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# SAMHITA

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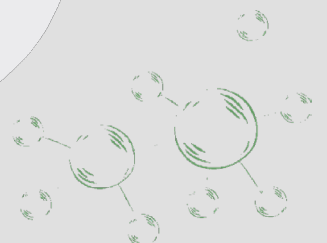


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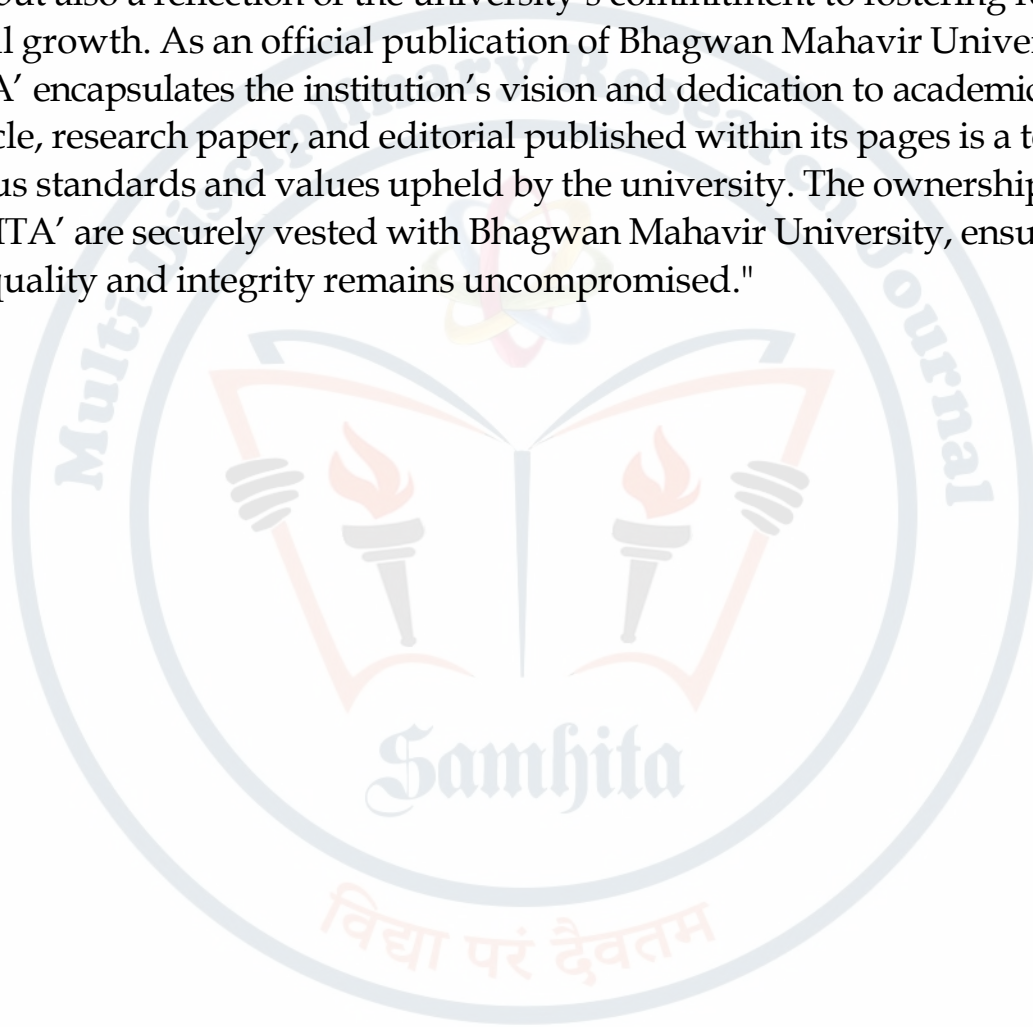
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# ***“SAMHITA” Multi- Disciplinary Research Journal***

**An official publication of Bhagwan Mahavir University, Surat**

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## Message from Editor-in-Chief

Dear Readers,

I am delighted to present Volume 2, Issue 2 of "SAMHITA" Multi-Disciplinary Research Journal. As we continue to explore the intersections of various disciplines, this issue showcases the resilience and innovative spirit of our community. Within these pages, you will find a diverse range of research, insightful perspectives, and thought-provoking discussions that reflect the ongoing growth and development in our field.



