0.01. Perceived discrimination by the patient had a negative relationship with this aspect of satisfaction, such that

as the patient perceived higher levels of discrimination, their satisfaction with the time they could spend with their healthcare provider decreased exponentially.

These results align with the expected trends of the authors and are consistent with several studies cited above. Sorkin et al (2010) found that racial discrimination in healthcare is negatively associated with ratings of healthcare quality within each ethnic group, even when other sociodemographic factors influencing patient satisfaction are controlled. In a descriptive cross-sectional study, Glover et al (2017) observed that high levels of everyday discrimination in healthcare settings are linked to a decrease in patient satisfaction and trust in their healthcare providers. Sheppard et al (2017) also found that women who experienced good communication with their healthcare providers reported significantly lower perceptions of discrimination.

A recent study conducted by Janevic et al (2021) on COVID-19-positive women giving birth found that they perceived a greater level of discrimination in healthcare, and experiencing more than one such instance resulted in higher levels of postpartum stress and birth-related PTSD.

Wamala et al (2006) also found that perceptions of discrimination by patients and their socioeconomic status independently predict avoidance behaviours, such as refraining from seeking care, with this being more prominent in women.

To observe such trends among binary genders in our study, we used a t-test to measure possible differences in perceptions of discrimination. As described in Table 4, no significant difference in perceptions was found between individuals who identified as male and female. Kossler et al. (2011) found that 57% of women in their sample perceived discrimination in healthcare settings, which also led to increased use of less effective contraceptive methods. Virtually no literature was found that focused on analysing differences in perception of discrimination in healthcare between males and females in comparison. Further research is therefore needed to explain the findings of this analysis, especially in the Indian context.

We further analysed the perception of discrimination in healthcare settings among patients from high, medium, and low socioeconomic groups. As described in Table 3, the analysis of variance was significant with an F-value of 39.50 at a p-level of 0.01. A Tukey's HSD (Honestly Significant Difference) test was conducted to identify the specific differences between the groups. According to Table 3, patients in the low socioeconomic group

perceived the highest level of discrimination in health settings, followed by those in middle and high socioeconomic groups. These findings align with several studies suggesting that discrimination is perceived to be higher by patients belonging to minority groups.

Stepanikova and Oates (2017) found that the perception of discrimination was higher among Black Native Americans in healthcare settings, while white Native Americans perceived greater privilege. This relationship remained true even when factors like education and income were controlled. Bird and Bogart (2001) discovered a significantly high perception of discrimination among African American patients. While 63% of the sample attributed these perceptions in healthcare to race or colour-based discrimination, 58.9% also linked their experiences to socioeconomic factors.

Implications of the Study

The study demonstrates a strong causal connection between a patient's perception of discrimination in healthcare, their socioeconomic status, and their satisfaction across various care domains. It highlights an under-researched area in the Indian context and emphasises the urgent need for interventions to improve healthcare quality and directly address these perceptions.

To our knowledge, this is the first study of its kind. Thus, the differential perception of discrimination based on socioeconomic status points to the ever-present stereotypes and prejudices inherent in the societal structure.

Violation of fundamental human rights to adequate healthcare for all becomes a greater concern in post-pandemic situations where the quality of life has drastically declined, and individuals remain hesitant to seek care from conventional centres.

Limitations and Further Directions

As mentioned earlier, the study limits its conceptualisation of healthcare workers to only doctors and nurses. While this was a situational requirement for this study, future research should examine patient perceptions of discrimination against all frontline healthcare workers, including first responders and pharmacists.

The study also fails to explore further racially and culturally marginalised groups that could influence perceptions more than socioeconomic status, and did not inquire about the type of healthcare, such as government, private clinics or hospitals.

Furthermore, the data collected for this study were gathered during the height of the post-COVID-19 economic recession. Thus, the dissatisfaction and general unrest could have influenced the perceptions reported in this study.

Nevertheless, the authors of this study recommend further exploration of the perception of discrimination in healthcare among other groups in the Indian context - expanding beyond socioeconomic levels to include more complex, culturally and racially marginalised groups.

Conclusion

The study establishes a strong link between the perception of discrimination in healthcare settings, patients' socioeconomic status, and their satisfaction with various aspects of care. Notable reports of perceived discrimination among members of low socioeconomic groups raise concerns about the possibility of other racial and cultural minorities perceiving discrimination and experiencing lower satisfaction with care. Health reforms that focus on improving patient-provider relationships are crucial to reduce the domino effect caused by negative experiences of perceived discrimination in healthcare on other aspects of care. Further research is needed in the Indian context.

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From the Classroom to Life: Implementing an Effective Life Skills Programme for Adolescents

Jasmeet Kaur* & Abhishek Kumar Prajapati**

Abstract

A person's psychosocial competencies and interpersonal skills, which include problem-solving abilities, critical and creative thinking, effective communication, the ability to establish and maintain healthy relationships, the ability to empathise with others, and the ability to cope with managing their lives healthily and effectively, are referred to as life skills. In all aspects of the student's physical, mental, social, and emotional life, the school phase is a period of intensive growth, development, and change. It is primarily due to biological, cognitive, social, and cultural development that these changes occur. Life skill education has been proven to be an effective behavioural intervention strategy for promoting positive social and mental health in adolescents. To improve students' mental health, give them better-adapted skills to deal with the challenges of changing life situations, and enable them to become fully functional members of their community and the larger world, life skills education must be integrated into the core curriculum of schools and provided regularly by a life skills trainer, teacher, or counsellor. Enabling every student to realise their full creative potential is a significant focus of the National Education Policy 2020. It is based on the notion that education must promote the development of social, ethical, and emotional skills as well as cognitive skills, including "higher-order" cognitive skills like critical thinking and problem-solving, along with "foundational skills" like literacy and numeracy. According to NEP 2020, all parts of the curriculum and pedagogy will be improved. The main goal of curriculum and pedagogy reform will be to move away from the existing rote learning culture and towards an accurate understanding and learning how to learn. The purpose of education is to develop students' cognitive capabilities, as well as their character, general well-being, and

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crucial 21st-century skills. This conceptual study is based on secondary sources of information.

