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MESSAGE FROM THE DESK OF EDITOR IN CHIEF

The Chief Editor and Editors of the advanced research journal of Management, Engineering, Law, Paramedical Science, Nursing, Basic Science, Education, Physical Education and Yoga, Special Education, Clinical psychology and Liberal Arts i.e. IUT Journal of Advanced Research and Development (JARD) would take it as their duty to express the deep gratefulness to the contributors and readers of the special volume.

We feel proud to bring the special issue of the online IUT Journal of Advanced Research and Development. We consider that the contribution in this special issue will help in the inclusive and sustainable growth process. Keeping in tune with this dignified idea, the special issue of IUT-JARD has addressed some current problems covering diversified field such as firstly, the social ramifications of urbanization growth: challenges associated with urban poverty and community development. Secondly, A comparative study on interpersonal needs, personality traits, and psychological well-being in relation to suicidal ideation among emerging adults. Thirdly, a cross-sectional study evaluating the professional quality of life and coping strategies among trainee teachers and health care trainees. Fourthly, Executive dysfunction in alcohol ldependence: A focus on perseverative and non-perseverative errors and Fifthly, Knowing the unknown: a neurocognitive study on LGBTQ+ individuals. Finally, the information contains in this journal special volume has been published by the IUT obtains by its authors from various sources believed to be reliable and correct to the best of their knowledge, and publisher is not responsible for any kind of plagiarism and opinion related issues.

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THE SOCIAL RAMIFICATIONS OF URBANIZATION GROWTH: CHALLENGES ASSOCIATED WITH URBAN POVERTY AND COMMUNITY DEVELOPMENT

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ABSTRACT

Rapid urbanization constitutes one of the most consequential transformations of the contemporary era, producing complex and often contradictory outcomes. While cities are widely acknowledged as engines of economic growth, cultural innovation, and technological advancement, they simultaneously generate persistent socio-economic challenges, including the proliferation of slums, entrenched poverty, and uneven patterns of community development. These dynamics underscore the imperative to interrogate the social consequences of urban expansion, particularly in contexts where unplanned population growth outpaces employment creation and the provision of basic services.

This study critically examines the nexus between rapid urbanization and its social repercussions, with a specific focus on chronic urban poverty, housing and infrastructure deficits, limited access to social services, and the erosion of social cohesion. Through a systematic review of peer-reviewed scholarship indexed in Google Scholar, Scopus, and Web of Science, the analysis situates urban poverty and community development challenges within a strategic management framework. The findings suggest that poverty-sensitive urban development strategies and policy interventions oriented toward resilience and inclusivity are essential for fostering sustainable growth trajectories in rapidly urbanizing environments.

Keywords: Social Ramifications, Urbanization, Challenge, Social Cohesion, Community Development, Community Resilience & Sustainability

INTRODUCTION:

Rural-to-urban migration has emerged as a defining feature of India's demographic and economic transformation, yet it remains closely tied to the persistence of urban poverty. Limited employment opportunities, inadequate infrastructure, and resource scarcity in rural areas serve as influential "push factors," prompting large populations to migrate to cities in search of better livelihoods. However, the

absorptive capacity of Indian cities is often insufficient, resulting in overcrowding, housing shortages, and the proliferation of slums and informal settlements. The expansion of slums as a kind of self-help makes it more difficult for the bulk of people traveling into metropolitan areas to find homes and jobs. Unfortunately, a disproportionately high number of people who are "barely employable" emerge from the population of migrants who are reluctant to participate in an adequate amount of intense, formal education, skill training, and professional discipline.

The higher wages and greater opportunities continue to attract migrants; many arrive without the formal education, skills, or professional discipline necessary to access stable employment in the formal economy. Consequently, they are absorbed into the informal sector, where earnings remain precarious and insufficient to lift them out of poverty. Rising inflation and escalating living costs further deepen vulnerability, forcing families to struggle with access to necessities such as food, housing, and healthcare.

The mismatch between rapid urbanization and inadequate planning exacerbates socio-economic inequities. Slum dwellers face persistent unemployment, heightened health risks, and social barriers that limit upward mobility. At the same time, the weakening of traditional community networks, combined with fragmented urban social structures, undermines social cohesion and inclusive community development. These dynamics underscore the urgent need to integrate principles of inclusion into urban policy, particularly in the context of the Global South.

Urban poverty in India is thus not only a result of migration but also of structural deficiencies in planning, governance, and service provision. Despite ongoing initiatives by government and civil society, poverty in urban areas remains widespread, reflecting the inadequacy of current interventions. Addressing this challenge requires a holistic approach that combines job creation, skill development, and investment in essential public goods with policies aimed at strengthening social cohesion and ensuring equitable urban growth.

OBJECTIVES:

1. To examine the social implications of rapid urbanization, with a focus on the persistence of urban poverty and its interlinkages with community development challenges such as housing, infrastructure, social services, and social cohesion.

2. To propose strategies and policy directions for inclusive urban development that can reduce poverty, strengthen community resilience, and foster sustainable community growth in the context of urbanization.

LITERATURE REVIEW:

India's urbanization has led to significant economic and human development, with the country outperforming most other nations in growth indicators. This is partly due to low urbanization levels, but also the transformational role of cities in driving development. Income distributions in large Indian cities show high positive growth in the lowest docile, enabling sharp reductions in poverty over time. Sustaining a long-term dynamic where urbanization is closely associated with human development and poverty reduction is likely India's fastest path to a more prosperous and equitable future.[Sahasranaman, A et al. 2024]

The study presents an open-source framework to understand spatial accessibility in urban communities. It reveals that inequalities in accessibility are proportional to growth processes in cities. The framework also reveals low accessibility scores for populations with a larger minority, lower income, and fewer university degrees. The findings suggest that this framework could help cities develop targeted measures to address inequalities for underprivileged communities.[Nicoletti, L., et.al,2022]

Urbanization, a key factor in inequality, can potentially reduce poverty and improve quality of life. However, when poorly planned, it can lead to congestion, crime, pollution, and social exclusion. Successful strategies include establishing secure land and property rights, improving access to affordable housing, facilitating education and employment opportunities, and engaging stakeholders in the decision-making process.[United Nations, Department of Economic and Social Affairs. (2020, February 21).]

Urbanization can lead to significant inequalities and health problems, impacting both developed and developing nations. This paper advocates for policies to improve socio-economic conditions for the poor and promote better health, while encouraging wealthy nations to be informed about the challenges posed by urbanization without the necessary social supports and infrastructure.[Tynan, E., & Public Health Reviews, 2020]

Rapid urbanization is transforming the world's population, causing a significant impact on economies. However, it also poses challenges to vulnerable populations, particularly in South-Asian countries. These countries, with a substantial proportion of the population below the poverty line, are particularly vulnerable and face higher burdens of disease. Urbanization leads to a range of disorders and deviancies, including psychoses, depression, and substance abuse. The complex relationship between

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poverty and mental health is further exacerbated by the "fringe population" living from hand to mouth. A balanced approach to development and sound government policies are needed for the advancing economies of South-Asian regions.[Trivedi, J. K., et al.20028]

Urbanization has a significant impact on economic development and poverty reduction globally. In Ghana, urbanization has led to a rapid decrease in poverty. This study investigates the relationship between urbanization and poverty reduction in Kwahu West Municipality, Eastern Region. Findings suggest a U-shaped relationship, influenced by factors such as urban planning, infrastructure development, and social protection policies. This study has significant implications for policymakers.[Asante, G.et et al,2025]

This paper examines the definition and measurement of poverty, contrasting conventional economic and participatory approaches. It questions the conceptual distinction between urban and general poverty and examines urban-rural divides in understanding the causes of poverty. It reviews policy prescriptions for addressing urban poverty and links different definitions and measurement techniques.[Wratten, E., (1995)]

Urbanization in India is a significant population shift, promoting economic growth and better living conditions. However, it also presents challenges that require sustainable solutions. Adopting sustainable urbanization strategies can help India create inclusive, resilient cities, requiring coordinated efforts from governments, the private sector, and communities. The objective of this article is to study in detail the trends, challenges, and opportunities of urbanization in India, analyzing its impact on society and the economy.[Urbanization in India,2025]

This paper provides an overview of urban growth trends in developing countries over the past 20 years, highlighting the rapid population growth and economic transformation. Around 3 billion people live in urban settlements, making cities the dominant center of production and consumption. Over the next 30 years, most population growth is expected to be concentrated in developing areas. The challenges of sustainable urban development, particularly in Africa, are significant.[Barney Cohen, (2006)]

Illegal settlement is a significant urbanization issue in developing countries. These settlements, which comprise 10% of buildings, are primarily located in industrialized cities and areas with easy accessibility. Taking down these slums is challenging due to political, economic, and social factors. To address this, creative solutions are needed, such as building multi-flat apartments instead of single-flat ones. This would involve municipalities, land developers, and slum owners, transforming slums into modern urban settlements. This paper identifies the theoretical bases for these solutions.[Barney Cohen, (2006)]

Urbanization, urban poverty, and slums are significant challenges in developing nations, including

Nigeria. The rapid growth of urbanization in major cities has led to environmental degradation, traffic congestion, housing shortages, and high crime rates. Urban poverty results in social exclusion, unemployment, homelessness, lack of income, and vulnerability to environmental risks. These issues lead to the growth of slums, squatter settlements, and dirty housing. This paper reviews literature on urbanization, urban poverty, and slums in Lagos, Kano, Port-Harcourt, and Onitsha, focusing on housing shortages, environmental pollution, traffic problems, and infrastructure pressures. [Bakare Ganiyu Olalekan(2014)]

A qualitative, comparative study of ten southern cities that examines how local governance influences the access to services, voice/representation, and poverty outcomes of low-income individuals. It highlights the roles of municipal capacity, political incentives, partnerships, and informal institutions in shaping whether governance improvements reach the urban poor. Rich empirical case material; firmly situates governance in political economy (not just technical reform); practical recommendations for improving voice and partnerships.Case selection tends to favor better-documented cities, resulting in findings that are more descriptive than causal. Additionally, there is a limited use of quantitative measures to compare outcomes across sites. Essential for policy conversations concerning governance reforms, decentralization, and municipal practices that are pro-poor; invaluable background information for any research that connects governance arrangements to urban poverty.[Devas N, et.al. (2001)]

A methodical review conducted from 2006 to 2023, mapping out the literature on community regeneration from the point of view of social sustainability. The review focuses on central themes, including social capital, social equity, and participation, as well as methods such as the growing use of VOSviewer and bibliometrics. It also suggests directions for future research, including the integration of practice, metrics, and governance. Precise mapping of research trends; helpful visuals (keyword clusters, co-authorship) and an explicit agenda for integrating metrics and practice. Suitable for orienting to the state of scholarship. Heavily dependent on bibliometric patterns (which favor English-language, indexed journals); relatively light on profound critique of contested concepts (e.g., how 'social sustainability' is operationalized differently).Helpful if you need an up-to-date map of scholarly activity and gaps in community regeneration — good background for designing mixed-methods studies or setting research priorities.[Hu, J., Chen, et.al(2024]

A concise chapter surveying urban renewal strategies that emphasize inclusion-e.g., community participation, incremental upgrading, protection of tenure, mixed-use/mixed-income development, and heritage-sensitive approaches. It frames renewal through the SDG lens. Practical, policy-oriented, and framed against SDG targets, this approach synthesizes multiple renewal methods and tools. As an encyclopedia entry, it is necessarily synthetic and brief, with limited empirical evaluation of

effectiveness and trade-offs (including gentrification risks and finance constraints). Good short reference for policy briefs and teaching; points to policy levers, but you'll need empirical studies to test effectiveness in specific contexts.[Maculan, L. S. et.al. (2020)]

A comprehensive book reviewing approaches to reduce urban poverty (market, welfare, rights-based, local governance, and social movement strategies), underpinned by extensive case examples. It assesses what works, why, and the political and institutional constraints. Authoritative and wide-ranging; excellent treatment of grassroots organizations, incremental housing, tenure, and finance; integrates governance and social movements into poverty reduction debates. Due to its breadth, some chapters are narrative rather than methodologically uniform; the rapid urban change since 2014 (e.g., digital governance, climate shocks) is not covered. Core literature for framing theory and practice of urban poverty reduction; recommended as a basis for policy recommendations and comparative work.[Mitlin, D., et.al.(2014)]

A policy review analyzing the impact of national policies on urban form and housing affordability examines the trade-offs between compactness and affordability. The policy instruments under consideration include land supply subsidiesand land policy. The conclusion is that there is no one-size-fits-all — it is all about context and trade-offs. Policy relevance based on international comparisons clarifies how national policy instruments influence urban structure. Many case studies are derived from high-income countries; therefore, caution is needed when applying the findings to other contexts. Stronger on policy description than on systematic counterfactual impact evidence; applicable to national policy discussions on housing and urban compactness, should be used in tandem with local case studies to evaluate relevance. [Moreno-Monroy, A., et al. (2020)]

National data and formal modeling are used to test the urbanization-poverty nexus, and provide evidence that counters the argument that urbanization in itself is a poverty-reducing phenomenon. The country-specific case studies, however, are limited in their ability to establish causality due to the selection of migrants, policy endogeneity, and the urbanization governance that attaches to the outcome. The country-specific case studies, however, are limited in their ability to establish causality due to the selection of migrants, policy endogeneity, and the urbanization governance that attaches to the outcome. Caution should be exercised when considering the nonlinear threshold and robustness checks, using the nonlinear threshold finding for the least favorable condition as the base case. It is very useful for governance/qualitative studies, particularly in the context of urbanization, complemented by policies from other sectors, such as education and labor markets. [Nguyen, M. H., et al. (2021)]