**Dr. Zarna Dedania**  
Editor-in-Chief,  
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This issue features original research articles, reviews, and case studies that highlight significant advancements, emerging trends, and practical applications. Our contributors have thoughtfully examined critical issues, Transgender Health Disparities, Global Health Governance, Human Rights and Development, Revolutionary Movements of Gujarat from 1857 to 1947, Formulation and assessment of Herbal Toning Product, pushing the boundaries of knowledge and encouraging dialogue across fields. We are proud to feature contributions that challenge existing paradigms, open new avenues for exploration, and spark meaningful conversations among scholars, practitioners, and policymakers.

The success of this issue is a testament to the tireless efforts of our authors, peer reviewers, and the editorial team, whose dedication ensures that "SAMHITA" Multi-Disciplinary Research Journal remains a leading platform for high-quality multidisciplinary research. I would like to take this opportunity to express my sincere gratitude to everyone involved in this publication. Without your hard work, this issue would not have been possible.

I would like to extend my sincere gratitude to our esteemed Associate Editor, Ms. Grishma Desai, Assistant Professor, Bhagwan Mahavir College of Pharmacy, for their exceptional contributions to the success of this issue. Their unwavering commitment, meticulous attention to detail, and dedication to maintaining the highest standards of academic excellence have been invaluable in shaping this volume.

As we look ahead to future issues, we encourage you to stay engaged with our journal, submit your own work, and share your ideas. Your contributions are essential to advancing the dialogue in our field.

Thank you for your unwavering support of "SAMHITA" Multi-Disciplinary Research Journal, and we hope you find this issue both enriching and inspiring.

Warm Regards

# ***“SAMHITA” Multi- Disciplinary Research Journal***

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# Understanding Transgender Health Disparities: A Comprehensive Review

Mrs. Sapna Pathakji\*<sup>1</sup>, Mrs. Shilpi Joshi<sup>1</sup>

<sup>1</sup> Assistant Professor, Bhagwan Mahavir College of Legal Education, Bhagwan Mahavir University, Surat

**Abstract:** Transgender individuals experience notable health disparities when compared to cisgender individuals, primarily due to social stigma, discrimination, and inadequate access to healthcare. These disparities are evident in several critical areas like Mental Health: Transgender people often suffer from higher levels of depression, anxiety, and suicidal thoughts, largely due to ongoing stigma and discrimination from society. These mental health challenges are compounded by lack of support and understanding from healthcare systems. Substance Abuse: There is a higher prevalence of substance abuse among transgender individuals, who may use substances to cope with societal pressures and discrimination. However, they face barriers in accessing appropriate treatment due to stigma and lack of specialized services. HIV and STIs: Transgender individuals, especially transgender women, face an increased risk of HIV and other sexually transmitted infections. This heightened risk is exacerbated by a lack of targeted prevention strategies and resources tailored to their specific needs. Access to Healthcare: Transgender individuals encounter substantial obstacles in obtaining healthcare, including discrimination by providers, insufficient knowledge among healthcare professionals about transgender health needs, and financial barriers. Many insurance plans do not cover gender-affirming treatments, further limiting access to necessary care. Gender-Affirming Care: Essential medical interventions such as hormone therapy and gender-affirming surgeries are often inaccessible due to financial constraints and lack of knowledgeable providers. Access to these services is crucial for improving the mental and physical well-being of transgender individuals. Addressing these disparities involves a multifaceted approach, including enhancing education and training for healthcare providers, implementing inclusive policies, promoting community support, and investing in research. These strategies aim to create a more equitable healthcare environment that effectively meets the needs of transgender individuals.

**Key Words:** Health Disparities, Mental Health, Substance Abuse, HIV and STIs, Healthcare Access, Gender-Affirming Care

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## 1. INTRODUCTION

Transgender individuals, whose gender identity does not match their sex assigned at birth, experience significant health disparities that impact their overall well-being. These disparities are diverse and complex, affecting various aspects of health. Mentally, transgender people face heightened challenges, including higher rates of depression, anxiety, and suicidal ideation, largely due to societal stigma, discrimination, and lack of acceptance. Substance abuse is also more prevalent among transgender individuals, as many use substances to cope with the stress and marginalization they encounter. Additionally, transgender individuals are at a greater risk for HIV and sexually transmitted infections (STIs), a situation exacerbated by higher-risk behaviors and insufficient targeted prevention efforts. Access to healthcare is another major barrier; transgender individuals often encounter discrimination from healthcare providers, face financial obstacles due to inadequate insurance coverage for gender-affirming treatments, and experience a lack of knowledgeable care providers. Gender-affirming care, including hormone therapy and surgeries, is critical for the mental and physical

health of transgender people but remains out of reach for many due to these financial and systemic barriers. Addressing these disparities requires a multifaceted approach: improving provider education and training, advocating for inclusive policies and insurance coverage, supporting community-based resources, and investing in research to better understand and address the specific needs of transgender individuals. By tackling these issues, we can work towards a more equitable healthcare system that supports the health and well-being of transgender people.