Keywords: Life Skills, Life Skill Education, Adolescents, NEP 2020

Introduction

Adolescence is a transitional period in human life when various physical and psychological changes occur. Adolescents, also known as teenagers, youth, and young people, constitute a distinct population group in society due to their unique biological, psychological, and social characteristics. During this period, adolescents try to adjust their behaviour and attitudes according to societal needs. The youth in this stage begin to think differently. They prefer to be independent of their family members, establish friendships with peers, and develop their own beliefs and attitudes. To cope with these changes and to adjust and perform effectively in society, life skills education is essential for every teenager during adolescence.

Twenty per cent of the world's adolescent population lives in India. India has 245 million individuals aged between 10 and 19 years, which is twenty per cent of the total population; hence, India is called 'a young nation'. Any country might find that having such a youthful population is either an advantage or a disadvantage. This adolescent population can be a blessing to the country and can propel it to the top if the nation can offer them quality education and health facilities. However, if we are unable to do so, the same population of adolescents could become a liability.

Teenagers are in a period of lifelong development, during which they must navigate difficulties and meet specific requirements and demands. It is a crucial era in everyone's life, marking the passage from infancy to adulthood. It is a time of sudden physiological transformation and maturation of the psychosocial system. In fact, these are the creative, inventive, and resourceful years. They are also years of experimentation and risk-taking, succumbing to academic pressure, and drawing erroneous conclusions on essential matters. The support, assistance, and guidance from parents, teachers, classmates, and society at large will determine which aspects dominate their lives, despite this being a mixed period. Often, this stage lays the groundwork for a successful career and life. Adolescents should receive support from the school system to help them navigate this challenging yet opportunity-rich time. Students should get the best possible attention from the education system concerning the acquisition of information, skills, attitudes, and values. Unfortunately, modern education often emphasises the acquisition of information and the pursuit of degrees. In-

cluding life skills in the curriculum is a strategic way to address this issue.

In the 21st century, schools play a vital role in developing responsible, creative, analytical, and compassionate citizens, since adolescents spend most of their time in school. The education program must evolve with society so that students receive knowledge that is relevant to them. Therefore, a curriculum that imparts essential knowledge and fundamental skills necessary for a happy life is crucial, considering the importance of schools in students' lives. Education aims for the overall development of a person. To achieve this, children should be taught in a way that fosters the growth of desirable life skills, attitudes, and values. Enhancing their intellectual and social abilities benefits their ability to live successfully and purposefully in today's rapidly changing and complex culture. Learning life skills is a vital part of our natural and spontaneous development, just as learning itself is an ongoing process throughout human life. Life skills teach students various abilities needed for daily life management and help build confidence, enabling them to face any situation effectively. Today, students' lives are extremely fast-paced and hectic. They must complete multiple tasks within limited timeframes, which can be quite challenging. Common difficulties include exam failure, receiving lower-than-expected marks, and intense competition. Persistent struggles can lead to frustration, stress, and a lack of time for social interactions and enjoyment. Supporting students in overcoming tension is therefore essential. Each student faces unique challenges and requires specific skills to address them. In such situations, life skills can help students manage these issues. Life skills involve the application of knowledge, attitudes, and skills that are essential for personal growth and development.

Life skills

Life skills refer to the ability to take initiative and accept responsibility for acting in a certain way in specific situations to promote healthy living. Hamburg (1990) defines life skills training as the teaching of essential skills for surviving, interacting with others, and thriving in a diverse society. Communication, interpersonal negotiation, self-control, and decision-making are examples of general skills. All skills that help individuals manage daily problems effectively and give them confidence to handle any situation are called life skills. Life skills teach students how to practically apply knowledge, attitudes, and abilities that are key components of personal growth. They include psychosocial and interpersonal skills that help students develop stress management, self-control, decision-making, and effective communication skills, enabling them to lead healthy and produc-

tive lives. Although the specific nature and descriptions of life skills may vary across different social and cultural contexts, WHO's investigation identified a core set of abilities essential for living. They are:

1. **Self-Awareness:** WHO defines it as, "Self-awareness refers to our understanding of ourselves, our personalities, our strengths and weaknesses, our desires and dislikes."
2. **Empathy:** This is a person's ability to understand the feelings of others in distress and to provide emotional support.
3. **Effective communication** is the ability to use verbal and nonverbal skills to build and sustain positive social relationships.
4. **Interpersonal Relationships:** Also called survival or people skills, it is a crucial life skill and the most critical aspect of human intelligence. It promotes starting and maintaining positive relationships with others and avoiding harmful ones with minimal disturbance.
5. **Creative Thinking:** It is the ability to generate new, innovative ideas and turn them into actions through original thinking. It helps a person respond flexibly to life's challenges by exploring and evaluating possible alternatives.
6. **Critical Thinking:** Critical thinking is self-directed, disciplined thinking based on logical reasoning and objectivity. It enhances the quality of thought and allows a person to analyse information and experiences logically and objectively.
7. **Decision Making:** It helps a person to make the right decisions at the appropriate time and to select the best option among various alternatives. This skill involves evaluating the advantages and disadvantages of different choices and, after analysing these options and their consequences, confidently taking responsibility for one's decisions.
8. **Problem Solving:** Problem solving involves finding an appropriate way to achieve a goal when it is not immediately accessible. It enhances the ability to overcome difficult situations and reach the goal without resorting to anger, coercion, defiance, or aggressive behaviour.
9. **Coping with Emotion:** Coping with emotion helps a person understand their own feelings and those of others. This allows a person to learn healthy, positive, and safe ways to express their feelings. It also helps in recognising how emotions affect behaviour and in learning how to respond to emotions appropriately, as well as managing intense feelings like anger and sorrow.

10. **Coping with Stress:** This skill helps an individual identify the source and effects of stress, and learn techniques to manage and overcome it.