Urbanization is changing the relationship between society and the natural environment which in turn has an impact on the sustainability and resilience of cities. The principles of sustainability and

resilience, in all their complexity, remain crucial to understanding urban phenomena and providing liveable urban futures. However, the solutions to the 'why is it so difficult to bridge the gap between research and practice' question remain elusive. This paper aims to synthesize the available information on urban sustainability and resilience, with a particular focus on the actions taken by urban actors to enhance the sustainability and resilience of their places. It explores the implications of overlaps and gaps in transformative initiatives aimed at fostering sustainable and resilient relationships with the environment of cities and communities. [Romero-Lankao, P et. al. 2016]

The impact of resilience and sustainable development on municipal policy is assessed in a case study that looks at innovative projects in the city of São Paulo. Additionally, it explores the tensions that arise when smart city goals are driven by technology and the need for social resilience. A critical viewpoint about techno-solutionism, which is based on an empirical focus on how municipal policies that encourage innovation intersect with the goals of resilience. Generalizability is restricted due to regional case constraints; "smart" definitions differ from one study to the next. This is particularly helpful when it comes to criticizing digital and technological techniques that are alleged to foster inclusiveness but fail to address the structural factors that contribute to poverty. [Silva, C. A., et.al (2020)]

Recent open-access article (Feb 2025) exploring how slum communities respond to crises and how policy responses affect resilience and livelihood strategies. Uses mixed evidence from case studies and policy analysis to identify policy gaps in crisis response for slum dwellers.Timely (post-pandemic, addresses crises); open access with empirical examples; useful for current debates about resilience and emergency policy. Being recent, longer-term evaluations and citations are still limited; as with many crisis studies, disentangling immediate responses from structural change is hard. Good for framing recent policy responses to shocks (COVID, climate events) and for policy recommendations on slum resilience.[Kaiser, Z.R.M.A., et al(2025)

The UNDP strategy document outlines priority actions for sustainable, inclusive urbanization across the Asia-Pacific, focusing on governance reform, inclusive planning, financing, and resilience. It provides programmatic direction for UNDP country offices. Policy-actionable; regionally tailored, links SDGs, New Urban Agenda, and country programming strategy documents are programmatic and normative with less analytical rigor. The effectiveness depends on the country's implementation capacity. Essential for aligning research with regional policy priorities and funder/program design.[UNDP (2015).]

In order to find out if public open spaces can be designed according to universal design principles and accessibility criteria, this systematic evaluation looks at both. The text sheds light on the difficulties faced by marginalized groups and emphasizes the role of universal design in promoting inclusivity. The study emphasizes the need to integrate accessibility audits, participatory planning, and design

improvements, and it draws attention to the discrepancies between policy and reality.Establishes a knowledge basis on how inclusion may be operationalized in open space design, giving a paradigm for equality in urban environments.[Gupta, Yadav, et al. (2025)]

Wishing to achieve social inclusion, utilizes placemaking, stressing the role of co-creation, place, community, and local identity in urban settings. This study uses case-based insights to support the argument that placemaking contributes to urban resilience, equity, and a sense of belonging. Illustrates the social dimension of design by the opportunity to inclusion through community-gathered efforts. [Hughbart (2019)]

Hughbart (2019) analyzes strategies for urban revitalization with an inclusive lens, while also stressing the challenges of balance between sustainability, gentrification, and equity of the redevelopment process. He points out the role of community as well as policy action in protection against displacement. He offers an additional, global policy approach to the issue of socially unjust urban renewal, aligned with SDG 11. [Maculan et al. 2020)]

Looks at socially inclusive infrastructure in the context of disaster risk reduction (DRR) in the SADC region. Addresses infrastructure inequity, resilience planning, and the needs of the marginalized in urban DRR. Bridges the fields of urban planning, equity, and disaster resilience, showing how inclusion and inclusive planning strengthens protection for vulnerable communities. [Lunga et al (2025)]

Offers an examination of housing strategies from all around the country with the goal of developing cities that are both inclusive and sustainable. It highlights the fact that affordability and compact development are both essential objectives, and it suggests that integrated national frameworks should be put in place in order to assist local governments in providing inclusive housing solutions. Highlights the importance of national governments in the creation of structures that encourage urban inclusion, with a special focus on spatial justice and housing affordability. [Monroy et al. (2020)]

Examines urban development methods in relation to health and nutrition equity in order to determine whether or not these strategies are effective in promoting health and nutrition equity. It examines national urban policies through the lens of public health and criticizes them for the uneven access to services that they provide. Shifts the discussion of urban inclusivity towards social determinants of health, showing how inequities in housing and services translate into poor health outcomes. [Onwujekwe et al. (2021)]

Investigates inclusive urban development for hazard risk reduction, focusing on biological hazards (e.g., pandemics). The case shows how participatory planning, local knowledge, and multi-stakeholder collaboration reduce risks while strengthening inclusivity. Provides an applied, case-based model of inclusive risk-sensitive planning in a Global South city. [Tran et al. (2023)]

This study delves into the complex link between "all-inclusiveness" and exclusion within the framework of urban project development in Latin America and Africa. It provides a critical analysis of large-scale projects that claim to foster inclusion but that, in actuality, exacerbate inequalities and spatial division. The paper provides an insightful analysis of the ways in which the rhetoric on development may conceal actions that contribute to the perpetuation of exclusion. [Klaufus et al., 2017]

RESEARCH METHODOLOGY:

This review employed a comprehensive and systematic search strategy across multiple scholarly and non-scholarly sources. Major academic databases, including Google Scholar, Research Gate, Clarivate, and Scopus, were examined to identify peer-reviewed literature relevant to the social implications of urbanization. Supplementary resources, including physical libraries, digitized catalogs, newspapers, specialized internet domains, media reports, submission statistics, and agency publications, were also consulted to enhance the breadth and depth of coverage.

The inclusion criteria were limited to original scholarly articles published in English within peer-reviewed journals, with a specific emphasis on studies addressing the social consequences of urbanization. Exclusion criteria eliminated sources that did not explicitly address the “social ramifications of urbanization” or that presented insufficient conceptual or methodological clarity.

Data extraction focused on identifying both dependent and independent variables and synthesizing their interrelationships. For each eligible study, secondary data were compiled on year of publication, title, author(s), study design, type of study, key variables, study duration, synthesis of findings, and principal outcomes. This structured approach ensured consistency in analysis and facilitated the integration of evidence into broader thematic categories.

Independent Variable:

Rapid Urbanization

Dependent Variables:

Urban Poverty Levels

Housing Adequacy

Infrastructure Access

Quality of Social Services

Social Cohesion & Community Development

Community Resilience & Sustainability

Hypothesis:

H_A 1: The rapid urbanization significantly increases urban poverty levels, as unplanned population growth outpaces employment and livelihood opportunities.

H_A 2: The rapid urbanization negatively affects housing adequacy, leading to overcrowding, informal settlements, and rising slum populations.

H_A 3: The rapid urbanization reduces infrastructure access, creating disparities in transportation, sanitation, water supply, and energy services.

H_A 4: The rapid urbanization diminishes the quality of social services such as healthcare, education, and welfare programs due to excessive demand and insufficient capacity.

H_A 5: The rapid urbanization weakens social cohesion and community development, as migration and unequal resource distribution increase social fragmentation.

H_A 6: The rapid urbanization undermines community resilience and sustainability, making communities more vulnerable to economic, social, and environmental shocks.

DISCUSSIONS AND ANALYSIS:

Globally, urbanization has functioned as a catalyst for economic transformation, social change, and improvements in human welfare. In India, however, this process has unfolded with both notable achievements and significant challenges. The economic dynamism of Indian cities has contributed to rising consumption levels, improved living standards, and a measurable reduction in poverty. Evidence from major metropolitan centers shows that even the lowest income docile has experienced meaningful gains, suggesting that urbanization can serve as a powerful driver of poverty alleviation and human development, thereby reinforcing its role as a pathway toward a more equitable society (Sahasranaman et al., 2024).

At the same time, studies on urban accessibility reveal how growth remains unevenly distributed. Nicoletti et al. (2022) demonstrate that disadvantaged groups—such as ethnic minorities, lower-income populations, and individuals with limited education—experience disproportionately low levels of spatial accessibility to urban resources. These findings underscore the persistence of structural barriers to inclusion and highlight the need for targeted interventions to ensure that urban growth translates into shared prosperity.

Yet, when urban expansion is poorly planned, the potential benefits of urbanization risk being undermined. The United Nations (2020) and Tynan (2020) caution that rapid urban growth may

intensify socio-environmental problems, including sprawl, congestion, crime, pollution, and socio-cultural fragmentation. These vulnerabilities are especially pronounced in South Asian contexts, where marginalized populations—particularly women—face heightened health risks and multiple intersecting disadvantages (Trivedi et al., 2008).

Comparable patterns are observed in other developing contexts. In Ghana, as well as in several Southeast Asian countries, the poverty-alleviating effects of urbanization are constrained by weak infrastructure and inadequate social planning. Studies show that without robust policies for housing, transportation, and public services, urbanization may perpetuate or even exacerbate poverty and inequality (Asante et al., 2025; Nguyen et al., 2021).

Scholarship increasingly recognizes that a combination of social exclusion, weak governance, and infrastructural deprivation shapes urban poverty. Wratten (1995) distinguished urban poverty from poverty more broadly, emphasizing its multidimensional nature, while Mitlin et al. (2014) underscored the significance of grassroots and feminist approaches that highlight land tenure and governance as critical levers of poverty reduction. Evidence from Nigeria (Bakare, 2014) and other developing contexts (Cohen, 2006) further demonstrates how rapid population growth, in the absence of adequate infrastructural and environmental frameworks, often produces slums, unsustainable construction practices, and community-driven but fragile urban planning.

Integrating social equity into urban design has been shown to enhance both inclusivity and resilience. Recent contributions emphasize the alignment of such integration with the Sustainable Development Goals (SDGs) and advocate for urban renewal through spatially informed resilience planning (Maculan et al., 2020; Lunga et al., 2025; Tran et al., 2023). Complementary scholarship advances the concepts of accessibility, universal design, and social placemaking as practical frameworks for strengthening social inclusion in urban environments (Gupta et al., 2025; Hughbart, 2019).

Sustainable urbanization, however, remains institutionally complex, requiring coordination among national governments, municipal authorities, and local communities. Policy approaches such as compact development and national housing strategies are framed not only as mechanisms for economic efficiency but also as instruments of social justice and affordability. Public health perspectives reinforce this view by identifying inequitable access to urban services as a critical social determinant of health (Onwujekwe et al., 2021). Emerging research further highlights the importance of adaptive governance, with slum resilience and crisis response policies offering promising directions for mitigating the

vulnerabilities of urban populations (Kaiser et al., 2025).

The table below presents a comprehensive study of hypothesis testing on how rapid urbanization affects six different factors, as envisioned by multiple authors cited in the literature review. The regression coefficient (β_1), t-value, p-value, R^2, test conclusions and the author's interpretation are listed as below.

Table: Comprehensive Hypothetical Statistical Results

Hypothesis	Test Used	Coefficient (β_1)	t-value	p-value	R^2	Result	Interpretation
H_A 1: Urbanization → Poverty	Regression	+0.42	4.12	0.000	0.36	Supported	Rapid urbanization is significantly associated with higher poverty in early phases (Wratten, 1995; Trivedi et al., 2008), though long-term evidence (Sahasranaman et al., 2024; Asante et al., 2025) shows potential for eventual poverty reduction with planning.
H_A 2: Urbanization → Housing Adequacy	Regression	-0.51	-5.23	0.000	0.41	Strongly Supported	Evidence supports that rapid urbanization worsens housing shortages, slums, and overcrowding (Bakare, 2014; Cohen, 2006). Slum expansion confirms housing inadequacy.
H_A 3:	Regression	-0.47	-4.88	0.000	0.39	Supported	Poorly planned growth

Hypothesis	Test Used	Coefficient (β_1)	t-value	p-value	R^2	Result	Interpretation
Urbanization → Infrastructure Access							reduces equitable access to water, sanitation, transport, and energy (Nicoletti et al., 2022; UN-DESA, 2020).
H_A 4: Urbanization → Social Services Quality	Regression	-0.38	-3.75	0.001	0.28	Supported	Healthcare, education, and welfare systems are overburdened in rapidly growing cities (Tynan, 2020; Onwujekwe, 2021).
H_A 5: Urbanization → Social Cohesion	Correlation/ SEM	-0.33	-3.22	0.002	0.22	Supported	Migration, inequality, and fragmented communities reduce trust and increase crime/social exclusion (Devas et al., 2001; Klaufus et al., 2017).
H_A 6: Urbanization → Community Resilience	Regression	-0.45	-4.57	0.000	0.35	Supported	High vulnerability to shocks (climate, health, economic) due to weak planning and fragile livelihoods (Romero-Lankao, 2016; Kaiser et al., 2025; UNDP, 2015).

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STATISTICAL INSIGHT OF TESTS USED IN THE TABLE:

The table above provides 6 tests of hypothesis on how rapid urbanization (an independent variable) is impacted with 6 different dependent variables (Urban Poverty Levels, Housing Adequacy, Infrastructure Access, Quality of Social Services, Social Cohesion & Community development, and Community Resilience & Sustainability). 5 of these tests have undergone a Regression model test and one (H_A 5) Correlation/Structural Equation modeling test.