## 2. HEALTH DISPARITIES FACED BY TRANSGENDER INDIVIDUALS

### Health Disparities Faced by Transgender Individuals

Transgender individuals, whose gender identity differs from the sex assigned at birth, encounter several significant health disparities that impact their overall well-being. These disparities are complex and manifest across various aspects of health:

#### 1. Mental Health



Transgender individuals experience disproportionately high rates of mental health issues, which are deeply influenced by external social factors:

- **Higher Rates of Mental Health Issues:** Research indicates that transgender individuals are significantly more likely to suffer from depression, anxiety, and suicidal ideation compared to their cisgender counterparts. Studies such as those by Budge, Adelson, and Howard (2013) highlight these elevated levels of mental distress within the transgender population. [1]
- **Impact of Stigma and Discrimination:** The chronic stress caused by societal stigma and discrimination plays a major role in exacerbating mental health issues. Meyer's (2003) research underscores how the persistent negative societal attitudes and discrimination contribute to the mental health challenges faced by transgender individuals. [2]

## 2. Substance Abuse

Substance abuse is another critical area of concern for transgender individuals:

- **Increased Substance Use:** Many transgender individuals use substances such as alcohol, tobacco, and illicit drugs as a coping mechanism for the stress and marginalization they experience. Cochran et al. (2004) found higher rates of substance use in transgender populations, reflecting the difficulties they face. [3]
- **Barriers to Treatment:** Stigma and discrimination within healthcare settings often discourage transgender individuals from seeking help for substance abuse. Cruz (2014) highlights that fear of judgment and a lack of culturally competent care can prevent transgender individuals from accessing necessary treatment services. [4]

## 3. HIV and STIs

Transgender individuals, particularly transgender women, are at a higher risk for HIV and sexually transmitted infections (STIs):

- **Higher Prevalence of HIV and STIs:** The prevalence of HIV among transgender women is significantly higher than in the general population. Baral et al. (2013) report that transgender women face a disproportionately high risk of HIV infection. [5]
- **Lack of Targeted Prevention Efforts:** There is a critical shortage of HIV prevention resources tailored specifically for transgender communities. Herbst et al. (2008) emphasize the need for more targeted and effective prevention strategies that address the unique risks faced by transgender individuals. [6]

## 4. Access to Healthcare

Access to healthcare is a major challenge for transgender individuals, with several barriers impacting their ability to receive care:

- **Barriers to Access:** Transgender individuals often encounter discrimination from healthcare providers, insufficient provider knowledge about transgender health needs, and financial constraints. Research by Grant et al. (2011) shows how these factors collectively hinder access to healthcare services for transgender individuals. [7]
- **Insurance Issues:** Many insurance plans exclude or inadequately cover gender-affirming treatments, such as hormone therapy and surgeries. According to Kcomt and Gorey (2017), this lack of coverage limits transgender individuals' access to essential medical care. [8]

## 5. Gender-Affirming Care

Gender-affirming care is crucial for the well-being of transgender individuals, but it remains inaccessible for many:

- **Lack of Access to Hormone Therapy and Surgery:** Financial barriers, a shortage of knowledgeable providers, and discriminatory policies significantly limit access to gender-affirming care. Deutsch et al. (2015) discuss how these factors prevent many transgender individuals from receiving the necessary hormone treatments and surgical interventions. [9]
- **Impact on Well-Being:** Access to gender-affirming care has been shown to improve mental and physical health outcomes for transgender individuals. Glynn et al. (2016) highlight that receiving appropriate gender-affirming care can significantly enhance the overall well-being of transgender individuals, underscoring the importance of addressing barriers to this essential care. [10]

In summary, transgender individuals face profound health disparities across mental health, substance abuse, HIV and STIs, access to healthcare, and gender-affirming care. Addressing these disparities requires comprehensive solutions that include improving provider education, expanding access to culturally competent care, ensuring insurance coverage for gender-affirming treatments, and developing targeted prevention and support resources.