Importance of life skills for adolescents

Understanding the value of life skills is essential if we want to lead successful lives. Furthermore, it is crucial to apply them in our daily routines. When this happens, our lives can become more straightforward and beneficial. Developing life skills enables us to simplify and make our lives easier, create a fulfilling existence, and maximise our time. Life skills are critical in our daily lives. They enhance our ability to adapt to different situations and succeed socially. Therefore, addressing the lack of life skills among the younger generation is crucial. A deficiency in these skills not only impacts personal life but also affects employment and professional growth. For a student to thrive and contribute to societal progress, they must be adaptable to any situation. Currently, the lack of life skills among young people is one of the most urgent issues requiring prompt solutions, mainly due to gaps in school education. Consequently, many individuals struggle in their personal and professional lives because they do not possess these essential abilities. Students often have to make decisions. They are taught decision-making skills to choose wisely between multiple options. After analysing all available facts and consulting with involved parties, decisions can be made. Life skills also empower students to take initiative in situations where parents or teachers are unavailable, encouraging them to take responsibility for their actions instead of blaming others. Thus, developing the ability to handle life's uncertainties with flexibility has become a vital part of any development strategy, including India's National Education Policy 2020.

Lifeskills are phenomenal in many ways that the school students can make use of in their personal, academic, and social lives—

- Discover innovative problem-solving strategies by adopting new ways of thinking
- Attribute one's own and others' behaviour positively to encourage greater responsibility for their actions.
- Increase confidence in communication and collaboration
- Analyse alternatives in making decisions and choices
- Develop self-reflection and become more self-aware
- Manage oneself and peers to solve problems in workplaces and educational institutions.

- Cooperate with others and work as a team
- Manage time more efficiently and effectively
- Develop role-taking ability for a challenging tomorrow.

How can life skills be incorporated into the school curriculum?

According to NEP 2020, the goal of education is not only cognitive development but also character building and developing well-rounded individuals with essential 21st-century skills. To achieve these key objectives, NEP 2020 has committed to reforming and emphasising all aspects of curriculum and pedagogy. The primary objective of curriculum and pedagogy reform at all levels is to shift away from the prevailing culture of rote learning toward fostering a deeper understanding and the ability to learn independently. Education's purpose will be to enhance students' cognitive abilities as well as their character, holistic well-being, and critical skills necessary for the 21st century. Therefore, under the heading "Curricular Integration of Essential Disciplines, Skills, and Capacities" in school education, NEP 2020 emphasises integrating various Life Skills along with other subjects. Each subject's curriculum will be streamlined to its essential minimum to create space for critical thinking and broader learning. Learning can be inquiry-based, discovery-based, discussion-based, or analysis-based. The Life Skills Education (LSE) Programme 'Umang' is being implemented by the Madhya Pradesh School Education Department across all State Board government high and higher secondary schools. Life skills education programs at the school level are also conducted in various states, such as Udaan in Uttar Pradesh, Delhi, Rajasthan, Haryana, West Bengal, Nagaland, Manipur, and others.

- **Experiential learning** will be incorporated at all levels of education, including as a fundamental teaching method within each subject and through exploring the relationships between different subjects. Examples of experiential learning include hands-on activities, arts- and sports-integrated education, and storytelling-based pedagogy.
- A cross-curricular approach called **art integration** uses different aspects and expressions of art and culture as the basis for understanding concepts across various programs. To support a focus on experiential learning, art-integrated education will be incorporated into classroom activities.
- Another cross-curricular intervention is **sports integration**, which incorporates physical activities, including indigenous sports, into classroom activities to promote the development of positive traits such

as cooperation, self-initiative, self-direction, self-discipline, teamwork, responsibility, and citizenship.

- **Storytelling** is a powerful educational method. Generally, telling a story is a natural way to share knowledge. The goal of the teacher, the storyteller, and the performer is to educate, fascinate, and entertain their audience. They all aim to communicate their message effectively and provocatively. The beauty of storytelling transforms the classroom atmosphere, enhancing the learning environment.
- In the framework of NEP 2020, **toy-based pedagogy** involves using games and puzzles to teach mathematics, incorporating Indian culture into the curriculum and pedagogy, and fostering children's individual potential. The development of a "school preparation module," as mentioned in NEP 2020, primarily relies on games, activities, and children constructing toys to promote their creativity, critical thinking, and other 21st-century skills. By emphasising play-based learning during the foundational and preparatory years, it has facilitated a smooth transition.

Life Skill Education Programme in India

India has acknowledged the importance of life skills education in preparing individuals for different aspects of life. Several organisations and initiatives have been launched to promote life skills education nationwide. Here are some notable programs in India:

- **Girls' Education Program** aims to equip girls with essential life skills that help them choose their own future. It provides Life Skills training, materials, and mentorship to girls in grades 6 through 12 living in economically disadvantaged areas.
- **Udaan:** The program "Udaan," which literally translates to "flight," provides special residential learning for out-of-school girls as part of CARE India's efforts to secure education for girls from underprivileged backgrounds. In the states of Uttar Pradesh (Hardoi district), Orissa (Mayurbhanj district), and Haryana (Mewat district near Delhi), CARE has been in charge of overseeing the Udaan project with the assistance of regional NGOs. These camps offer learning opportunities to out-of-school females aged 11 to 14 who have either never registered in school or have dropped out. These girls have the chance to break the cycle of illiteracy thanks to Udaan, which enables them to complete their Class 5 primary education in just 11 months.