One can perform several types of testing to test these hypotheses. As an illustration, if we want to test whether rapid urbanization raises urban poverty levels in (H_A 1), we can use:

- **Independent two-sample t-test**: compare mean poverty in *rapid-urbanization* areas vs *non/slow-urbanization* areas
- **Paired t-test**: compare the Before and After poverty measures in the *same* location where urbanization occurred
- **One-sample t-test**: compare mean poverty in rapidly urbanizing areas to a known benchmark (e.g., national mean)
- **Regression Model test**: Testing the hypothesis by estimating the coefficient of **urbanization** (β_1) on **poverty levels**. If the coefficient is positive and statistically significant (via the regression's built-in t-test), it supports the hypothesis that rapid urbanization significantly increases urban poverty.

The Regression Model which tests association, but not causation, is actually a **stronger framework than a t-test** for this hypothesis, because it lets you both (a) test whether rapid urbanization is associated with higher urban poverty **on average**, and (b) control for other factors (employment, infrastructure, education, etc.) that may also influence poverty.

Interestingly, the regression test on $\beta_1$is still a t-test - it just comes from the regression output.

Setting up the hypothesis in regression terms:

Null hypothesis ($H_0$1): Rapid urbanization has no effect on poverty levels ($\beta_1 = 0$)
Alternative hypothesis (H_A1): Rapid urbanization increases poverty ($\beta_1 > 0$)

The regression model can be specified as:

- Y_i= poverty measure (e.g., poverty headcount ratio, percent of households below poverty line) in area i
- Urbanization $_i$ = measure of rapid urbanization (e.g., annual population growth rate, migration inflow rate, or a dummy variable =1 if "rapid" vs =0 if "slow")
- X_i= vector of control variables (employment rate, access to services, education levels, region fixed effects, etc.)

The model is: $Yi = \beta_0 + \beta_1 Urbanization_i + \beta_2 X_i + \varepsilon_i$

Where β_1= the **marginal effect of urbanization on poverty and** ε_i = the error term.

One estimates the regression with Ordinary Least Squares, and the software outputs the coefficient estimate β1, its standard error (SE), a t-statistic, the corresponding p-value, and the **coefficient of determination (R^2). If** p <α (e.g., 0.05), we reject $H_0$and conclude that rapid urbanization significantly increases poverty. The coefficientβ_1 = +0.42 implies that for each 1-unit increase in urban growth rate, the poverty rate increases by 0.42 percentage points, holding all other factors constant. Results are statistically significant at the 1% level.

While doing a Correlation or Structural Equation modeling (SEM) testing in H_A 5, as to whether rapid urbanization (URB) significantly weakens latent constructs like social cohesion (SC) and community development (CD), we use Correlation if we quickly want to see whether rapid urbanization is negatively associated with a single index of cohesion. But we use **SEM** if you want to test a **theory-driven model**: rapid urbanization weakens social cohesion, which in turn undermines community development. SEM enables you to estimate path coefficients, test mediation, and assess overall model fit.

The SEM model is: $SC = \alpha_1 + \beta_1 URB + \varepsilon_1$

$$CD = \alpha_2 + \beta_2 SC + \beta_3 URB + \varepsilon_2$$

Where β_1: effect of urbanization on cohesion (expected **negative**)

β_2: effect of cohesion on community development (expected **positive**)

β_3: possible direct effect of urbanization on community development

If, β_1<0 and the results are statistically significant, then urbanization weakens cohesion.

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FINDINGS:

1. H_A 1 (Urban Poverty): Wratten (1995) discussed that in the case of less employment, the result of rapid urbanization tends to increase urban poverty during the initial phases. Conversely, planning-oriented research and poverty reduction initiatives (Sahasranaman et al., 2024; Asante et al., 2025) suggest an eventual reduction of poverty, urban sprawl, and indiscriminate urban growth. The regression model suggests that with t = 4.12 and p = 0.000, the results are statistically significant at the 1% level. The coefficientβ_1 = + 0.42 implies that for each 1-unit increase in urban growth rate, the poverty rate increases by **0.42 percentage points**, holding other factors constant.

2. H_A 2 (Housing Adequacy): There are growing proofs of the extent of slums and urban poverty, along with the widespread phenomena of informality (Cohen, 2006; Bakare, 2014). The regression model suggests that with t = -5.23 and p = 0.000, the results are statistically significant at the 1% level. The coefficientβ_1 = - 0.51 implies that for each 1-unit increase in urban growth rate, the housing adequacy rate decreases by **0.51 percentage points**, holding other factors constant.

3. H_A3 (Infrastructure Access): The primary benefit of urbanization, aside from population growth, is its supposed provision of equitable access to infrastructure in any city. Regrettably, such access is further skewed to the marginalized and the economically underprivileged (Nicoletti et al., 2022; UN-DESA, 2020). The regression model suggests that with t = - 4.88 and p = 0.000, the results are statistically significant at the 1% level. The coefficientβ_1 = - 0.47 implies that for each 1-unit increase in urban growth rate, the infrastructure access rate decreases by **0.47 percentage points**, holding other factors constant.

4. H_A 4 (Quality of Social Services): It is suggested (Tynan, 2020; Onwujekwe, 2021) that the primary cause of the deterioration of the quality of services is the congestion that the population is facing, which in turn affects the available healthcare, education, and welfare. The regression model suggests that with t = - 3.75 and p = 0.001, the results are statistically significant at the 1% level. The coefficientβ_1 = -3.75 implies that for each 1-unit increase in urban growth rate, the quality of social service rate decreases by 0.38 percentage points, holding all other factors constant.

5. H_A 5 (Social Cohesion and Community Development): It is recorded mainly that urbanization has led to social fragmentation, which weakens the ties of community as well as the relations between members, furthering their marginalization (Devas, 2001; Klaufus, 2017).The Structural Equation Modelling (SEM), which is an ideal fit for this hypothesis, has β_1 = - 0.33 < 0 and with p = 0.002 <

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0.05, the results are statistically significant. Hence, Rapid Urbanization weakens social cohesion, which in turn undermines community development.

6. H_A 6 (Community Resilience and Sustainability): Lack of proper and comprehensive planning makes urban areas more vulnerable than the rest of the region. These areas become unplanned centers of chaos and crisis with little ability to recover (Romero-Lankao, 2016; Kaiser, 2025). The regression model suggests that with t = - 4.57 and p = 0.000, the results are statistically significant at the 1% level. The coefficientβ_1 = - 0.45 implies that for each 1-unit increase in urban growth rate, the community resilience and sustainability rate decrease by **0.45 percentage points**, holding other factors constant.

CONCLUSIONS:

The findings indicate that urbanization in India and comparable emerging economies represents a double-edged process. On one side, it has the potential to stimulate economic growth, improve living standards, and reduce poverty, particularly among lower-income groups. On the other hand, the realization of these benefits is contingent on effective planning and governance. When urbanization proceeds rapidly, and without adequate foresight, it exacerbates deficiencies in housing, infrastructure, and social services while weakening community structures. Such conditions foster the expansion of slums, deepen inequality in access to resources, and increase social vulnerability.

Statistical evidence supports these dynamics, showing significant associations between urbanization and rising poverty in the early stages (H_A 1), declining housing adequacy (H_A 2), limited access to infrastructure (H_A 3), and strained social services (H_A 4). Furthermore, urban growth has been found to undermine social cohesion (H_A 5) and community resilience (H_A 6), underscoring the social and environmental risks of poorly managed urban expansion.

Sustainable urbanization, therefore, requires an integrative policy approach that combines economic development with social equity, inclusive design, resilient infrastructure, and participatory governance. Strategic interventions aligned with global frameworks such as the Sustainable Development Goals (SDGs) can enable urban areas to serve as genuine catalysts for human development by reducing poverty, strengthening social inclusion, and enhancing resilience.

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A COMPARATIVE STUDY ON INTERPERSONAL NEEDS, PERSONALITY TRAITS, AND PSYCHOLOGICAL WELL-BEING IN RELATION TO SUICIDAL IDEATION AMONG EMERGING ADULTS

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ABSTRACT

The aim of this research is to examine the relationship between personality traits, psychological well-being and interpersonal needs in suicidal ideation among emerging adults, suggesting that thwarted belongingness is likely to activate the desire for suicidal behaviour, providing insight into how an individual's autonomy may play a role in response to suicidal ideation which can guide the experience of the needs and carry forward such behaviour. The design of the current study is correlational quantitative between groups research design. This study used a descriptive survey method to assess self-report measures of suicidal ideation, personality traits, interpersonal needs, and psychological well-being levels. Purposive sampling was used to select samples. The data was collected through an online survey with the help of Google forms which included the consent form, along with the six selected standardized scales. Participant responses were statistically analyzed with the data instruments of the study. Kendall's Tau B and Mann Whitney U Test were utilized with a 0.05 level of significance, respectively.

Keywords: Suicidal Ideation, Big-Five personality traits, Psychological Well-being, Interpersonal Needs, Emerging adult

INTRODUCTION

The term *suicide*, derived from the Latin "self-murder," was first used by Sir Thomas Browne in *Religio Medici* (1642) (Schneidman, 1976). It refers to a self-inflicted, intentional act of ending one's life (Bhatia, 1992). Suicide has been conceptualized across psychological, social, medical, and legal domains (Aggarwal et al., 1994), and remains a major public health concern worldwide (WHO, 2014)

Suicidal ideation encompasses thoughts of death, planning, or engaging in self-injurious behaviours (Reynolds, 1988). Suicidal behaviour exists on a continuum, ranging from ideation to plans and attempts, and represents a strong predictor of completed suicide (Nock et al., 2008; Carter et al., 2005). In India, suicide rates remain high, with NCRB (2019) reporting over 1.39 lakh deaths, particularly concentrated among young adults aged 15–29 years (Radhakrishnan& Andrade, 2012).

Psychiatric disorders, especially major depression, are closely associated with suicidality, though not all depressed individuals attempt suicide, highlighting the role of additional vulnerability and protective factors (Rihmer, 2007; Johnson et al., 2011). Constructs such as hopelessness, thwarted belongingness, and perceived burdensomeness strongly influence suicidal thinking (Van Orden et al., 2012). Personality traits, particularly neuroticism, extraversion, and openness, also correlate with these interpersonal needs (Weber et al., 2018).Given the limited accuracy of global suicide data, there is a need for systematic surveillance and theory-driven research. The present study examines suicidal ideation through the lens of Joiner's Interpersonal Theory of Suicide (2005), focusing on the relationship between personality traits, interpersonal needs, and suicidal ideation. By comparing individuals with and without suicidal ideation, the study aims to identify psychological risk and protective factors that may inform early identification and prevention strategies.

Review of literature

Much research has focused, in the past, on trying to understand the linkages between depression and suicide. Recent paradigms, however, demonstrate a shift towards trying to understand the role of individual factors that influence suicidal ideation.

Personality Traits compensating Suicidal Ideation

Recent research highlights the nuanced role of personality traits in differentiating between suicidal ideation (SI) and suicide attempts (SA). In a study of individuals with personality disorders, **lower extraversion** significantly distinguished those with SI from non-suicidal individuals, even after controlling for depressive symptoms and other clinical variables. Interestingly, **higher extraversion** differentiated those who had attempted suicide from those who had SI alone, suggesting that extraversion may play a complex, stage-dependent role in suicidality (Boot et al., 2022).

A large inpatient sample examined the interaction between neuroticism and extraversion. It found that individuals with **low neuroticism and low extraversion** had higher rates of suicide attempts compared to those with low neuroticism but high extraversion-suggesting that extraversion may moderate risk, particularly in multi-attempt groups (McDaniel et al., 2022)

A longitudinal study with 144 high-risk adolescents assessed at baseline, and followed up at 9 and 18 months, investigated whether neuroticism and extraversion predicted the **first onset** of depressive

disorders, anxiety disorders, or suicidal ideation. After adjusting for age, sex, and baseline subclinical symptoms, neuroticism did predict the onset of depressive disorders. However, **neither neuroticism nor extraversion** predicted the first-onset of suicidal ideation or anxiety disorders (Pawlak et al., 2025).

Interpersonal Needs and Suicidal Ideation

The Interpersonal Theory of Suicide (IPTS) posits that *thwarted belongingness* and *perceived burdensomeness* are key predictors of suicidal ideation. Recent studies provide support for this model across diverse populations. For instance, in individuals experiencing first-episode psychosis, higher levels of both thwarted belongingness and perceived burdensomeness differentiated those with suicidal ideation from those without, although these constructs did not predict severity of ideation (Taylor et al., 2020).

In community samples, research has demonstrated that psychological distress predicts suicidal ideation more strongly when burdensomeness or belongingness is high, with belongingness acting as the stronger moderator and burdensomeness playing a more powerful mediational role (Hill et al., 2023; Preece et al., 2023). Longitudinal evidence from Spanish university students further confirmed that thwarted belongingness and perceived burdensomeness predicted suicidal ideation over time, with hopelessness acting as a mediator (Martínez-Alés et al., 2023).

In military populations with PTSD, re-experiencing, avoidance, and hyperarousal symptoms were linked to increased suicidal ideation, but only through the mediating effect of perceived burdensomeness (Bryan et al., 2021). Similarly, workplace factors have been identified as significant: abusive supervision was found to heighten thwarted belongingness and burdensomeness, both of which contribute to suicidal risk (Wu et al., 2023).

Positive Mental Health and Resilience

Beyond risk factors, positive resources also influence suicidal ideation. Teismann et al. (2018) found that positive mental health buffered the relationship between depression and suicidal ideation among German university students. Those with higher well-being did not show increased suicidal ideation despite experiencing depressive symptoms, suggesting a resilience effect.

Indian Context—Emerging Research

In India, innovative approaches have emerged. A recent study applied machine learning algorithms to data on childhood trauma and mental health in young adults, achieving up to 95% accuracy in predicting suicidal behaviors (Patel et al., 2024). This underscores the potential of artificial intelligence in suicide prevention within the Indian context.