## 3. CAUSES OF HEALTH DISPARITIES

### 1. Social Determinants of Health

Social factors significantly contribute to the health disparities faced by transgender individuals:

- **Discrimination and Stigma:** Persistent discrimination and societal stigma are major contributors to poor mental and physical health outcomes for transgender individuals. Hatzenbuehler (2009) highlights that ongoing

negative social attitudes and experiences of prejudice can lead to chronic stress, which adversely affects overall health and well-being.

- **Economic Inequality:** Economic factors also play a critical role in health disparities. Transgender individuals often experience higher rates of unemployment and poverty compared to their cisgender counterparts. This economic inequality impacts their ability to afford healthcare services and can lead to poorer health outcomes. Badgett et al. (2019) note that financial instability limits access to essential resources and healthcare, exacerbating existing health disparities.[11]

## 2. Healthcare System Barriers

Systemic issues within healthcare systems further exacerbate health disparities for transgender individuals:

- **Provider Knowledge and Attitudes:** A significant barrier is the lack of knowledge among healthcare providers regarding transgender health issues. Many providers may not be familiar with the specific medical needs of transgender individuals or may hold prejudicial attitudes. Poteat et al. (2013) emphasize that this lack of cultural competency and awareness can lead to inadequate care and further marginalization of transgender patients.
- **Policy and Insurance Barriers:** Inadequate healthcare policies and insurance coverage are additional challenges. Many insurance plans do not cover gender-affirming treatments such as hormone therapy and surgeries, creating financial barriers for transgender individuals seeking necessary care. Jaffee et al. (2016) point out that these policy and insurance gaps contribute significantly to the healthcare disparities faced by transgender people.

## 4. STRATEGIES FOR IMPROVEMENT

### 1. Education and Training

Improving education and training for healthcare providers and the public is crucial to addressing health disparities:

- **Provider Education:** Increasing education and training for healthcare providers on transgender health issues is essential. This includes improving their cultural competency to better understand and address the unique needs of transgender patients. Obedin-Maliver et al. (2011) advocate for comprehensive training programs to enhance provider knowledge and sensitivity towards transgender issues.

- **Public Awareness Campaigns:** Public awareness campaigns are vital for reducing stigma and discrimination against transgender individuals. GLAAD (2017) suggests that these campaigns can educate the public, promote understanding, and foster a more inclusive and supportive environment for transgender people.

### 2. Policy and Legal Reforms

Policy and legal reforms are necessary to ensure better support and protection for transgender health:

- **Inclusive Healthcare Policies:** Advocating for inclusive healthcare policies is crucial to ensure that gender-affirming care is covered and accessible. Kellan et al. (2020) highlight the need for policies that support comprehensive coverage for transgender health needs to reduce disparities and improve access to necessary treatments.
- **Anti-Discrimination Protections:** Strengthening legal protections against discrimination in healthcare settings can improve access and quality of care for transgender individuals. The Movement Advancement Project (2020) emphasizes that robust anti-discrimination laws can help ensure that transgender individuals receive equitable treatment and protection within healthcare environments.

### 3. Community Support and Resources

Community-based support and resources are essential for improving health outcomes:

- **Support Groups and Resources:** Developing and supporting community-based organizations that offer resources and support tailored to transgender individuals can address many health disparities. Nemoto et al. (2015) stress the importance of such organizations in providing critical support and connecting transgender individuals with necessary services.
- **Mental Health Services:** Expanding access to mental health services specifically designed for transgender individuals is crucial for addressing mental health disparities. Budge et al. (2013) advocate for increased availability of specialized mental health services to better meet the needs of transgender patients and support their overall well-being. [12]

### 4. Research and Data Collection

Improving research and data collection can inform better policies and practices:



- **Comprehensive Data Collection:** Enhancing data collection on transgender health issues is necessary for developing effective policies and interventions. Reisner et al. (2015) argue that comprehensive data can help identify specific needs and gaps in healthcare, leading to more targeted and effective strategies.
- **Research Funding:** Increasing funding for research focused on transgender health disparities and interventions is essential. Lefkowitz et al. (2017) highlight the need for more research to understand the underlying causes of health disparities and to develop and implement effective solutions.