- **Pragati:** Non-residential learning facilities for children not in school. To meet the needs of out-of-school children in Bihar, CARE India's GEP has designed Non-residential Special Training Centres (NRSTCs) by adapting the “Udaan” model to a non-residential format. Students at an NRSTC are integrated into the main government school after completing a one-year program, and these centres are situated on the grounds of state government schools.
- **Agrani:** fostering female leadership through educational and community-based initiatives. The foundation of the Agrani initiative is the idea that teenage girls need leadership skills to take charge of their lives and create supportive environments for others. The initiative aims to develop powerful platforms for teenage females in public schools, such as children committees (Bal Sansad), morning assemblies, forums for extracurricular activities, sports, and substantial school-based adolescent groups (Meena Manch). Collaborating with teachers to raise awareness and promote positive attitudes about teenage girls' leadership—including decision-making, self-esteem, rights, confidence, voice, and vision—and implementing CARE's leadership curriculum is a key part of this effort.
- **Community Library:** Encouraging a communal reading culture, GEP aims to establish a “reading” culture in communities through this specially designed intervention. Libraries are set up in areas provided by the community or authorised by the PRI. These libraries can primarily feature picture books and books with less text, which can be “read” to children by parents with weak reading abilities, in addition to newspapers, IEC materials, and ordinary books. By encouraging early literacy and learning among young children by fostering a habit of reading in them, this route not only allows parents, family members, and other community members to read, participate in reading, or borrow books.
- **Sampurna:** Life Cycle Intervention for Women and Adolescent Girls. This innovative project in Tamil Nadu's Cuddalore district combines components of the health, education, and livelihood sectors. This unique intervention will be available to young and teenage women and girls across all age groups from 0 to 30. The ‘life cycle’ approach used here indicates that the project will work with the same group of beneficiaries throughout its duration. Therefore, the initiative will address a wide range of challenges specific to the district's marginalised population, such as early childhood development, preschool and primary

education, teenage life skills, leadership, and career preparation.

- **Education & Health:** fostering good hygiene and health habits. The Udaan intervention, which mainstreams marginalized out-of-school girls into the official education system by implementing an accelerated curriculum in a residential setting, provides the foundation for this initiative. Through this initiative, GEP hopes to reach isolated regions of the nation that lack trustworthy sources of information about teenagers' cleanliness and health habits.
- **Umang:** For children in grades 9 through 12, the Government of Madhya Pradesh's School Education Department developed the "Umang" Life Skills Education Program. The foundation of the program, Umang, was laid in 2015 with 42,000 girls from 43 RMSA Girls Hostels in the Indore division. This program, which operated until 2017, brought about many beneficial changes in females. The School Education Department decided that a life skills program should be implemented in all public schools as it benefits both boys and girls equally. Research was also conducted, and the results were highly positive.

Conclusion

In today's society, the effective implementation of life skill education is essential. This education is effective because it focuses on individual needs and provides students with functional cognitive, emotional, social, and self-management skills needed to make meaningful changes in their lives. Yadav P and Iqbal N (2009) reported that providing students with life skills education can change adolescents' attitudes, thoughts, and behaviours by offering a supportive environment. Life skill education has proven to be an effective psychosocial intervention strategy for promoting positive social and mental health among students. It plays a vital role in areas such as strengthening coping mechanisms, developing emotional intelligence and self-confidence, and enhancing critical thinking, problem-solving, and decision-making skills. To boost students' mental capabilities, meet their specific needs, equip them to handle life's changing challenges, and enable them to become productive members of society and the larger community, a life skills trainer, teacher, or counsellor must incorporate life skills education into the regular school curriculum and deliver it continuously. From this discussion, it is clear that life skill education is crucial for students' overall development. It is important to remember that life skills are a vital component of both individual and social growth.

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Skills and Tribal Livelihood System: A Literature Review

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Abstract

The consensus among modern mainstream societies is that the industrialisation of tribal areas would bring economic prosperity to many sedentary communities living in the hills, forests, and valleys across different regions. However, this has largely proved to be an illusion. The establishment of mega projects like steel plants, the automotive industry, mining, and crude oil extraction was expected to provide employment and livelihoods to the local indigenous population. Still, it has fallen far short of this goal. It has never offered a satisfactory alternative to the traditional methods by which tribal communities sustain themselves. Here, the role of life skills becomes crucial in enabling long-term sustainability. Traditional skills of tribal peoples have been time-tested and have consistently provided intra- and inter-generational stability. Each tribe has its own economic system to meet the basic needs of its members, and the skills, both acquired and learned, contribute to this system. This paper aims to explore the role of basic skills in supporting both the life and livelihood of tribal communities. Its objective is to study the tribal livelihood system from the perspective of life skills as a key factor leading to sustainability. The methodology used is straightforward, relying on secondary data. Sources include literary references from books on livelihood, natural resource management, sustainability, and tribal studies, as well as reports from official and unofficial surveys, and data published by various agencies. Additionally, research journal articles and other relevant literature are reviewed. Proper citations are provided for all directly quoted references. These literary sources include both recent works and significant historical contributions. The prime sources of secondary data are Google Books, open-access digital libraries, UGC Shodhganga, and similar platforms. The study finds

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and concludes that life skills enable many tribal communities to cope with stress, strain, and livelihood challenges. The core finding is that rural tribal livelihoods, in the context of life skills, predominantly revolve around natural capital. This is primarily because many tribal communities depend directly on the harvesting of natural resources for their sustainability, and their traditional skills—acquired and practised—act as a vital factor for their survivability.

Keywords: Skills, Livelihood and Sustainability

Introduction

The tribes are the indigenous people of the land who are believed to be the earliest settlers in the Indian peninsula. The term ‘tribe’ originated around the time of the Greek city-states and the early formation of the Roman Empire. The Latin term ‘tribe’ has since been transformed to mean, “tribe is a group of people in a primitive or barbarous stage of development acknowledging the authority of a chief and usually regarding themselves as a common ancestor (Parandamulu, 2021:14). Tribal economies are always self-sufficient and can be understood within the context of skills practised by the members of the tribe. Tribal communities have their own ways of meeting their basic needs for existence. Such societies maintain a perfect balance with nature in fulfilling their needs. Skills manifest in customs, traditions, beliefs, and practices. They are shaped in such a way that people with the same natural surroundings develop different economic processes to meet their needs and sustain their livelihood.