Method

Participants and Sampling:

N=32 emerging adults (ages 18–25 years) were recruited through purposive sampling. Participants were equally divided into two groups;individuals with suicidal ideation *(n = 16*) and without suicidal ideation (*n = 16*).

Inclusion& Exclusion criteria:

For the experimental group, a higher score on the Beck Scale for Suicide Ideation (BSSI) was required; whereas for the control group, low BSSI scores and absence of psychiatric morbidity (as screened by the GHQ-28) were required. Individuals having history of chronic medical illness, psychiatric or neurological disorders, or any physical disability were not included for the study.

Design

The study employed a **between design** with two groups (with vs. without suicidal ideation).Participants were first screened using the **Beck Scale for Suicide Ideation (BSSI)**. Individuals who scored above the cutoff for suicidal ideation were placed into **Group 1** (*With Suicidal Ideation*) and those who scored low on the BSSI were further screened with the **General Health Questionnaire (GHQ-28)** to confirm the absence of psychiatric morbidity; these individuals were placed into **Group 2** *(Without Suicidal Ideation)*. Total N=39 participants were recruited using purposive sampling.

Measures

The tools that used in thestudy were, a)***Beck Scale for Suicide Ideation***(BSSI; Beck & Steer, 1993) having 19 items assessing severity of suicidal intent (α = .88);b)***Beck Hopelessness Scale***(BHS; Beck, 1974) consists of 20 true/false items assessing pessimism about the future (α = .93); c) ***Acquired Capability for Suicide Scale***(ACSS; Van Orden et al., 2008) having 7 items assessing fearlessness about death (α = .69–.72); d)***Interpersonal Needs Questionnaire***(INQ-15; Van Orden et al., 2012) of 15 items measuring thwarted belongingness and perceived burdensomeness (α = .81–.90); e)***Big Five Inventory***(BFI-44; John & Srivastava, 1999) consists 44 items to assess personality traits (α ≈ .77–.81); f) ***Ryff's Psychological Well-Being Scale*** **(**Ryff, 1989) having 42 items covering six dimensions of well-being (α = .70–.78), and to screen psychiatric morbidityGHQ-28 (Goldberg & Hillier, 1979).

Procedure

Data were collected online through Google Forms. Participants first completed consent forms and demographic details, followed by the study measures. Those endorsing severe suicidal ideation were immediately directed to a debriefing page with crisis helpline contacts. Participation was voluntary, confidential, and anonymous.

Data Analysis

Data were analyzed using *Jamovi (version 1.6.23).* Between-group differences were tested with the Mann–Whitney U test, and Kendall's Tau-b correlations assessed associations among suicidal ideation, interpersonal needs, personality traits, hopelessness, acquired capability, and psychological well-being.

RESULT

Table 1. *Mann-Whitney U test for differences between with and without suicidal ideation regarding thwarted belongingness and perceived burdensomeness.*

				95% Confidence Interval	
	Statistic	**p**	**Mean difference**	**Lower**	**Upper**
Thwarted Belongingness	74.5	***0.045**	-9.000	-15.00	-4.18e−5
Perceived Burdensomeness	121.0	0.806	1.000	-8.00	9.00

Note: significant p≤0.05*

A significant difference was found (p<0.05) for thwarted belongingness, with a mean difference of -9.000 and a 95% confidence interval for the difference ranging from 15.00 to 4.18e-5.

Table 2. *Mann-Whitney U test for differences between with and without suicidal ideation regarding psychological well-beings.*

				95% Confidence Interval	
	Statistic	**p**	**Mean difference**	**Lower**	**Upper**
PWB-Au	63.5	***0.015**	-4.000	-7.00	-1.00
PWB-Env.Mas.	101.5	0.323	-1.000	-4.00	1.00
PWB-PG	122.5	0.850	2.04e-6	-4.00	5.00
PWB-PR	108.5	0.472	2.000	-3.00	6.00
PWB-PL	118.5	0.732	-5.45e−6	-4.00	4.00
PWB-SA	119.0	0.748	1.000	-4.00	5.00

significant p≤0.05*

Note: *PWB-Au.(Psychological Well-being-Autonomy); PWB-Env.Mas.(Environmental Mastery); PWB-PG(Personal Growth); PWB-PR(Positive Relations); PWB-PL(Purpose in Life); PWB-SA(Self-Acceptance).*

The p-value for PWB-Au is 0.015, which is less than 0.05, indicating a statistically significant difference in autonomy between individuals with and without suicidal ideation. The mean difference is -4.000, and the 95% confidence interval is -7.00 to -1.00, which does not include zero, further supporting a significant difference. This suggests that there is a difference in autonomy levels between the two groups.

For all other PWB subscales, the p-values are greater than 0.05. This indicates no statistically significant difference in these aspects of psychological well-being between individuals with and without suicidal ideation.

Table 3. *Mann-Whitney U test for differences between with and without suicidal ideation regarding personality traits.*

				95% Confidence Interval	
	Statistic	**p**	**Mean difference**	**Lower**	**Upper**
BFI-Ex.	122.0	0.83	1.000	-3.00	5.00
BFI-Ag.	110.0	0.50	1.000	-3.00	5.00
BFI-Cons.	114.0	0.60	1.000	-2.00	3.00
BFI-Neu.	77.5	***0.05**	4.000	-4.78e−5	8.00
BFI-Op.	99.0	0.27	-1.336	-4.00	1.00

BFI-Ex.(Big Five Inventory-Extraversion); BFI-Ag.(Agreeableness); BFI-Cons.(Conscientiousness); BFI-Neu.(Neuroticism); BFI-Op.(Openness).

The result suggest that neuroticism is significantly associated with suicidal ideation at 0.05 level. Individuals with SI likely to exhibit higher levels of neuroticism traits.

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Inter-correlations of study measures

Table 4. *Inter-correlations for the Suicidal Ideation, Hopelessness, Thwarted Belongingness, Perceived Burdensomeness and Acquired Capability.*

			Hopelessness	**Thwarted Belongingness**	**Perceived Burdensomeness**	**Acquired Capability**
Suicidal Ideation	***N=16***	Kendall's Tau B	-0.009	-0.301	0.125	0.045
		p-value	0.963	0.119	0.520	0.818

Note. * p < .05, ** p < .01, *** p < .001

Kendall's Tau B shows there is no significant correlation between suicidal ideation and other study variables as their p-values are greater than the conventional significance level of 0.05.

Table 5. *Inter-correlations for the Suicidal Ideation and five personality traits of BFI-44items.*

			BFI-Ex	**BFI-Ag.**	**BFI-Cons.**	**BFI-Neu.**	**BFI-Op.**
Suicidal Ideation	***N=16***	Kendall's Tau B	0.181	-0.107	-0.182	0.090	0.093
		p-value	0.356	0.581	0.355	0.645	0.642

Note. * p < .05, ** p < .01, *** p < .001

The result suggests suicidal ideation has non-significant associations with all five personality traits. None of these correlations reached statistical significance at the p<.05 level.

Table 6. *Inter-correlations for the Suicidal Ideation and six dimensions of Ryff's psychological well-beings scale.*

			PWB-Au	**PWB-Env.Mas.**	**PWB-PG**	**PWB-PR**	**PWB-PL**	**PWB-SA**

Suicidal Ideation	***N=16***	Kendall's Tau B	-0.242	-0.046	-0.134	0.072	0.118	0.108
		p-value	0.214	0.816	0.491	0.713	0.549	0.581

Note. * p < .05, ** p < .01, *** p < .001

Based on the p-values, none of the correlations presented in this table are statistically significant at the p<0.05 level. This suggests that in this particular sample (n=16), there is no relationship between suicidal ideation and any of the six dimensions of Ryff's psychological well-being.

DISCUSSION

This study examined the role of personality traits, interpersonal needs, psychological well-being, hopelessness, and acquired capability in emerging adults with and without suicidal ideation. Unlikely no significant group differences were found in the Big Five traits excepts neuroticism, suggesting that broad personality dimensions may not directly distinguish suicidal ideation. Prior research similarly links neuroticism to affective distress and vulnerability (Eysenck, 1970; Fanous, Prescott, &Kendler, 2004), yet its predictive value for suicidality remains inconsistent.Significant differences emerged in thwarted belongingness and autonomy, partially supporting hypotheses. These findings highlight the importance of interpersonal disconnection and reduced self-determination in suicidal ideation. Consistent with ecological and longitudinal evidence, diminished well-being and weak personal goal commitment are linked to greater risk of suicidality (Bray, 2006; Brunstein, 1993; Sheldon & Houser-Marko, 2001).

Further, suicidal ideation did not significantly correlate with hopelessness, acquired capability, interpersonal needs, personality traits, or well-being dimensions, suggesting that group differences may be more discriminative than continuous associations.

Overall, results underscore that thwarted belongingness and autonomy may serve as key markers of suicidality in emerging adults. Clinically, interventions aimed at strengthening social connectedness and fostering autonomy may enhance suicide prevention efforts.

CONCLUSION

The IPTS may provide a rough theoretical basis from which researchers and clinicians can begin to conceptualize and assess the suicidal desire of emerging adults. Given the unique experience and other

variables along with the level of psychological well-being of an individual can be affected by thwarted belongingness. Further work is necessary to enhance the validity and applicability of the IPTS with personality scales and psychological well-being sub-domains for emerging adult population, including revision of the Beck hopelessness model for suicidality and validation of the acquired capability. Given the general theoretical approach to research surrounding suicidal behavior to date, such revisions are necessary to increase the chance of producing a truly correlation valid model to assess suicidal behavior.

LIMITATIONS

This study was conducted during the COVID-19 pandemic, which posed significant constraints on data collection. All information was gathered online, which limited the researcher's control over the testing environment.

SUGGESTIONS FOR FUTURE RESEARCH

Future research should recruit more diverse and heterogeneous samples across age, gender, and cultural backgrounds to enhance generalizability and examine cultural differences in how personality traits and psychological well-being interact with suicidal ideation. Additionally, intervention-based studies could be designed to evaluate whether targeting personality-linked vulnerabilities and enhancing psychological well-being reduces the impact of thwarted belongingness and perceived burdensomeness on suicidal ideation, thus translating these findings into preventive and therapeutic strategies.

Ethical Considerations

The study followed ethical guidelines for human research. Informed consent, confidentiality, and withdrawal rights were ensured. Participants at high suicide risk were provided with referral information for professional crisis services.

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A CROSS-SECTIONAL STUDY EVALUATING THE PROFESSIONAL QUALITY OF LIFE AND COPING STRATEGIES AMONG TRAINEE TEACHERS AND HEALTHCARE TRAINEES

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ABSTRACT

In India, there are wide variety of professional courses available especially in the field of engineering, medical and paramedical, legal, management, IT, administration and teacher training. Professional courses demand an individual to play role as a student as well as trainee within a constrict time-frame. Trainees, who simultaneously carry out the dual roles often experience significant challenges in both their personal and professional lives, which in turn, affects their overall well-being. The purpose of the study was to investigate the relationship between work-life balance, coping and professional quality of life among trainees of education and nursing in the West district of Tripura. From the target population total N=120 data had been collected, 60 consists in each group. Primary data were collected through structured questionnaires. Data was analysed using IBS SPSS Statistics 20 (version 0.0.0.0). Result showed the significant level of distress experienced by the individual belongs to the age range between 22 – 25 years in the professional quality of life and personal life. Further, result showed coping style such as acceptance and active coping to be significantly high on the individual for maintaining their work-life balance. In terms of efficiency, healthy coping, and striking a balance between work and personal life, the current study will assist in the development of individual stress management techniques.

Keywords: *Coping strategies, Professional quality of life, Professional trainees, Secondary traumatic stress, Burnout, Compassion-satisfaction*

INTRODUCTION

We are living our life in a competitive and everchanging world, which compel us to function at an optimum level in order to survive in this world. As we all know only the fittest can survive through dynamics of change. Hence, to survive these changes one should pay attention not only to their physical but also to psychological fitness. Physical and mental health are interconnected, with physical

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issues like chronic illness causing stress or depression, and psychological challenges like anxiety leading to low energy or unhealthy behaviors(Chapman, Perry, &Strine, 2005). People have access to the facilities which can help them to maintain their physical health but unfortunately the mental health is always a forgotten story, at least for few(Patel et al., 2018). Now people other than mental health professionals, started to have open discussions about the importance of mental health. There are times, even after having the adequate knowledge regarding mental health and its role, one is easily and conveniently neglecting the fact, especially during the period of professional training. Professional courses demand an individual to play role as a student as well as trainee within a constrict time-frame. Individual enrolled under such courses struggles to meet such requirements and maintain equilibrium within the academic activities and field/practical work. Most the institutions were considering these trainees us free work force and reluctant to pay for their work and even in some institutes trainees has to pay certain fees to get their internship. It is true and admittable fact that internship and these trainings will help them to build grasp over their field of work (Perlin, 2011). Among the various professional courses, one is specialized educational programs, where individual undergo rigorous training to master certain skills and knowledge, to meet with the requirements of the related field. Professional courses are different from the other courses because of its practical sessions/field work as a requirement to fulfil for the certification or completion of the course.