In summary, addressing the health disparities faced by transgender individuals involves tackling social determinants, overcoming healthcare system barriers, and implementing strategies that include education, policy reforms, community support, and robust research. These efforts are crucial for creating a more equitable healthcare system that effectively supports the needs of transgender individuals. [13]

## CONCLUSION

Addressing health disparities among transgender individuals necessitates a comprehensive and multifaceted strategy that tackles various aspects of the issue. Improving access to healthcare is a fundamental component, which involves expanding insurance coverage to include essential gender-affirming treatments, such as hormone therapy and surgeries, and addressing discrimination within healthcare settings. Ensuring that healthcare providers are trained to understand and respect transgender health needs is crucial, as this training helps reduce bias and improves patient interactions. Alongside provider education, public awareness campaigns play a vital role in challenging and changing societal attitudes toward transgender individuals, thereby reducing stigma and promoting acceptance. Enacting supportive policies is also essential; this includes implementing inclusive healthcare policies that guarantee coverage for transgender-specific care and strengthening anti-discrimination laws to protect transgender individuals from bias in healthcare environments. Additionally, community support is critical in providing resources and safe spaces for transgender individuals. Community-based organizations can offer vital support services, including mental health counselling and advocacy, which address the unique challenges faced by transgender people. By integrating these elements—improving healthcare access, educating providers and the public, enacting supportive policies, and enhancing community support—we can address the disparities experienced by transgender individuals and move toward a more equitable healthcare system that supports the well-being of all individuals.

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# Global Health Governance: The Role of International Organizations in Shaping Public Health Policies

Mrs. Shilpi Animesh Joshi

Assistant Professor, Bhagwan Mahavir College of Legal Education, Bhagwan Mahavir University, Surat, India

**Abstract:** *The World Health Organization (WHO), the United Nations (UN), and the World Bank are three international institutions that play a crucial role in the development and execution of global public health policy. This research paper examines this. The paper offers a thorough summary of the responsibilities and roles of these important organizations, emphasizing their contributions towards the governance of global health. The paper highlights the efficacy of these organizations in addressing a range of health challenges by analysing some of their successful public health initiatives, including the World Bank's health financing projects, the UN's health-related Sustainable Development Goals (SDGs), and the*

*WHO's Global Polio Eradication Initiative. It also emphasizes important limits and concerns in global health governance, such as problems with financing, political and bureaucratic roadblocks, coordinating, and responding to new health risks. The study provides tactical suggestions for improving the efficacy and efficiency of international health organizations to solve these issues. These suggestions include enhancing interagency cooperation, obtaining long-term financing, boosting political support, optimizing internal procedures, and fortifying quick reaction systems. The purpose of this study is to highlight the vital role that international organizations play in solving global health concerns and advancing public health by looking at these important features. The goal of this analysis is to offer suggestions for strengthening global health governance so that it can more effectively address present and upcoming health issues. For researchers, stakeholders, and policymakers, this report is an invaluable resource in the field of global health.*

**Key Words:** Global Health Governance, International Organizations, Public Health Policies, World Health Organization (WHO), United Nations (UN), World Bank, Health Policy Implementation

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## 1. INTRODUCTION

In an increasingly interconnected world, the health of populations transcends national boundaries, necessitating a coordinated global response to public health challenges. International organizations play a pivotal role in shaping and implementing public health policies that aim to address these challenges, promote health equity, and improve health outcomes worldwide. Among these organizations, the World Health Organization (WHO), the United Nations (UN), and the World Bank stand out due to their extensive mandates, resources, and influence in global health governance.

The World Health Organization, established in 1948, is the primary international body responsible for directing and coordinating health within the United Nations system. Its mandate includes setting international health standards, providing technical support to countries, and leading global health initiatives such as the eradication of smallpox and the ongoing fight against polio. The UN, through its various agencies like UNICEF and UNDP, addresses broader determinants of health, including poverty, education, and social inequality, and integrates health into its Sustainable

Development Goals (SDGs). The World Bank, on the other hand, contributes significantly through health financing, policy advice, and support for health

systems strengthening, particularly in low- and middle-income countries.