Livelihood is defined as a ‘means of securing the necessities (food, water, shelter, and clothing) of life’. In 1987, the Brundtland Commission on Environment and Development pioneered the sustainable livelihood concept. In 1992, this idea was further elaborated at the United Nations Conference on Environment and Development and advocated as a broad goal for poverty alleviation (Tambe: 2022:6). In the same year, Robert Chambers and Gordon Conway defined ‘A livelihood comprises capabilities, assets (including both material and social resources), and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while undermining the natural resource base’ (in Tambe, 2022:6). Skills are the essence of survivability for any tribal livelihood system. What exactly is “skill”? The dictionary describes skill as “proficiency,” “dexterity in the execution of learned tasks,” or “the ability to use knowledge effectively in doing something” (in Sar-

mah:2017:17). Therefore, life skills in this context may be defined as those competencies that assist people in functioning well in the environments in which they live and also ensure sustainability to cope and recover from stress, strains, and challenges.

Tribal or rural livelihoods have long been central to discussions on sustainable development worldwide. Developing sustainable life skills is crucial for any community, individual, or institution to grow and thrive. These skills have traditionally enabled riparian communities to adapt most effectively to their environment. Recently, tribal communities in India have been experiencing shifts in their social and economic conditions due to the rapid industrialisation of rural areas. India's economic liberalisation policy not only opened its doors to foreign multinational corporations but also provided them with easier access to establish themselves in the rural and semi-rural regions of the country.

It was expected that the industrialisation of tribal areas would bring economic prosperity to many sedentary communities living in the hills, forests, and valleys across different regions. However, this has largely proven to be an illusion. It has never provided a satisfactory alternative to the traditional methods by which tribal communities earn their livelihood and sustain themselves. Here, the role of life skills becomes crucial in enabling long-term sustainability for these people.

The paper will highlight some of the traditional life skills of sedentary tribal communities in India, their practices, and how they have provided sustainability to generations over time.

Objective

The primary objective of this paper is to examine the tribal livelihood system from the perspective of skills as an enabling factor for sustainability.

Methodology and Data Source

The paper is based on secondary or desk research and comprises data that has already been tried and tested. Existing relevant data is systematically collected and collated. The data includes literature published in various books, research dissertations, government reports, etc. The sources of reference have been mostly websites and college libraries. The following steps were followed while writing the paper.

Step 1: Identification of Research Topic

A suitable research topic was identified, and accordingly, the objectives

and attributes of the research are listed.

Step 2: Identification of data sources

Proper information sources were identified and narrowed down to only those that would provide relevant information.

Step 3: Data Collection

After narrowing down the sources of information, only data that had a close link to the objective of the study and could provide a clearer understanding of the theme under consideration were referenced and included. These data were collected from various sources such as websites, published and unpublished research materials, and institutional libraries.

Step 4: Data Reliability and Validity

Only data that are authentic and properly referenced are collected. Old and outdated data are avoided as much as possible to ensure validity.

Step 5: Analysis

After proper arrangement and filtering, the collected data is analysed and discussed to derive the desired output.

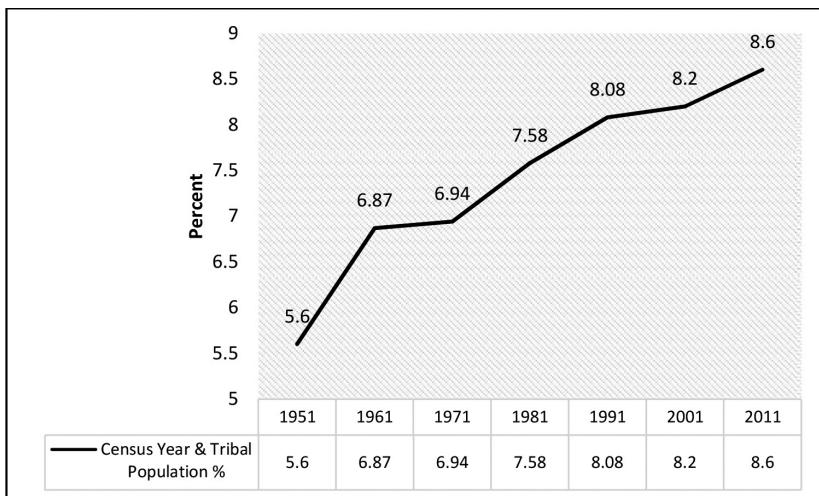
Discussion

“Traditional knowledge is essentially culturally oriented or culturally based, and it is integral to the cultural identity of the social group in which it operates and is preserved” (Varkey 2007 in Kakati: 2013:1). The traditional knowledge systems of the tribals have been central to their survivability and have led to the development of sustainable life skills passed down from one generation to the next. “The development of indigenous knowledge systems covering all aspects of life, including management of natural resources, has been a matter of survival for the people who generated these systems. It is the basis for local-level decision-making in agriculture, non-farm activities, health, food preparation, natural resource management, and a host of other activities of indigenous people.” (Kakati, 2013:1).

The tribal population in India has substantially grown in every census year from 1951 to 2011. It has significantly contributed its share to the total population of India, as seen in Figure 1.

Figure 1

Per cent of Tribal Population to Total Population of India 1951-2011



Source: Census of India 1951-2011

The decade from 1951 to 1991 saw a phenomenal increase in the tribal population of India. From 1991 to 2011, the growth was slow, indicating social and economic changes in their habits and lifestyles.

The country's tribal cultural mosaic presents a unique picture. In the last three decades, more than 274 communities in India have been recognised as tribal. The state-wise composition of the tribal population and their percentage share in the total population of India show variations. Among states, Odisha accounts for 8.62 per cent of the tribal population relative to the total population of India. Sikkim contributes the lowest at 0.56%. In the Union Territories of India, Jammu and Kashmir contributes the highest at 37.50%. Chandigarh, Puducherry, and Delhi have no tribal population share in the total population of India.

In the following paragraphs, an attempt is made to discuss and analyse a few of the tribal life skills by citing examples, and based on them, generalisations are drawn to establish the link between life skills and tribal livelihoods.