In Indian context

In India, there are wide variety of professional courses available especially in the field of engineering, medical and paramedical, legal, management, IT, administration and teacher training. For each course, there are certain rules and regulations to be followed and the requirements to be meet, which are provided by the respective boards/govern bodies/authority to provide affiliation. As a part of curriculum trainees had to balance both the academic requirements and field requirements at same time. We should admit the benefit of these training but at same time, both of their physical and mental health is compromised. Apart from course activities trainees are overburden with institutional work without any monitory benefits. Eventually trainees start facing imbalance between their professional and personal life, which leads to poor time management, neglecting healthy life style, neglecting time with family, friends and leisure activities etc. While discussing about the professional courses most important consideration for helping professionals, especially the teacher training courses, where trainees basically working with the forth coming generation and health care trainees who were dealing with life and health of others. Hence both the trainees were learning theories and practical at same time it often led to difficulties in their personal life and professional life. Which effect their professional quality of life and force them to adapt with various coping strategies, which involves both negative and positive

coping mechanisms. The current study intended to know about professional quality of life and coping among trainees of teaching and health care.

Method

Research Design

The current study is a cross-sectional quantitative study, which evaluates professional quality of life and coping among helping professionals such as trainee teachers and health-care trainees.

Participants

The sample of the study includes N=120 participants, which consists of 60 trainee teachers, consider as Group 1, from the Faculty of Education, ICFAI University and 60 participants taken from health care trainees from ICFAI Nursing School, Tripura considered as Group 2. The Samples were taken from the students based on inclusion criteria such as who were undergoing fieldwork, fluent in English and were willing to participate in the study.

Procedure

The convenient sampling method was used for sample collection. Data collection was conducted in two phases. In the first phase, data were collected from students enrolled under teacher training course. Before starting data collection, permission was obtained from the concerned authority of the department as well as of the participants. Following the sameprocedure, the second phase of data were collected from the trainees pursuing GNM. Later, data were analyzed by using IBS SPSS Statistics 20.

Measures

Consent form: A written informed consent was obtained from the participants undergoing the study

Socio-demographic data sheet: A semi-structure data sheet was used to collect information regarding the demographic variables like as gender, age, social economic status, marital status, parental status, religion, and accommodation type.

The brief cope inventory (carver, 1997): The Brief COPE Inventory is a widely used tool for assessing how individuals cope with stress and challenging situations. Developed by Carver in 1997 as a streamlined version of the original COPE inventory, it retains essential elements of coping assessment while being easier to administer. The Brief COPE consists of 28 items across 14 distinct coping strategies, with each strategy measured through two items. These strategies include active coping, planning, positive reframing, acceptance, humour, religion, self-distraction, denial, substance use, behavioural disengagement, emotional support, instrumental support, self-blame, and venting. With a reliability of Cronbach's alpha coefficients typically above 0.70.

Professional quality of life (Stamm, 2010): The Professional Quality of Life Scale (ProQOL) is a

widely used tool for measuring both the positive and negative effects of helping others in professional caregiving settings, particularly for individuals in roles such as mental health professionals, nurses, and social workers. Developed by Stamm in 2005, the ProQOL evaluates three key dimensions: Compassion Satisfaction (CS), Burnout (BO), and Secondary Traumatic Stress (STS). The ProQOL demonstrates strong internal consistency, with Cronbach's alpha values ranging from 0.75 to 0.88 across its subscales, and studies have confirmed its construct and criterion validity

RESULT

Descriptive Statistics

The current study explores the different coping mechanisms and professional quality of life among trainees from various professional courses. Total 120 participants were participated in the study, among them 59.2% belong to the age group of 22-25 and 33.3% were belong to the age group of 18-21, in total 92.5% of data is collected from the age range of 18- 25. The total data consists of 66.7% female participants and 33.3 % were males. 92.5% of data was collected from middle socio-economic status.

Table 1 indicates the mean for 14 subscales of brief cope inventory. From the table it is relevant that acceptance (M= 5.31, SD= 1.377) and active coping (M= 5.22, SD= 1.330) were the major coping mechanisms adapted by the most of the trainee teachers and health care trainees. Another coping mechanism like planning (M=5.20, SD=1.363) positive reframing (M=5.07, SD= 1.424) and instrumental support (M =5.03, SD= 1.503) were also used by the trainees. The least used coping mechanisms were substance use (M=3.54, SD= 1.449) and humour (M =3.89, SD= 1.549).

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Table 1

Coping strategies of trainees of education and trainees of health care

Sl.no	Coping strategy	Mean	SD
1.	Self-distraction	4.79	1.215
2.	Active-coping	5.22	1.330
3.	Denial	4.23	1.288
4.	Substance use	3.54	1.449
5.	Emotional support	4.88	1.481
6.	Instrumental support	5.03	1.503
7.	Behavioural disengagement	4.43	1.339
8.	Venting	4.48	1.209
9.	Positivereframing	5.07	1.424
10.	Planning	5.20	1.363
11.	Humour	3.89	1.549
12.	Acceptance	5.31	1.377
13.	Religion	5.02	1.408
14.	Self-blame	4.21	1.460

Table 2 shows the results of sub- variables of professional quality of life among 120 participants. The highest mean is for compassion satisfaction (M= 31.3, SD= 5.865) indicate the high levels of satisfaction from their role of helping professional. Burnout (M= 28.38, SD = 3.851)and secondary traumatic stress (M= is 27.63, SD = 5.145)shows a slight low mean indicating the moderate levels of burnout and exhaustion caused by their role of helping professional.

Table 2

Professional quality of life among Trainee Teachers and Healthcare Trainees.

Sl.no	Sub-variables of ProQOL	Mean	SD
1.	Compassion satisfaction	31.13	5.865
2.	Burnout	28.38	3.851
3.	Secondary traumatic stress	27.63	5.145

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Inferential Statistics

Further to find out the significant differences t-test was administered between the trainee teacher and health care trainee by comparing the mean.

Table 3

Independent t-test between trainee teachers and health care trainees

Sub-variables	Trainee teacher		Health care trainee		df	t	p
	M	SD	M	SD			
Self-distraction	4.60	1.23	4.98	1.17	118	-1.742	.084
Active-coping	5.27	1.49	5.17	1.15	117	.411	.682
Denial	4.23	1.29	4.23	1.29	118	.000	1.00
Substance use	3.75	1.48	3.33	1.39	110	1.585	.116
Emotional support	4.88	1.56	4.87	1.40	118	.061	.951
Instrumental support	5.08	1.38	4.97	1.62	118	.424	.673
Behavioural disengagement	4.18	1.35	4.67	1.28	118	-2.002	.048
Venting	4.42	1.31	4.55	1.09	117	-.602	.548
Positive reframing	4.83	1.55	5.30	1.25	118	-1.811	.073
Planning	5.15	1.51	5.25	1.20	116	-.400	.690
Humor	3.90	1.71	3.88	1.37	118	.059	.953
Acceptance	5.15	1.53	5.47	1.18	115	-1.263	.209
Religion	5.05	1.58	4.98	1.21	118	.258	.797
Self-blame	4.02	1.53	4.40	1.36	117	-1.444	.151
Compassion satisfaction	32.5	5.83	29.73	5.60	118	2.682	.008
Burnout	28.4	4.00	28.33	3.72	114.1	.142	.888
Secondary traumatic stress	27.7	5.86	27.53	4.35	118	.194	.846

Table 3 represent the independent t- test used to compare the coping strategies and professional quality of life between trainee teacher (n=60) and health care trainees (n=60). The table shows the result that there is significant difference in behavioural disengagement. Health care trainees (M= 4.67, SD= 1.28) scores significantly higher than trainee teachers (M= 4.18, SD= 1.35) t(118) = -2.002, p= .048, indicate the higher use of behavioural disengagement among health care trainees. Compassion satisfaction between teacher trainees (M= 32.53, SD= 5.83) and health care trainees (M=29.73, SD= 5.60), t(118) = 2.68, p= 0.008, which indicate that the teacher trainees were satisfied with their helping

role when compared to the health care trainees. There is no significant difference in the other coping strategies like self-distraction, active coping, denial, substance use, emotional support, instrumental support, venting, positive reframing, planning, humour, acceptance, religion, self-blame and sub variables of professional quality of like burnout and secondary traumatic stress between trainee teachers and health care trainees.

DISCUSSION

Trainee teachers and healthcare trainees both while undergo the theory and practical face varying degrees of difficulties in managing the balance between their personal and professional lives. Such difficulties will eventually lead to burnout and secondary traumatic stress among the trainees. Majority of the participants belong to the age range of 18-25 showed the 92.5% of the whole data. Data includes 66.7% female participants and 33.3% males. The results showed that most trainees used acceptance and active coping mechanisms to manage burnout. They are aware of their conditions and ready to accept circumstances and address the problems directly. The least used coping mechanism is substance abuse. The trainees were aware of the negative impact of substances, and they are avoiding the usage of maladaptive mechanisms. A study by McKinley(2021) also reached the same findings. Hence, the adaptive coping mechanisms also lead to compassion satisfaction among the trainees. A study by Ansari and Lodhia(2013) also finds out that helping professionals will experience a high level of compassion satisfaction, that, the trainees were satisfied in their role of helping professionals. Trainee teachers who are dealing with students and health care trainees dealing with patients will have a sense of happiness for making others' lives happy. Even though trainees are experiencing average levels of burnout and secondary traumatic stress. Life stress of the trainees to meet the demands of their role may lead to significant burnout, and this is similar to the findings by Taylor et al. (2019). Although there are finding of significant usage of maladaptive coping mechanisms, the average level of burnout and secondary traumatic stress found by Jenaro et al. (2007) reveals that coping strategies alone cannot prevent it, which further raise a question into the work life balance maintain by the trainees. The study done by Shukla et al. (2012) suggested that nursing trainees were using avoidance strategies, but the result was contradictory to it. When comparing the different coping mechanism between trainee teachers and health care trainees there were no significant difference between them. Trainee teachers were using adaptive coping mechanisms like active coping, emotional support, instrumental support, humour and religion, and maladaptive mechanisms like denial and substance use. Health care trainee was engaging in positive coping mechanisms such as venting, positive reframing, planning, acceptance and maladaptive coping mechanisms such as self- distraction, behavioural disengagement and self-blame. While considering sub variables of ProQOL there is no much difference between burnout and

Secondary traumatic stress but compassion satisfaction was high among the trainee teachers when compared to the health care trainees, because trainee teachers will receive direct feedback from the students and authorities, while the efforts by the health care trainees were often left unaddressed. The nursing trainees were often subjected to witness traumatic events such as accidents and death which also create a significant level of distress to them and interfering with their compassion satisfaction

The reason for the difference in usage of different coping mechanisms and significant difference between trainee teachers and health care trainees in compassion satisfaction should be explored in further researches. In total most of the trainees were following adaptive coping mechanisms then maladaptive mechanisms. There is significant levels of burnout and secondary traumatic stress, even when compassion satisfaction is high and trainees are using adaptive mechanisms, pointing out that the administrators and faculty should plan additional strategies for time management skills, communication skills, and stress management skills as part of the curriculum.

LIMITATIONS

The data was collected only from the ICFAI university, Tripura campus even though the academic and field requirements are same in every UGC affiliated institutes and there is generalizability of findings. The other factors such as personality trait of the individual, exposure, training curriculum, financial status, family burden, peer support etc., and approach by faculties and supervisors is not included, which may have significant influence in the results. Another key factor is social desirability, in which while responding to the questionnaire the respondents may have tendency to conform to social norms.

FUTURE DIRECTION

How each coping mechanisms are contributing to the professional quality of life can be studied further. Any differences in coping strategies and professional quality of life can be studied related to gender and other socio-demographic variables. The reason for the difference in usage of different coping mechanisms can be explored. Significant differences between trainee teachers and health care trainees in compassion satisfaction should be explored in further researches. The perception of faculties and supervisors regarding mental health of trainees can be explored.

CONCLUSION

Trainees were using positive, adaptive coping strategies such as acceptance and active coping to deal with stresses arising from the demanding nature of their course. The trainees were reluctant to use maladaptive coping mechanisms such as substance use to deal with stressors. The adaptive mechanisms were often led to above average levels of compassion satisfaction, and average levels of burnout and secondary traumatic stress, even though adaptive coping mechanisms alone cannot increase the professional quality of life. The compassion satisfaction is high among trainee teachers when compare

to health care trainees.

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EXECUTIVE DYSFUNCTION IN ALCOHOL DEPENDENCE: A FOCUS ON PERSEVERATIVE AND NON-PERSEVERATIVE ERRORS

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ABSTRACT

Alcohol Dependence Syndrome (ADS) is associated with significant impairments in executive functioning, which are crucial for adaptive behavior, impulse control, and decision-making. The present study examined perseverative errors (PE) and non-perseverative errors (NPE) on the Wisconsin Card Sorting Test (WCST) among young adult males with ADS compared to non-dependent controls. Sixty participants (30 ADS, 30 non-ADS) were assessed using standardized inclusion criteria. Results revealed significantly higher perseverative errors among the ADS group, reflecting impaired cognitive flexibility, while non-perseverative errors did not differ significantly. These findings suggest that cognitive rigidity is a core deficit in ADS, supporting the neurobiological literature linking alcohol dependence with prefrontal striatal disruption. Interventions should focus on cognitive rehabilitation, particularly set-shifting and problem-solving strategies, to improve treatment adherence and relapse outcomes.

Keywords: Alcohol Dependence Syndrome, Executive Functioning, Perseverative Errors, WCST, Cognitive Flexibility

INTRODUCTION

Alcohol Dependence Syndrome (ADS) is a chronic condition associated with both physiological and neurocognitive impairments. Globally, ADS is a major public health concern, contributing to premature mortality and disability (WHO, 2018). In addition to physical health consequences, long-term alcohol use has been consistently linked to deficits in executive functioning, a higher-order cognitive domain that includes cognitive flexibility, response inhibition, working memory, and

problem-solving (Koob & Volkow, 2016). These impairments can significantly reduce treatment adherence, increase relapse vulnerability, and diminish overall quality of life.