This paper aims to provide a comprehensive examination of the roles of these key international organizations in shaping public health policies. It will explore their mandates and functions, analyze successful public health initiatives they have spearheaded, and identify the challenges and limitations they face in global health governance. Furthermore, the paper will offer recommendations for enhancing the effectiveness of these organizations, with the goal of improving global health outcomes and preparedness for future health threats. By delving into these aspects, the study seeks to underscore the crucial role that international organizations play in promoting public health on a global scale and highlight areas for future improvement in global health governance. [1]

## 2. OVERVIEW OF THE MANDATES AND FUNCTIONS OF KEY INTERNATIONAL HEALTH ORGANIZATIONS

## World Health Organization (WHO)

**History and Establishment:** The World Health Organization (WHO) was established on April 7, 1948, as a specialized agency of the United Nations (UN) dedicated to international public health. The creation of WHO was a response to the need for a global health authority to address the complex and interconnected nature of health issues worldwide. Its Constitution, signed by 61 countries, defines its mission as promoting health, keeping the world safe, and serving the vulnerable.

**Mandates and Core Functions:** WHO's primary mandate is to act as the directing and coordinating authority on international health within the UN system. Its core functions include:

- Providing leadership on global health matters.
- Shaping the health research agenda.
- Setting norms and standards.
- Articulating evidence-based policy options.
- Providing technical support to countries.
- Monitoring and assessing health trends.

WHO is involved in a wide range of health issues, including infectious diseases, non-communicable diseases, health systems strengthening, emergency preparedness, and health promotion.

### Organizational Structure and Key Departments

WHO's organizational structure includes:

- The World Health Assembly: The decision-making body comprising representatives from all member states.
- The Executive Board: Provides advice and facilitates the work of the World Health Assembly.
- The Secretariat: Led by the Director-General, it comprises technical and administrative staff working at WHO headquarters in Geneva, regional offices, and country offices.

Key departments include:

- Health Emergencies Programme
- Noncommunicable Diseases and Mental Health
- Health Systems and Innovation
- Family, Women's, and Children's Health
- Communicable Diseases

### United Nations (UN)

**Role in Global Health Governance:** The UN plays a significant role in global health governance by

addressing the broad determinants of health through its various agencies and programs. It promotes health as a fundamental human right and integrates health into its broader development agenda, including the Sustainable Development Goals (SDGs).

### Relevant Bodies and Agencies

- **UNICEF (United Nations Children's Fund):** Focuses on improving child health and nutrition, reducing child mortality, and promoting maternal health.
- **UNDP (United Nations Development Programme):** Addresses the social determinants of health by promoting sustainable development, poverty reduction, and gender equality.
- **UNAIDS (Joint United Nations Programme on HIV/AIDS):** Coordinates global efforts to combat HIV/AIDS and provides strategic guidance and support to countries.
- **UNFPA (United Nations Population Fund):** Focuses on reproductive health, family planning, and maternal health.

These bodies work collaboratively to tackle various health issues, promote health equity, and ensure access to essential health services for all populations.

### World Bank

**Contribution to Global Health through Funding and Policy Support** The World Bank is a vital player in global health, providing financial and technical support to countries to strengthen their health systems and improve health outcomes. It supports health projects through loans, grants, and technical assistance, particularly in low- and middle-income countries.

### Key Health-Related Programs and Initiatives

- **Health, Nutrition, and Population (HNP) Global Practice:** Focuses on improving health outcomes through investments in health systems, addressing malnutrition, and enhancing population health.
- **Global Financing Facility (GFF):** Aims to accelerate efforts to end preventable maternal and child deaths by providing innovative financing solutions.
- **Pandemic Emergency Financing Facility (PEF):** Provides financial resources to help countries respond quickly to disease outbreaks and prevent them from becoming pandemics.
- **Results-Based Financing (RBF):** Links financing to the achievement of specific health

outcomes, encouraging efficiency and accountability in health service delivery.

The World Bank's approach combines financial support with policy advice, helping countries design and implement effective health policies and programs that promote sustainable development and health equity.

The mandates and functions of the WHO, UN, and World Bank are integral to shaping global public health policies and addressing health challenges. Each organization brings unique strengths and resources to the table, contributing to a comprehensive and coordinated effort to improve global health outcomes. By understanding their roles and leveraging their capabilities, the international community can better address current and future health challenges, promoting a healthier and more equitable world. [2]

### 3. ANALYSIS OF SUCCESSFUL PUBLIC HEALTH INITIATIVES LED BY INTERNATIONAL ORGANIZATIONS

#### WHO Initiatives:

**Smallpox Eradication Program:** The Smallpox Eradication Program is one of WHO's most notable successes. Initiated in 1967, the program aimed to eradicate smallpox through mass vaccination campaigns, surveillance, and containment strategies. By 1980, smallpox was declared eradicated, making it the first disease to be eliminated globally. This achievement highlighted the effectiveness of coordinated international health efforts and set a precedent for future eradication programs.