1. Harvesting of Forest Resources as a Skill:

Forests are a crucial source of livelihood for all tribal communities across the globe. Harvesting forest resources or NTFPs is a vital skill that offers unmatched sustainability to riparian communities during times of adversity. Knowledge of identifying edible forest products and those that can be used directly or indirectly for various needs is a valuable skill, and the

tribals of India are masters of it. Forests provide a wide range of livelihoods for tribal communities. Odisha is home to 62 major tribes in India, with 39.31% of its area under forest cover. Similipal National Park is home to the highest tiger population in the state and also hosts many tribal communities, including the Kolha, Santal, Bhumija, Bhatudi, Gond, and Ho. Additionally, three vulnerable groups—Mankdia, Lodha, and Hill Kharia—are found inhabiting the buffer zones of the park. These tribes are well adapted to the natural environment of the Similipal hill ranges. All these tribes live in proximity to each other for greater social and economic security and maintain cordial relations with the broader Hindu caste populations, who are mostly settled farmers.

The livelihood of the Similipal tribes depends on the forest environment. They mainly rely on the national park for their sustenance. For the tribes, hunting and food gathering are more reliable sources of livelihood than farming. By applying four major survival skills—picking, digging, climbing, and cutting—they support themselves and maintain their way of life.

Table 1
Tribal Household Dependence on Forest Resources in Similipal

Characteristics	Per cent of HH (N=300)
Products	
Mahua	30.3
Honey	17
Jhuna	11.3
Lakha	16.7
Seasonal Vegetables	19.7
Aquatic Species	5
Value	
Below Rs.100	15.7
Rs.100-Rs.200	32
Rs. 200-Rs.300	19.3
Rs.300-Rs. 400	19.7
above Rs.400	13.3
Use	
Consume	27.3
Sell	20.3
Festival	37.3
Rituals	15

Source: Sial, M.K. (2021). A study on the livelihood of tribal people in Similipal National Park of Odisha. Fakir Mohan University, Balasore: Unpublished. Retrieved August 2022, from <http://hdl.handle.net/10603/348168.p.117-118>.

Table 1 illustrates how the tribal population depends on forest resources, with their traditional skills in gathering supporting their natural resource harvesting for both livelihood and sustenance. From Table 1, it is evident that a variety of products are harvested, most of which directly or indirectly lead to both monetary and non-monetary benefits. Although the valuation of these products may seem low, on an average, their daily or alternative use provides sustainability.

Table 2
Types of use of plant and animal NTFPs in ILRP, Cachar, Assam

Purpose	No. of Species	% of Total
Firewood	13	8.61
Medicine	26	17.22
Edible	28	18.54
Essence	7	4.64
House Construction	14	9.27
Magic - religious	7	4.64
Religious	2	1.32
Condiment	2	1.32
Insect repellent and fish poison	5	3.31
Dye	4	2.65
Bath sponge	1	0.66
Hunting tool	8	5.30
Container and packing material	3	1.99
Essence stick pulp	1	0.66
Traditional beverage	1	0.66
Natural detergent	1	0.66
Rope	1	0.66
Broom	1	0.66
Handle	2	1.32
Traditional wine making	1	0.66
Agricultural tool	8	5.30
Pet	5	3.31
Trophy	10	6.62
Total	151	100.00

Source: Dattagupta, Shovan (2011). Inventory and assessment of plant and animal NTFP in the Inner Line Reserve Forest, Cachar, Assam, India. Assam University, Silchar: Unpublished, Retrieved August 2022, from <http://hdl.handle.net/10603/92880>

Similarly, another example from the Inner Line Reserve Forest Areas of Cachar (see Table 2) demonstrates tribal dependence on forest resources and how, through the application of their traditional knowledge and skills, they make different use of plant and animal NTFPs. NTFPs primarily contribute to the fuel, medicine, and food needs of tribal communities, regardless of the region. The knowledge of identification and application itself is a vital life skill, without which the utility of any resource is not feasible. The tribal people are perfect examples of this, as they cope with and recover from various challenges that their habitat presents over time.

In Karnataka, in the south of India, live the Soligas, a forest-dwelling indigenous community that mainly inhabits Chamarajanagar district, about 177 km from Bengaluru, the state capital.

According to the Community Forest Rights-Learning and Advocacy report, the local inhabitants harvest and sell non-timber forest produce such as honey, gooseberries, bamboo, paasi (lichen), algae, wild turmeric, Indian blackberry, soap-nut, and Nannari (sarasaparilla), as well as tubers (Mishra, 2020).

2. Farming as a Survival Skill

Food gathering and hunting were the primary sources of livelihood for tribal communities. Over time, due to population pressure, the tribal population developed farming skills and learned to grow their own food for sustainability. Survival skills played a key role during this transition from a hunter-gatherer stage to a settled agricultural stage for the tribes. The dominant mode of cultivation among most tribal communities is shifting cultivation. In areas where slash-and-burn agriculture is not common, tribal communities rely on upland cultivation. With new and more refined agricultural skills, the number and size of tribal holdings in India have increased significantly over the past few decades.

Table 3
Number of Holdings, Schedule Tribe, India 1980-81 to 2015-16

Sl. No	Size Groups	Number of Holdings (in '000 ha.)							
		1980- 81	1985- 86	1990- 91	1995- 96	2000- 01	2005- 06	2010- 11	2015- 16
1	Marginal	2728	3161	3763	4376	4429	5118	6470	7127
2	Small	1551	1795	2087	2336	2411	2650	2877	2972
3	Semi- Medium	1405	1545	1694	1778	1653	1700	1787	1771
4	Medium	936	936	943	898	783	763	760	704
5	Large	234	212	183	135	128	112	111	95
6	All Sizes	6854	7648	8670	9523	9404	10343	12005	12669

Source: Agriculture Census 2015-16, Ministry of Agriculture and Farmers Welfare, Government of India, 2019.

Table 4
Number of Operated Area, Schedule Tribe, India 1980-81 to 2015-16

Sl. No	Size Groups	Number of Holdings (in '000 ha.)							
		1980- 81	1985- 86	1990- 91	1995- 96	2000- 01	2005- 06	2010- 11	2015- 16
1	Marginal	1309	1512	1839	2131	2159	2468	3144	3413
2	Small	2220	2563	2996	3332	3421	3692	4119	4202
3	Semi- Medium	3850	4225	4635	4802	4452	4542	4831	4752
4	Medium	5596	5570	5550	5202	4538	4397	4363	3984
5	Large	3729	3365	2888	2058	1955	1831	1763	1434
6	All Sizes	16704	17234	17909	17524	16525	16929	18221	17784

Source: Agriculture Census 2015-16, Ministry of Agriculture and Farmers Welfare, Government of India, 2019.