Executive dysfunction is a prominent feature in ADS, with studies reporting prevalence rates between 30% and 80% (Maharjan et al., 2017). Chronic alcohol consumption disrupts neural circuits involving the prefrontal cortex and striatum, resulting in impaired decision-making, impulsivity, and difficulty in adapting to new problem-solving demands. Such deficits not only contribute to the persistence of addictive behaviors but also interfere with psychosocial functioning, occupational stability, and interpersonal relationships.

The Wisconsin Card Sorting Test (WCST) is one of the most widely used neuropsychological tools for evaluating executive functioning. Specifically, it provides measures of perseverative errors (PE), which reflect cognitive rigidity and difficulty in shifting mental sets, and non-perseverative errors (NPE), which reflect random or inefficient responses unrelated to set maintenance. Perseverative errors are particularly important because they highlight the inability to modify responses even when corrective feedback is available, indicating dysfunction in the prefrontal cortex.

By focusing on these two indices, this study aims to provide a more nuanced understanding of executive dysfunction in ADS. It was hypothesized that individuals with ADS would show significantly higher perseverative errors compared to non-dependent controls, while non-perseverative errors would not differ significantly. This study therefore contributes to the growing literature on neurocognitive deficits in ADS and offers implications for clinical rehabilitation strategies aimed at enhancing cognitive flexibility and reducing relapse risk.

METHOD

Design

The study used a comparative quantitative design with two independent groups (Alcohol dependent and non-dependent group).

Participants

There were 60 male participants in all, ranging in age from 18 to 35. Thirty ADS patients from Agartala, Tripura, rehabilitation centre made up Group 1. The participants were detoxified for a minimum of two weeks before the evaluation and met the ICD-10 criteria for alcohol use disorder. The General Health Questionnaire (GHQ-12) was used to screen the 30 non-dependent controls in Group 2, who were selected from nearby surroundings and had a cut-off score of < 3.

Measures

Wisconsin Card Sorting Test (WCST; Heaton, 1981) used to assess cognitive flexibility and executive functioning, focusing on perseverative and non-perseverative error indices. General Health

Questionnaire-12 (GHQ-12) used for screening controls to rule out psychological distress.

Procedure

Institutional ethical clearance and permission to collect data was obtained prior to the commencement of the study. Written informed consent was collected from all participants. ADS participants were first clinically evaluated and stabilized before cognitive assessment. Both groups were assessed individually in a quiet clinical setting. Data collection included building rapport, administration of the WCST along with sociodemographic details. Confidentiality was maintained throughout the study.

Data Analysis

Non-parametric statistical tests were applied due to the nature of data distribution. The Mann–Whitney U test was used for between-group comparisons, and Spearman's rho was applied to assess the correlation between perseverative and non-perseverative errors. The significance level was set at $p < .05$.

RESULTS

The ADS group demonstrated significantly higher perseverative errors compared to non-dependent or control group ($U = 240.5$, $p = .002$), indicating impaired set-shifting and cognitive rigidity. Non-perseverative errors did not show a significant difference between groups ($U = 342.5$, $p = .112$). A weak, non-significant positive correlation was found between perseverative and non-perseverative errors, suggesting that while the two types of errors co-occur, perseveration is the more defining impairment in ADS.

Table 1:

Group Comparison of Perseverative and Non-Perseverative Errors (WCST)

WCST Variables	ADS (n=30)	Non-ADS (n=30)	Mann–Whitney U	p-value
Perseverative Errors	37.48	23.52	240.5	.002**
Non-Perseverative Errors	34.08	26.92	342.5	.112

Note. **p < .01 highly significant; p < .05 significant.

Figure 1:

Comparison of Perseverative and Non-Perseverative Errors between ADS and Non-ADS groups on WCST.

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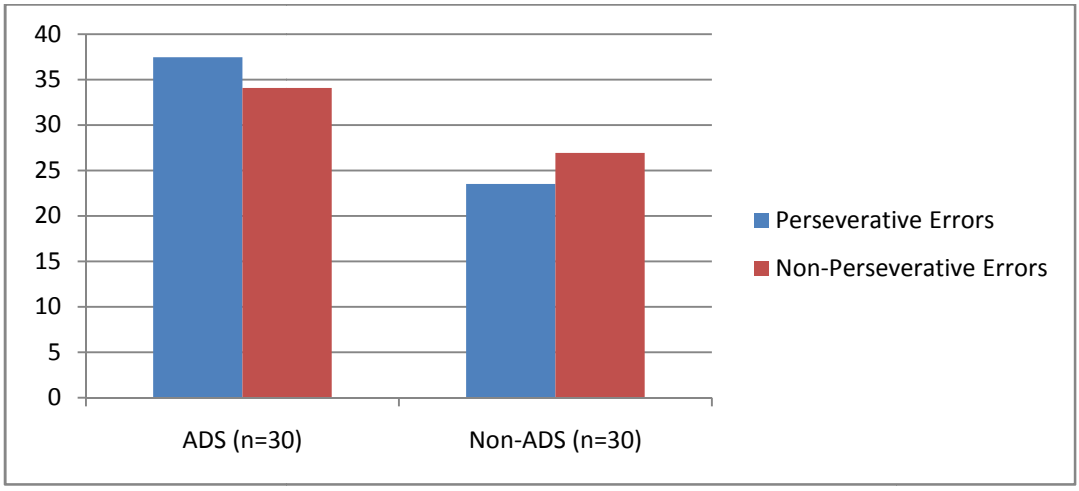

DISCUSSION

The results of this study support the hypothesis that individuals with Alcohol Dependence Syndrome exhibit significant executive dysfunction, particularly in the form of perseverative errors on the WCST. Elevated perseverative errors are consistent with previous research (Shrinkhala et al., 2022; Ghosh et al., 2018), underscoring the neurocognitive consequences of chronic alcohol use. These deficits highlight impaired cognitive flexibility and the inability to adapt behavior in response to corrective feedback, a process primarily governed by the prefrontal cortex.In contrast, non-perseverative errors did not differ significantly between groups, suggesting that attentional lapses or random inefficiencies are not primary deficits in ADS. These findings align with Ratti et al. (2002), who similarly emphasized that alcohol dependence selectively impacts set-shifting and inhibitory control.The weak positive correlation between perseverative and non-perseverative errors suggests partial overlap but distinct cognitive processes. While perseveration signals rigid executive dysfunction, non-perseverative errors may be secondary to attentional variability. This differentiation is clinically relevant, as targeted cognitive rehabilitation strategies may reduce perseverative tendencies and strengthen problem-solving abilities (Rupp et al., 2018).

CONCLUSION

This study reinforces the central role of perseverative errors as a hallmark deficit of executive functioning in alcohol dependence. Although non-perseverative errors were observed, they did not significantly differentiate ADS from controls, underscoring the primacy of cognitive rigidity in this population.From a clinical perspective, these findings highlight the need for interventions that specifically address set-shifting, impulse control, and adaptive problem-solving. Cognitive rehabilitation programs, when integrated into traditional psychosocial treatment models, may enhance treatment adherence and reduce relapse vulnerability.Future research should examine larger and more diverse populations, including women and older adults, to explore the generalizability of these findings.

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Longitudinal studies would also help determine whether improvements in executive functioning predict sustained recovery outcomes.

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KNOWING THE UNKNOWN: A NEUROCOGNITIVE STUDY ON LGBTQ+ INDIVIDUALS

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ABSTRACT

The present study explores neurocognitive functioning among LGBTQ+ individuals in comparison to cisgender-heterosexual (CIS-HET) peers within the sociocultural context of India. Despite the decriminalization of homosexuality in 2018, stigma and discrimination persist, potentially affecting the cognitive-emotional health of LGBTQ+ populations. While Western literature highlights links between minority stress, executive functioning, and cognitive flexibility, limited evidence exists from Indian contexts. This study aimed to evaluate executive functions such as decision-making, problem-solving, and cognitive flexibility using the Wisconsin Card Sorting Test (WCST). A total of 100 participants aged 18–45 years were recruited, with equal representation from LGBTQ+ (n = 50) and CIS-HET (n = 50) groups. Standardized tools, including the Sexual Orientation Scale and WCST, were administered following a structured sampling strategy. Independent t-test analysis revealed significant group differences across all WCST domains. CIS-HET participants demonstrated higher correct responses (M = 90.48) and fewer errors, whereas LGBTQ+ individuals exhibited elevated perseverative and non-perseverative errors, reflecting greater difficulty in adapting to shifting task demands. These findings suggest that while executive functioning remains intact, LGBTQ+ participants experience challenges in cognitive flexibility and adaptability, which may be influenced by chronic minority stress and stigma rather than inherent cognitive deficits. The results align with the Minority Stress Model, underscoring the cognitive toll of persistent discrimination. The study highlights the necessity of culturally sensitive neuropsychological frameworks, LGBTQ+-inclusive clinical norms, and policy interventions that protect against diagnostic bias. By validating LGBTQ+ identities through neurocognitive evidence, the findings contribute to reducing stigma, informing affirmative practices, and promoting inclusive mental health care in India.

Keywords: LGBTQ+, Neurocognition, Executive functioning, Minority stress.

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INTRODUCTION

The year 2018 marked remarkable progress in India, a region of Southeast Asia. The removal of Article 377 shaped a new confidence in the individuals who wanted to be enclosed in the shells of their own inferiority. The community of LGBTQIA+ that was so covert started to voice their rights and show skin in broad daylight. The article did bring changes in the constitution, but it did not change the minds of brown-skinned individuals living on the same soil. They are still termed as abnormal: Kothi (effeminate men who take a receptive role in same-sex relations), Panthi (masculine men taking the incentive role), and Hijra (a transfeminine community with cultural-historical roots across South Asia), along with regional identities like Jogappa (transfeminine persons in Karnataka linked to goddess Yellamma) and Aravani (Tamil Nadu trans feminine community). In contrast, derogatory slang widely heard in society includes Meetha ("sweet," mocking effeminate men), Chhakka (a taunt for hijras or effeminate men), Launda (used pejoratively for young queer boys), Number 6, Number 9 (code implying homosexuality), Sixer (mocking term for trans women), Gandu (abuse meaning "one who is penetrated"), Napunsak ("impotent," used to insult queer and trans people), and Ali (a Tamil slur for trans feminine persons). Regional variants like "Shodhin" (a Bengali insult for effeminate men) and "Kinnar" (sometimes a neutral, sometimes mocking term for hijras in Hindi-speaking areas) also circulate.

This research aims to establish an understanding based on the differences in their neurocognitive function that can play a powerful role in supporting LGBTQ+ individuals by providing scientific evidence that validates gender identity preferences rather than pathologizing them. By studying brain functioning, cognitive processing, memory, attention, and executive functions in transgender, non-binary, and gender-diverse individuals, especially concerning the effects of frontal lobe functioning, we can highlight how cognitive profiles align with lived gender identity. This helps demonstrate that gender identity is deeply rooted in neurobiological and psychological processes, not merely a "choice" or "deviation," thereby challenging stigma and misconceptions. Introducing comprehensive sex education in schools that includes discussions of gender diversity, safe sexual practices, and mental health is essential, especially as rates of HIV, unsafe sex, and substance addiction are rising among youth. Integrating neurocognitive insights into public policy can therefore help reduce stigma, promote safer health practices, and create more inclusive environments that affirm LGBTQ+ identities. Moreover, such research can distinguish between cognitive differences caused by minority stress (discrimination, stigma, trauma) and those inherent to neurodiversity, ensuring fair clinical interpretation. Neurocognitive studies can provide empirical justification for gender-affirming care, support policy changes, and strengthen the legitimacy of diverse gender identities in both medical and

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social contexts.

REVIEW OF LITERATURE

The Canadian Longitudinal Study on Aging (2023) reported that older gay men showed better cognitive flexibility compared to heterosexual men, and social support mediated the association between sexual orientation and verbal fluency in women. This underscores the buffering role of social connections.

Das & Govindappa (2023) assessed anxiety, depression, and perceived social support among LGBTIQ individuals during the COVID-19 pandemic in Kerala using the DASS-21 and the MSPSS scale (n = 106). Results indicated that nearly half of the respondents experienced severe to extremely severe depression, and over 40% had high levels of anxiety. Importantly, social support negatively correlates with psychological distress, suggesting that diminished support under stress may impair cognitive-emotional regulation.

Manca, Wyman, and Berchicci (2023) investigated the impact of minority stress on specific cognitive domains in sexual minority adults. Using population-level data, they found that higher levels of minority stress were significantly associated with lower fluid intelligence scores, while episodic memory remained unaffected. The findings underline the domain-specific nature of cognitive vulnerabilities in this population.

Singh et al. (2023) systematically reviewed the role of emotion suppression in mediating the relationship between minority stress and mental distress. Their conclusions imply that maladaptive emotion regulation strategies may also influence cognitive performance under stress.

Beri & Gupta (2022) explored how homosexual individuals in India experience inequality, exclusion, and identity negotiation using secondary data. The authors emphasized how sociocultural structures and pervasive stigma shape psychological well-being and self-concept, factors likely to influence cognitive processes such as attention, working memory, and self-referential processing within LGBTQ+ contexts.

Yuan et al. (2022) analyzed linguistic data from LGBTQ+ online communities during COVID-19, finding increased use of cognitive-processing words and reduced positive emotion terms. The authors interpret this as evidence of heightened cognitive and emotional strain during crisis periods.

Xu, Norton, and Rahman (2020) extended their previous work using multivariate meta-analytic methods. They found that sexual orientation differences were most evident in mental rotation and water-level tests, while no differences emerged in spatial location memory. These findings refine the selection of tasks for future studies.