**Global Polio Eradication Initiative (GPEI)** Launched in 1988, the GPEI aims to eradicate polio worldwide through mass immunization campaigns, surveillance, and targeted outbreak response. The initiative has reduced global polio cases by over 99%, with only a few countries remaining polio-endemic. Key partners include WHO, UNICEF, Rotary International, the U.S. Centers for Disease Control and Prevention (CDC), and the Bill & Melinda Gates Foundation. The GPEI's success is attributed to strong international collaboration, robust vaccination efforts, and innovative strategies to reach vulnerable populations.

**COVID-19 Response and COVAX Facility** The COVID-19 pandemic posed unprecedented challenges, and WHO played a crucial role in coordinating the global response. WHO provided technical guidance, supported countries in scaling up their health systems, and facilitated international collaboration. The COVAX Facility, co-led by WHO, Gavi, and the Coalition for Epidemic Preparedness Innovations (CEPI), aimed to ensure equitable access to COVID-19 vaccines worldwide. COVAX has delivered millions of

vaccine doses to low- and middle-income countries, emphasizing the importance of global solidarity in addressing health crises.

#### UN Initiatives

**Sustainable Development Goals (SDGs) Related to Health** The UN's 2030 Agenda for Sustainable Development includes 17 SDGs, with SDG 3 specifically focusing on ensuring healthy lives and promoting well-being for all at all ages. SDG 3 encompasses targets such as reducing maternal and child mortality, combating communicable and non-communicable diseases, and achieving universal health coverage. The SDGs provide a comprehensive framework for global health efforts, emphasizing the interconnectedness of health with other development goals such as poverty reduction, education, and gender equality.

**UN's Role in Combating HIV/AIDS (UNAIDS)** UNAIDS, established in 1996, coordinates the global response to HIV/AIDS, bringing together efforts from 11 UN agencies and other partners. UNAIDS focuses on prevention, treatment, care, and support for people living with HIV. Through initiatives like the 90-90-90 targets (90% of people living with HIV knowing their status, 90% of those diagnosed receiving treatment, and 90% of those on treatment achieving viral suppression), UNAIDS has significantly contributed to reducing new HIV infections and improving the quality of life for those affected.

**Maternal and Child Health Programs (UNICEF)** UNICEF's maternal and child health programs aim to improve the health and well-being of mothers and children, particularly in low- and middle-income countries. Initiatives include immunization campaigns, nutrition programs, and efforts to improve access to clean water and sanitation. UNICEF's Integrated Management of Childhood Illness (IMCI) strategy has been instrumental in reducing child mortality by addressing common childhood illnesses and promoting healthy practices. Additionally, UNICEF's work on promoting breastfeeding, providing micronutrient supplements, and supporting maternal health services has led to significant improvements in maternal and child health outcomes.

#### World Bank Initiatives

**Health Financing and Support for Health Systems Strengthening** The World Bank plays a crucial role in health financing and strengthening health systems, particularly in low- and middle-income countries. Through loans, grants, and technical assistance, the World Bank supports countries in building resilient health systems, improving service delivery, and expanding access to essential health services. Initiatives like the Health Systems Strengthening for Universal Health Coverage (UHC) program aim to ensure that all individuals receive the

health services they need without suffering financial hardship.

**Disease Prevention and Control Projects** The World Bank funds and supports various disease prevention and control projects, addressing both communicable and non-communicable diseases. Examples include initiatives to combat malaria, tuberculosis, and neglected tropical diseases, as well as efforts to reduce the burden of non-communicable diseases such as diabetes and cardiovascular diseases. These projects often involve multi-sectoral approaches, integrating health interventions with efforts to improve nutrition, sanitation, and education.

**Health, Nutrition, and Population (HNP) Projects** The Health, Nutrition, and Population (HNP) Global Practice of the World Bank focuses on improving health outcomes through comprehensive projects that address the determinants of health. HNP projects include initiatives to improve maternal and child health, enhance nutrition, and address population health challenges. The World Bank's focus on results-based financing (RBF) links funding to the achievement of specific health outcomes, encouraging efficiency and accountability in health service delivery. Projects under the HNP umbrella aim to improve health indicators, reduce malnutrition, and promote healthy behaviours, contributing to overall development and well-being.