Table 3 and Table 4 highlight the number of tribal land holdings and operational holdings in India from 1980-81 to 2015-2016. The total holdings for all sizes increased from 6854 thousand hectares to 12669 thousand hectares. This represents an increase of 5845 thousand hectares over two decades. It indicates that agricultural skills provide the main sustenance for the economy of the tribals. Accordingly, the sizes of operational holdings also show an increasing trend during these decades. A notable point from both Table 3 and Table 4 is that holdings and operational holdings of

marginal to semi-medium tribal cultivators primarily increased from 1980 to 2015. Conversely, medium and Large-sized groups show a decline over time. This may be attributed to the fact that, with the modernisation of the economy, many tribal groups have opted for diversification of traditional skills and livelihoods, which is gradually depleting their natural holdings.

Table 5
State-wise estimates of Farming income of dependent farmers
(in thousands)

State	Farming Income Dependent Household	Total Agricultural Household	% of Farming In- come Dependent Household
Andhra Pradesh	745.5	3159.4	23.6
Arunachal Pradesh	152.4	152.4	100
Assam	637.6	3099.7	20.57
Meghalaya	272.2	364.7	74.64
Manipur	166.4	241.2	68.99
Mizoram	71.5	76.4	93.59
Nagaland	181.6	191.8	94.68
Tripura	25.3	289.3	8.75
Jharkhand	6.6	2808	0.24
Bihar	3351.6	7011.3	47.8
Chhattisgarh	1302.6	2985	43.64
Uttar Pradesh	8746.5	17789.5	49.17
Odisha	283.7	4815.3	5.89
Maharashtra	3646.6	7289.3	50.03
Gujarat	2499.9	4037.1	61.92
Karnataka	3664	4251.6	86.18
Kerala	8.1	1466.9	0.55
Tamil Nadu	60.3	2597.7	2.32
Madhya Pradesh	3489.9	7276.3	47.96
West Bengal	75.7	6626.2	1.14

Source: National Statistical Office, 2019

One can see from Table 5 that a significantly large percentage of both the tribal and non-tribal populations in India earn their income and sustain themselves through agriculture.

3. Fishing as a Livelihood Skill

Tribal livelihoods largely depend on harvesting water resources, mainly related to fisheries. Fish and fisheries are an integral part of most tribal societies and significantly contribute to their economic and social health and well-being. Freshwater fishing produces 800,000 tons, which accounts for

13% of India's total fish catch. Tribal communities and their rich, primitive culture encompass many traditions, with fish being a fundamental part of their food habits since time immemorial. An important task performed by tribes in the initial stage of fishing is to change the flow direction of streams and water bodies, requiring both knowledge and skills to understand the physical environment comprehensively. Tribal communities, especially coastal ones, depend heavily on aquatic resources for their income and livelihood, leading to overexploitation of fish stocks. The increase in marine fish catch surpasses that of inland sources. Fish farming has been a traditional practice for several centuries, dating back to the era when Hindu kings ruled the country. Rural water resources are abundant with wild fish, which are used to meet local needs.

4. Weaving and Handloom Skills

The Handloom industry is largely household-based and labour-intensive, as it employs all family members in the production process. The skill is intergenerational, passed down by older family members and master weavers (Anand, 2017:2). Livelihood strategies in traditional tribal societies are a mix of both agrarian and non-agrarian activities. Although all tribes in India produce handloom products, some are known for their expertise. The handloom sector is an integral part of the marriage tradition in the NE region. Weaving was one of the criteria for choosing a mate. Among some tribes of Manipur, marriages were solemnised only with persons living in those villages who had weaving skills (Devi, 2013: 429).

According to the Handloom Census 2010, out of 27.8 lakh handloom worker households in India, nearly 61 per cent belonged to the NE region, which includes states like Arunachal Pradesh, Assam, Manipur, Mizoram, Meghalaya, Nagaland, Tripura, and Sikkim. In terms of the total workforce in handlooms, there are around 43.3 lakh weavers in India, of whom 21.6 lakh are from the NE region (Devi, 2013:428).

Table 6
Distribution of Adult Handloom Workers by Social Groups

NER/India	SC (%)	ST (%)	OBC (%)	Others
North Eastern Region India	7.2	34.3	33.9	24.6
	10.1	18.1	45.2	26.6

Source: Handloom Census of India, 2010, Ministry of Textiles, Govt. of India, in Devi, Ch. Victoria. Handlooms for livelihood in north-eastern

region: problems and prospects. Journal of Rural Development, Vol. 32, No. (4). NIRD, Hyderabad.

Table 7
Percentage Distribution of Handloom Worker Households by Major Sources of Finance

NER/ India	Money Lenders	Master Weavers	Friends/Relatives	Cooperative Societies	Commercial Banks	SHGs	Traders	Others
North Eastern Region	12.2	6.8	9	13.1	30.5	17.7	0.8	10
India	13.4	44.6	4.9	5.9	14.8	5	4.3	7.2

Source: Handloom Census of India, 2010, Ministry of Textiles, Govt. of India, in Devi, Ch. Victoria. Handlooms for livelihood in north-eastern region: problems and prospects. Journal of Rural Development, Vol. 32, No. (4). NIRD, Hyderabad.

Therefore, based on Table 6 and Table 7, it is understood that weaving is an important traditional skill among the tribals in India. Since the northeastern region of India mainly consists of tribal states, their prominence is clearly reflected in the country's handloom sector. Most tribals in the NE region work as independent weavers and are less likely to be employed by others. They purchase raw materials, make clothes, and sell the finished products in the market. Their earnings depend on market conditions, productivity, and their individual skills.