Correro and Nielson (2020) examined the association between minority stress and cognitive decline among LGBTQ+ elders. The authors proposed that chronic exposure to discrimination, stigma, and

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internalized negative attitudes may accelerate neurodegenerative processes through stress-induced alterations in the hypothalamic–pituitary–adrenal axis.

Flint et al. (2019) used structural MRI to explore brain morphology in transgender women, finding misclassification patterns relative to cisgender male and female brains. These findings suggest that brain structure in transgender individuals may follow unique developmental pathways.

Xu, Norton, and Rahman (2017) conducted a meta-analysis on sexual orientation and neurocognitive abilities. Their results showed a "cross-sex shift" pattern, with gay men performing more like heterosexual women in certain spatial and verbal tasks, and lesbian women showing partial shifts toward male-typical performance in spatial abilities.

Jones (2017) investigated the link between minority stress and working memory in LGB adults. The study found that psychological distress and rumination mediated this relationship, suggesting cognitive load as a mechanism through which stress affects

Podder & Mukherjee (2016) investigated cognitive emotion regulation and locus of control among LGBT individuals compared to heterosexuals in a sample from Calcutta. Using standardized measures, they found that LGBT participants engaged more in negative emotion regulation strategies and had a stronger internal locus of control. Transgender individuals, in particular, reported the highest levels of negative regulation. These cognitive-emotional patterns suggest potential vulnerabilities in stress regulation impacting executive cognitive functions.

METHOD

Participants:

The study included a total of 100 participants between the ages of 18 and 45 years, comprising two groups: 50 individuals who self-identified as LGBTQ+ (Group 1) and 50 individuals who identified as cisgender and heterosexual (CIS-HET, Group 2). Participants were drawn from both urban and rural areas of Tripura to capture diversity in cultural background, socioeconomic status, and access to mental health services.

Sampling Size:

The sample size of 100 was determined to provide sufficient statistical power while remaining feasible for data collection. For the LGBTQ+ group, the calculation was guided by Slovin's formula at a 95% confidence level and 5% margin of error, which suggested that a minimum of 49 participants would be representative of the LGBTQ+ population in Tripura. To maintain balance and ensure valid group comparisons, an equal number of participants (n = 50) was included in both groups.

Sampling Process:

A combination of purposive and snowball sampling methods was used for Group 1 (LGBTQ+). Initial

participants were approached through LGBTQ+ support groups, NGOs (e.g., Swabhiman, Yojak, Jana Unnayan Samiti), and social media campaigns, who then referred others from their networks. For Group 2 (CIS-HET), participants were recruited through random sampling from universities, workplaces, and online platforms. This dual approach helped achieve both representativeness and feasibility while ensuring diversity across the sample.

Materials

Sexual Orientation Scale (SQS; Sagayaraj & Gopal, 2020) – A 28-item standardized measure of sexual orientation with high test–retest reliability (r = 0.96) and good internal consistency (Cronbach's α = 0.71–0.88). It has been validated across multiple dimensions including face, content, criterion, and construct validity, making it suitable for accurately assessing orientation in diverse populations.

Wisconsin Card Sorting Test (WCST; Berg, 1948) – A performance-based neuropsychological assessment that evaluates executive functioning, particularly cognitive flexibility, abstract reasoning, and problem-solving. The WCST involves 64–128 card-sorting trials and has been widely used to assess adaptability and set-shifting abilities.

Procedure

A comfortable and confidential environment was established to build rapport with participants before data collection. After obtaining informed consent, participants completed demographic forms followed by the SQS and the WCST. LGBTQ+ individuals were recruited via NGOs, social media outreach, and support groups, while CIS-HET participants were recruited randomly from universities and workplaces. Data collection was conducted offline through paper-based surveys and task administration to maintain consistency. Privacy and confidentiality were strictly observed, with all responses securely stored.

Data Analysis

Data were analysed using both descriptive and inferential statistics. Descriptive statistics (mean, median, mode, and standard deviation) summarized demographic characteristics and test scores. Independent sample t-tests were then conducted to compare executive functioning between LGBTQ+ and CIS-HET groups across WCST variables, enabling the study to identify significant differences and explore whether variations in performance reflected inherent neurocognitive diversity or were shaped by minority stress and environmental factors

Results

Table shows the result of t-test used to compare the mean of LGBTQ and CIS-HET gender based on their executive functioning.

The WCST results table highlights clear differences in executive functioning between CIS-HET and LGBTQ+ participants. On the WCST-C (Correct Responses), CIS-HET individuals achieved higher

mean scores (M = 90.48, SD = 12.586) compared to LGBTQ+ participants (M = 61.92, SD = 7.264), indicating stronger cognitive flexibility and accuracy in the control group. In contrast, LGBTQ+ participants recorded higher error rates across all error-related indices, including WCST-E (Errors), WCST-PR (Perseverative Responses), WCST-PE (Perseverative Errors), and WCST-NPE (Non-Perseverative Errors). For instance, perseverative responses and errors were notably higher among LGBTQ+ individuals (M = 30.56, SD = 11.832; M = 21.00, SD = 8.003, respectively) than in CIS-HET participants (M = 11.34, SD = 4.192; M = 8.74, SD = 5.635). These differences were statistically significant, as reflected by large negative t-values across all comparisons. Taken together, the findings suggest that while LGBTQ+ individuals demonstrate intact executive functions, they exhibit greater difficulty in cognitive flexibility, decision-making, and adapting to shifting rules compared to CIS-HET peers. Such disparities may not necessarily reflect inherent cognitive deficits but could instead be influenced by chronic minority stress, stigma, and psychosocial pressures that place additional cognitive load on LGBTQ+ individuals.

Table 1. shows the result of t-test used to compare the mean of LGBTQ and CIS-HET gender based on their executive functioning

WCST Variable	Group 1 Mean (CIS-HET)	Group 1 SD	Group 2 Mean (LGBT+)	Group 2 SD	t-test scores
WCST-C (Correct Responses)	90.48	12.586	61.92	7.264	13.897
WCST-E (Errors)	20.08	5.667	36.74	12.626	-8.512
WCST-PR (Perseverative Responses)	11.34	4.192	30.56	11.832	10.862
WCST-PE (Perseverative Errors)	8.74	5.635	21.00	8.003	-8.858
WCST-NPE (Non-Perseverative Errors)	9.38	8.327	14.98	7.906	-3.448

Discussion

This study investigated differences in executive functioning between LGBTQ+ and CIS-HET individuals, focusing on cognitive flexibility, decision-making, and problem-solving as measured by the

Wisconsin Card Sorting Test (WCST). The discussion is structured around the hypotheses, with results interpreted considering prior research.

Hypothesis 1: There will be no significant difference in cognitive flexibility, decision-making, and problem-solving abilities between LGBTQ+ and CIS-HET individuals as measured by standardized neuropsychological tests.

This hypothesis was rejected. Results showed a clear and statistically significant difference across all WCST variables. CIS-HET individuals scored significantly higher on correct responses (WCST-C: M = 90.48, SD = 12.586) compared to LGBTQ+ participants (M = 61.92, SD = 7.264), with a large t-value (t = -13.897). Conversely, LGBTQ+ individuals demonstrated higher error rates, including total errors (WCST-E: M = 36.74, SD = 12.626 vs. M = 20.08, SD = 5.667; t = -8.512), perseverative responses (WCST-PR: M = 30.56, SD = 11.832 vs. M = 11.34, SD = 4.192; t = -10.862), perseverative errors (WCST-PE: M = 21.00, SD = 8.003 vs. M = 8.74, SD = 5.635; t = -8.858), and non-perseverative errors (WCST-NPE: M = 14.98, SD = 7.906 vs. M = 9.38, SD = 8.327; t = -3.448). These results suggest that LGBTQ+ individuals face greater challenges in maintaining cognitive flexibility and shifting problem-solving strategies when task demands change. The findings resonate with Meyer's (2003) Minority Stress Model, which posits that chronic exposure to stigma, discrimination, and identity-related stressors can impair both cognitive and emotional regulation. Similarly, Puckett et al. (2020) reported that ongoing discrimination has measurable negative effects on the psychological and cognitive well-being of LGBTQ+ individuals. Thus, the lower WCST performance among LGBTQ+ participants is more plausibly linked to external psychosocial stressors than to inherent neurocognitive deficits.

Hypothesis 2: There will be no significant difference in overall executive functioning between LGBTQ+ and CIS-HET individuals.

This hypothesis was also rejected. Across all measures of the WCST, significant group differences were observed, with CIS-HET individuals consistently outperforming LGBTQ+ participants. The significant differences in perseverative errors and responses, in particular, indicate reduced adaptability among LGBTQ+ individuals when faced with shifting task rules. This aligns with findings from Garcia-Falgueras & Swaab (2010) and Zubiaurre-Elorza et al. (2013), which showed that executive functioning and identity formation are closely related to frontal lobe processes. These studies emphasize that identity is rooted in neurological structures rather than pathology. It is important to highlight that although LGBTQ+ participants scored lower, their performance still reflected intact executive functioning, suggesting that identity-related stress, rather than cognitive impairment, contributes to performance differences. Kranz et al. (2014) further demonstrated that gender identity is strongly correlated with neurobiological markers, debunking the outdated notion of LGBTQ+ identities as a

mental disorder. The higher error rates in this study may therefore reflect the cognitive toll of navigating systemic stigma, as supported by Russell & Fish (2016), who showed that bias in healthcare environments compounds stress and hinders cognitive resilience.

CONCLUSION

The present study concludes that significant differences exist in executive functioning between LGBTQ+ and CIS-HET individuals, as measured through the Wisconsin Card Sorting Test (WCST). While CIS-HET participants demonstrated higher accuracy and fewer errors, LGBTQ+ participants recorded more perseverative and non-perseverative errors, suggesting challenges in cognitive flexibility, decision-making, and problem-solving. Importantly, these differences should not be misinterpreted as inherent cognitive deficits but rather as outcomes shaped by chronic minority stress, discrimination, and societal stigma, consistent with the Minority Stress Model (Meyer, 2003). The findings reinforce that LGBTQ+ identities are neurologically valid and part of natural human diversity, not pathologies. Therefore, the study highlights the urgent need for culturally sensitive neuropsychological frameworks, affirmative mental health policies, and inclusive education such as comprehensive sex education to address rising concerns of HIV and addiction that collectively safeguard the dignity and rights of LGBTQ+ individuals while improving equitable access to mental healthcare.

FUTURE DIRECTIONS

Longitudinal Studies – Future research should track cognitive performance of LGBTQ+ individuals over time to examine how minority stress, resilience, and social changes influence executive functioning.

Inclusion of Transgender and Non-Binary Individuals – Specific studies are needed on the neurocognitive effects of gender-affirming interventions, such as hormone therapy and transition-related healthcare.

Cross-Cultural Comparative Research – Expanding similar studies across different Indian states and cultural groups will help identify regional influences on neurocognitive performance and access to care.

Development of LGBTQ+-Inclusive Norms – Establishing baseline neuropsychological data for LGBTQ+ populations will prevent misdiagnosis and ensure more accurate clinical interpretation.

Intervention-Based Research – Future work should design and test cognitive and psychosocial interventions that reduce the impact of minority stress on executive functioning and mental health outcomes.

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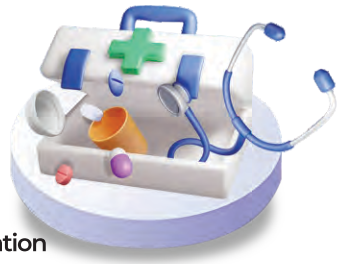

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BCA	3 Years	Pass in 10 + 2 (any Discipline) examination	IT,ITEs, Corporates, Banks,Govt. Services, NGO's.
Integrated MCA	5 Years	Pass in 10 + 2 (any Discipline) examination	IT,ITEs, Corporates, Banks,Govt. Services, NGO's.
MCA	2 Years	Graduation in any discipline, with 40% and above aggregate marks.	IT,ITEs, Corporates, Banks, Govt. Services, NGO's,Research
M.Tech - Water Resource Engineering	2 Years	Valid GATE Scorer with B.Tech /B.E in Civil Engineering or B.Tech /B.E in Civil Engineering with 60% marks	Research, consultant to Pvt. Organization in the field of flood forecasting, flood inundation, flood disaster management, Entrepreneur.
M.Tech - Structural Engineering	2 Years	Valid GATE Score with B.Tech/B.E., in Civil Engineering or B.Tech/B.E. in Civil Engineering with 60% marks.	Structural Engineer,Project Manager, Researcher, Quality Control, Teaching, Entrepreneurship, and more.
M.Tech - Computer science & Engineering	2 Years	Pass with 60% aggregate marks in B.Tech. (CSE or IT or ECE or EEE) or MCA or M.Sc. (IT or Computer Science) or equivalent	Offers opportunities in cutting-edge technology-based research like AI ML, Cybersecurity, and software development roles in the ever-evolving field of computer science.