5. Crafting

Tribal lifestyle is shaped by the ecosystem in which they live and survive. Nearly every tribal community specialises in handicrafts and artisan products, which significantly contribute to their overall income and livelihood. These skills are passed from one generation to the next. Baskets for storing domestic articles, smoking pipes, footwear, hunting arrows, combs, storage containers, wooden and stone plates, textile items like shawls, coats, jackets, jewellery, and ornaments—such as earrings, ankle bells, necklaces, headgear, and headdresses—wall paintings, deities made of wood or stone, and artifacts are some of the products produced by tribal groups in every state of India.

Table 8:
Estimated Population of Handicraft Artisans (In lakhs)

State	NCAER's Estimate	State	NCAER's Estimate
Andhra Pradesh	1.05	Arunachal Pradesh	0.08
Assam	1.01	Bihar	1.53
Goa	0.07	Gujrat	3.32
Haryana	1.42	Himachal Pradesh	0.58
Jammu & Kashmir	5.17	Karnataka	2.88
Kerala	0.1	Madhya Pradesh, including Chhattisgarh	1.02
Maharashtra	3.24	Manipur	2.68
Meghalaya	0.69	Mizoram	0.05
Nagaland	0.86	Odisha	0.76
Punjab including Chandigarh	0.61	Rajasthan	3.61
Sikkim	0.1	Tamil Nadu	0.87
Tripura	1.75	Uttar Pradesh including Uttarakhand	9.72
West Bengal	3.91	Andaman & Nicobar Islands	0.01
Delhi	1.12	Puducherry	0.01

Source: Office of the Development Commissioner (Handicrafts) in a report by the Socio-Economic and Educational Development Society (SEEDS), Government of India, New Delhi.

In the report by the National Council of Applied Economic Research (NCAER), it is observed from Table 8 that in states like Uttar Pradesh, Maharashtra, Gujarat, West Bengal, Rajasthan, Manipur, and Karnataka, a significant number of tribal populations are engaged in craft activities, which serve as their primary source of livelihood. These skills, although already acquired, have undergone many changes and refinements in recent times through the acquisition of more polished skills via various training and development activities organised and carried out in tribal zones by different NGOs and government agencies from time to time. Therefore, tribal individuals are enhancing their skills and abilities as artisans and craftsmen to promote better livelihood opportunities.

6. Knowledge of Traditional Medicinal Plants

The importance of medicinal plants in traditional healthcare practices, providing clues to new areas of research and biodiversity conservation, is now well recognised. Tribal communities use various plant resources for

medicinal purposes. Knowledge of traditional medicine is a valuable gift from God and a vital skill, predominantly found among many tribal communities in India, especially those residing in the Himalayan belt, eastern, and north-eastern parts of India. Much of this plant knowledge remains undocumented and still lies in darkness. According to the WHO, approximately 80% of the world's population relies on traditional medicine for their primary healthcare. In tribal livelihood systems, medicinal plants play an essential role in healthcare.

Table 9 below highlights the knowledge of tribal communities in traditional medicine. Traditional use of plants in the treatment and cure of many common ailments has greatly helped and supplemented the sustainability.

Table 9
Plants Used as Medicine Among the Tribal Communities in India

Name of the Trees (Local Name)	Scientific Name	Medicinal Uses (Tree Parts)	Treatment for
Saal	Shorea Robusta	Root Bark Leaf	Diarrhoea Vomiting Aneamia
Guava	Tsodium guajava	Leaf	Diarrhoea, Headache
Iswarimul	Aristolochia	Root	Diarrhoea
Iswar Tulsi	OscimumSanetum	Leaf	Fever
Marigold	Tadetes Patula	Leaf	Headache, Arthritis
Arahar	Cajanus Cajal	Miscellenous Parts	Jaundice
Palash	Butea monosperma	Bark & Leaf	Diarrhoea
Akando	Calotropis gigantia	Root, leaf, latex	Dog bite & tooth pain
Datura	Datura metel	Root & leaf	Dog bite & asthama

Sajna	Morninga	Leaf & seeds	Indigestion
Kalmegh	<i>Andrographis paniculata</i>	Root & leaf	Snake bite
Krishnachuura	<i>Caesalpinia pulcherrima</i>	Root & bark	Fever
Basak	<i>Adhatodavasika</i>	Leaf	Cold & Cough

Source: Referred and adopted from Sarkar, R., & Mandal, S. K. (2015, August). The Role of Indigenous Folk Medicinal Plants among Tribal Communities in West Bengal. *Lokodarpan*, V. Retrieved September 2022, from <https://www.researchgate.net>.

One can easily observe from Table 9 that the role of skills is best expressed in tribal communities that possess sound knowledge of using medicinal plants from their region and habitat for treating ailments.

Main Findings of the Study

1. Traditional skills determine the optimum utilisation of resources in a tribal livelihood system.
2. The core of sustainability is closely tied to developing skills for earning income and livelihood from nature's lap.
3. Identification skills are found to be very strong among the tribal community, which has allowed them to identify resources and make proper, judicious utilisation of the same.
4. Tribal livelihood in the context of skills revolves mainly around the natural capital stock.
5. Tribal communities for sustainability depend directly on the harvesting of natural resources, and the traditional skills that are acquired and practised by them act as an elixir for their survivability.
6. It is basically skills practised by the tribal communities that enable them to cope with and recover from stress created in their livelihood systems.

Concluding Remarks

Forest resources and land holdings continue to be essential assets for the tribal livelihood system and play a dominant role in measuring the social

and economic strength of a family. A few relevant skills, as discussed above, seem to provide sustainability to most tribal communities. However, from a skills perspective, skills related to harvesting natural resources, cultivating land, crafting, and knowledge of traditional plant-based medicines are highly relevant. They are mainly practised in their crude forms. Such skills do not ensure inter-generational sustainability in the long run. This is where skills training can play a game-changing role by providing rural tribal communities with training activities, which will not only lead to modernisation and improvement of their systems but also ensure a regular income, enhancing their capacity to cope and survive, leading to sustained intra- and inter-generational sustainability.

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