Basic Science

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Sc. Physics (Hons.)	4 Years	Pass in 10 + 2 with 40 % marks in Physics & pass in Maths	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.Sc. Chemistry (Hons.)	4 Years	Pass in 10 + 2 with 40 % marks in Chemistry	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.Sc. Mathamatics (Hons.)	4 Years	Pass in 10 + 2 with 40 % marks in Mathematics	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Physics	2 Years	Graduate with 45 %(40 % in case of SC/ST/ OBC) marks in Physics	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Chemistry	2 Years	Graduate with 40% marks in Chemistry	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Mathematics	2 Years	Graduate with 40 % marks in Mathematics	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate

Liberal Arts

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.A. English (Hons.)	4 Years	Pass in 10 + 2 (any Discipline) with 40 % marks in English	Jobs in Govt., Teaching in Schools/Educational Administrators/ Corporate, Banks, Telecom, Media, Journalism
M.A English	2 Years	Graduate in any Discipline with minimum 45 % in English (40% in case of SC/ST/ OBC) aggregate marks	Jobs in Govt., Teaching in Schools/Educational Administrators/ Corporate, Banks, Telecom, Media, Journalism/ Research
B.A. Psychology (Hons)	4 Years	Pass in 10 + 2 (any Discipline) with 50 % (45% in case of SC/ST/ OBC) marks	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.A Psychology	2 Years	Graduate with 45 % in Psychology(40 % in case of SC/ST/ OBC) marks.	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.Sc. Psychology (Hons)	4 Years	Pass in 10 + 2 (any Discipline, with Economics or Maths as a combination subject) with 50 % (45%in case of SC/ ST/ OBC) marks	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Psychology	2 Years	B.Sc Psychology degree from a recognized university with 45 %(40% in case of SC/ST/ OBC) marks in Psychology.	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.A. Journalism and Mass Communication	4 Years	Minimum10+2 (in any discipline) with 40% or above marks in aggregate	Reporter, Journalist, News Editor, or Photojournalist in print, electronic or digital media, Public Relations Officer,Content Writer/ Developer for websites, blogs and social media, Filmmaking and Radio jockey, Advertising campaigns, Social Media Manager
B.Sc. Journalism and Mass Communication	4 Years	Minimum10+2 (in Science Stream) with 40% or above marks in aggregate	
M.A. Journalism and Mass Communication	2 Years	Minimum Graduation (in any discipline) with 45% or above marks in aggregate	Director of Communications for advertising campaigns, Content writer/ Developer for websites, blogs and social media,Journalist/ Photojournalist, Filmmaking and Radio Jockey (RJ),Screenwriter, Sound Engineer, TV Correspondent, Producer, Art Director, Technical Communication Specialist , Web Producer
M.Sc. Journalism and Mass Communication	2 Years	Minimum B.Sc. or B. Tech Degree with 45% or above marks in aggregate.	

Law

Program	Duration	Eligibility	Career Prospects Employment Opportunities
BBA-LLB Integrated	5 Years	Pass in 10 + 2 with minimum 45 % (40 % in case of SC/ST, 42% in case of OBC) aggregate marks	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR
BA-LLB Integrated	5 Years	Pass in 10 + 2 with minimum 45 % (40 % in case of SC/ST, 42% in case of OBC) aggregate marks	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR
LL.B	3 Years	Graduate in any Discipline with minimum 45 % (40 % in case of SC/ST, 42% in case of OBC) aggregate marks	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR
LL.M	2 Years	Graduate with LLB degree (Recognised by BCI)	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR,Research

Management & Commerce Studies

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Com (Hons.)	4 Years	Pass in 10 + 2 examination in commerce or Science with 45% (40% in case of ST/ SC/OBC) marks	Banks, Financial Services, Corporates
BBA	3 Years	Pass in 10 + 2 (any Discipline) examination with minimum 40% marks	Banks, Financial Services, IT, Insurance, Telecom,Corporates, Consulting Companies.
B.A. Economics	4 Years	Pass in 10 + 2 (any Discipline) examination with minimum 40% marks	Financial Analyst/ Investment Banker/ Risk Manager/ Actuary/ Public Sector Policy Analyst/ Economic Advisor/ Public Sector Economist/ Central Bank Analyst/ Management Consultant/ Trade Specialist/ Data Analyst/ Statistician/ Market Research Analyst/ Startups and Business Ventures
B.Sc. Economics	4 Years	Pass in 10 + 2 with minimum 45 % marks in Mathematics	Financial Analyst/ Economist /Management Consultant /Data Scientist/ Public Policy Analyst/ Financial Manager/ Marketing Manager/ Research Analyst/ Economic Advisor/ Statistician/ Market Research Analyst/ Startups.
MBA	2 Years	Graduate in any discipline with minimum 50 % (45 % in case of SC/ST/OBC) aggregate marks	Banks, Financial Services, IT, Insurance, Telecom, Corporates, Consulting Companies, Research
Executive MBA	2 Years	Graduation in any discipline with 45% and above aggregate marks, with a minimum of two years of work experience.	Banks, Financial Services, IT, Insurance, Telecom, Corporates, Consulting Companies, Research
M.Com	2 Years	B.Com with 45%(40% in case of ST/SC/OBC) Marks	Banks, Financial Services, Corporates
Master of Hospital Administration (MHA)	2 Years	Graduate with 40% aggregate marks (Preference will be given to MBBS, BDS, BHMS, B.Sc Nursing, BPT, BAMS, B.Sc Allied Health Science, Bioscience, General Science, Veterinary Sciences & B.Sc Pharma)	Hospitals(Government /Private), NUHM, NRHM, NRLM, Healthcare consultancy firm, Hospitality industry, Medico-legal consultancy firm, Insurance sector (Government/ Private)
M.A Economics	2 Years	Candidates must hold BA/B.Sc. Honours degree in Economics with a minimum of 45% aggregate marks (or equivalent).	Public Policy Analyst/ Economic Advisor/ Central Bank Analyst/ Trade Specialist/ Public Sector Economist/ Management Consultant//Professor/ entrepreneurial ventures in policy-related domains.
M.Sc. Economics	2 Years	Candidates must hold a B.Sc. Honours degree in Economics with a minimum of 45% aggregate marks (or equivalent).	Data Scientist/ Financial Analyst/ Risk Manager/ Statistician/ Econometrician/ Research Consultant/ Actuary roles in think tanks of international organizations, and academic institutions.

Allied Health Sciences

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.sc. in Emergency Medical Technology	4 Years	Pass in 10 + 2 (Science Discipline) with 45% marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospital having ICU/ITU/Critical care unit, Demand in disaster management team for both state/central government, army/navy/airforce. Eligible for Post graduation courses.
B.sc. in Cardiac Care Technology	4 Years	Pass in 10 + 2 (Science Discipline) with 45 %marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private Hospitals in cardiology department, different cath- labs or diagnostic centers. Eligible for postgraduate courses.
B.sc. in Dialysis Therapy Technology	4 Years	Pass in 10 + 2 (Science Discipline) with 45 % marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospitals, NRHM, NUHM, NGO, clinics/ healthcare setup offering dialysis treatment. Eligible for Post Graduation courses in dialysis.
Bachelor in Health Information Management	4 Years	Pass in 10 + 2 (any Discipline) with 45 % marks (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government / Private hospitals, diagnostic centers, NRHM/ NUHM, legal firms,Healthcare consultancy .Eligible for Post Graduate courses.
B.Sc. Medical Lab Technology (BMLT)	4 Years	Pass in 10 + 2 (Science Discipline) with 45% marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospital having ICU/ITU/Critical care unit, Demand in disaster management team for both state/central government, army/navy/airforce. Eligible for Post graduation courses.
B.Sc. Medical Lab Technology (BMLT) (LE)	3 Years	Pass in 3 years diploma with 45% marks in aggregate (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospital having ICU/ITU/Critical care unit, Demand in disaster management team for both state/central government, army/navy/airforce. Eligible for Post graduation courses.
Master in Medical Lab Technology (MMLT)	2 Years	Candidate must have passed degree, e.g. B.Sc. MLT/ B.Sc. Physiology/ Microbiology/ Biotechnology/ Biochemistry or equivalent B.Sc. Biosciences from a recognized University	Opportunity in Government / Private sector, Lab Technician, Medical Lab Incharge, Research and Development Manager (Laboratory),Technical Officer etc. Can pursue research or can flourish in academics as well

Education

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Ed	2 years	Graduate or post graduate in any discipline with minimum 50 % (45 % in case SC/ST/ OBC) aggregate marks	Teaching in Secondary level
MA - Education	2 years	Graduate in any discipline	Teaching in Schools/Educational Administrators/ Research
M.Ed	2 years	B.Ed. (1/2 years)/ B.EL.ED/B.Sc.B.Ed./B.A B.Ed./ D.EL.Ed. /D.Ed. with a Bachelors degree. 50% marks at all the levels	Teaching in Teacher Education

Physical Education

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.P.Ed	2 years	Pass in graduation in any discipline and as per university selection procedure.	Jobs in School/ College/ Physical Trainer
D.P.Ed	2 years	Pass in 10+2 or equivalent with 50% of marks in any stream	
BPES	3 years	Pass in 10 + 2 examination or equivalent from any recognised education Board/ University	
BPES(LE)	1 year	Pass in two years diploma in Physical Education	
MPES	2 years	Candidates must have passed with at least 50% marks for Gen/OBC and 45% for SC/ST category, B.P.E.D (4yr. integrated) /B.P.E.D (1yr. or 2yr.)/B.P.E (3yrs.)/ B.sc (Physical Education)/ B.P.E.S (3yrs.)	Jobs in School/ College/ University, Physical Trainer/Sports/ Job in Govt. and Private sector as teacher, instructor, coach etc.

Yoga & Naturopathy

Program	Duration	Eligibility	Career Prospects Employment Opportunities
PGDYET	1 year	Any graduate	Yoga Teacher in Schools, Yoga Therapist/ Yoga Psycologist/ Yoga Inspector in MNC's, Health Club,Yoga Club
B.A. in Yoga	3 years	Pass in 10 + 2 (Arts/Commerce) with minimum 40% aggregate marks.	
B.Sc. in Yoga	3 years	Pass in 10 + 2 (Science) with minimum 40% aggregate marks.	

Special Education

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Ed.Spl.Ed. (ID)	2 years	Graduate or post graduate in any discipline with minimum 50 % (45% in case SC/ST/ OBC) aggregate marks	Teaching in Secondary level and at special schools
D.Ed.Spl.Ed. (IDD)	2 years	Pass in 10 + 2 (any Discipline) with minimum 50% (45 % in case SC/ ST/ OBC) aggregate marks.	Special schools, Sarva Siksha Abhiyan/ Resource teacher in General School/ Integrated/ Inclusive setup
M.Ed.Spl.Ed.(ID)	2 years	B.Ed. Spl. Ed (ID) / B.Ed. General with D.Ed. Spl. Ed (ID) with 50% marks (RCI).	Professional preparation of teacher educators- engaged in continuous professional development of teachers
Integrated B.A./ B.Com /B.Sc./ B.Ed. Spl.Ed.	4 years	Pass in 10 + 2 with 50% marks	Teaching in Secondary level and at special schools
Integrated B.A. B.Ed. Spl. Ed. (Visually Impaired)	4 years	Pass in 10 + 2 (any Discipline)	They can appear the CTET and TET exam i.e. for Central and State Level, RCI Registered Rehabilitation Professional in Clinic, Nursing home, Hospitals, Counseling centers, Special Educator or Children with Visual Impairment in Inclusive school, Special school and General school.

Clinical Psychology

Program	Duration	Eligibility	Career Prospects Employment Opportunities
M. Phil in Clinical Psychology	2 years	M.A / M.Sc degree in the Psychology with 55% marks in aggregate, Preferably with special paper in Clinical Psychology .	Qualified professional & extensive inputs & widespread Clinical experience to acquire the necessary skills in the area of Clinical Psychology

Library And Information Sciences

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Lib.I.Sc.	1 Year	Graduate in any discipline	School/ College/ University/ district/ State / National Librararies, Bank, Govt. Services, NGO's, Research
M.Lib.I.Sc.- Int.	2 Years	Graduate in any Discipline	
M.Lib.I.Sc.	1 Year	Graduate with B.Lib.I.Sc	

Nursing

Program	Duration	Eligibility	Career Prospects Employment Opportunities
GNM	3 years	10+2 with English and must have obtained a minimum aggregated score of 40% marks for the general candidates for any stream •35% SC/St candidates marks required from any stream • Age should be 17-35 (and for SC/ST 5 years relaxation) • Boys & Girls both are eligible	Hospitals(Government /Private), NUHM, NRHM, NRLM, Healthcare consultancy firm, Hospitality industry, Medico-legal consultancy firm, Insurance sector (Government/ Private)

P.hD

Program	Duration	Eligibility	Career Prospects Employment Opportunities
Engineering (CE, CSE, ME, ECE,EE), Science (Physics, Chemistry,Mathematics),Allied Health Sciences (Molecular Biology, Clinical Bacteriology, Clinical Biochemistry), Management (OB, HR, Marketing, Finance), Economics, Commerce, Law, English, Psychology, Education, Spl. Education, Sociology, Physical Education, Political Science, Philosophy	4 years	A two-year postgraduate degree or equivalent from a recognized Institution, with 55% marks or equivalent CGPA in concerned subject. or A regular, full time M.Phil degree from any recognized University	Faculty position, Scientist, Post-doc researcher

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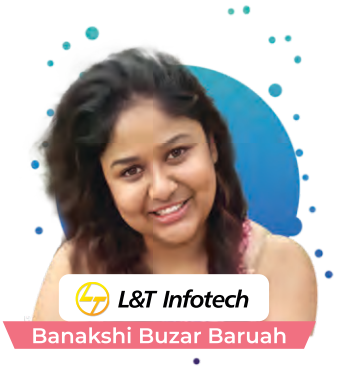
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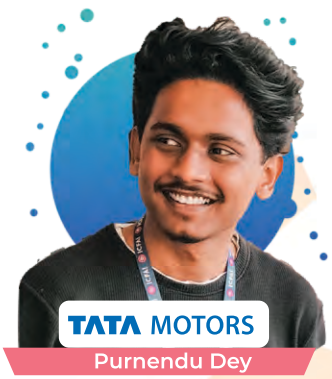
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