The successful public health initiatives led by WHO, the UN, and the World Bank demonstrate the critical role of international organizations in addressing global health challenges. These initiatives have significantly improved health outcomes, reduced disease burdens, and promoted health equity worldwide. By leveraging their mandates, resources, and expertise, these organizations have made substantial contributions to global public health, setting the stage for continued progress and collaboration in the future.[3]

#### 4. CHALLENGES AND LIMITATIONS IN GLOBAL HEALTH GOVERNANCE

Global health governance faces several challenges and limitations that can hinder effective coordination, resource allocation, and response to emerging health threats. Understanding these challenges is crucial for improving the efficiency and effectiveness of international efforts in public health.

##### Coordination and Collaboration

**Issues with Inter-Agency Coordination:** Inter-agency coordination among international organizations, national governments, and non-governmental organizations (NGOs) can be complex and fragmented. Different organizations may have overlapping mandates or priorities, leading to competition rather than collaboration. This can result in

inefficiencies, duplicated efforts, and gaps in coverage, particularly in emergency response situations.

**Fragmentation of Efforts and Duplication of Activities:** Multiple organizations often work independently on similar health issues, leading to duplication of efforts and inefficient use of resources. Lack of coordination can weaken the collective impact of interventions and diminish the overall effectiveness of global health initiatives. Harmonizing strategies and aligning priorities across organizations is essential to maximize resources and achieve sustainable health outcomes.

##### Funding and Resource Allocation

**Challenges in Securing Sustainable Funding:** Global health initiatives rely heavily on external funding from donor countries, philanthropic organizations, and international financial institutions. Securing sustainable funding over the long term can be challenging, especially for diseases that do not receive sufficient attention or funding compared to high-profile health threats. Dependence on unpredictable funding sources can jeopardize continuity and effectiveness of health programs.

**Inequities in Resource Distribution:** Resource distribution across regions and countries may not align with the burden of disease or health needs. Low- and middle-income countries often face disparities in funding allocation, limiting their capacity to address critical health issues. Inequitable resource distribution can perpetuate health inequalities and hinder progress towards achieving health equity and universal health coverage.

##### Political and Bureaucratic Hurdles

**Political Interference and Lack of Political Will:** Political agendas and priorities of member states or donor countries can influence global health governance decisions. Political interference may undermine evidence-based decision-making and hinder the implementation of effective health policies. Lack of sustained political will to invest in health systems and respond to health emergencies can weaken global health governance efforts.

**Bureaucratic Inefficiencies within Organizations:** International organizations and national health authorities may face bureaucratic challenges that delay decision-making and implementation of health interventions. Complex administrative procedures, overlapping responsibilities, and slow response times can impede timely and effective responses to health emergencies. Streamlining bureaucratic processes and enhancing organizational agility are crucial for improving operational efficiency and responsiveness.

##### Response to Emerging Health Threats

**Limitations in Addressing Rapidly Evolving Health Crises:** Global health systems may struggle to respond quickly and effectively to emerging health threats such as pandemics or outbreaks of novel infectious diseases. Challenges include delays in detecting outbreaks, coordinating international responses, and mobilizing resources to affected regions. Inadequate preparedness and response mechanisms can exacerbate the impact of health crises and contribute to global health insecurity.

**Challenges in Maintaining Flexibility and Adaptability:** Health systems and governance structures may lack flexibility to adapt to changing health landscapes and evolving epidemiological trends. Rapid advancements in science and technology require agile responses and innovative approaches to disease prevention, surveillance, and treatment. Enhancing flexibility and adaptability within global health governance frameworks is essential for addressing emerging health threats effectively.

Addressing the challenges and limitations in global health governance requires concerted efforts from international organizations, national governments, civil society, and the private sector. Strengthening coordination mechanisms, ensuring equitable resource allocation, fostering political commitment, and enhancing organizational agility are key priorities for improving the resilience and effectiveness of global health systems. By addressing these challenges, stakeholders can better prepare for future health emergencies and advance progress towards achieving sustainable development goals related to health and well-being globally. [4]

## 5. RECOMMENDATIONS FOR ENHANCING THE EFFECTIVENESS OF INTERNATIONAL HEALTH ORGANIZATIONS

To overcome the challenges and improve the effectiveness of international health organizations, several key recommendations can be implemented across various domains of global health governance.

### Improving Coordination and Collaboration

**Strengthening Inter-Agency Communication and Partnerships:** Enhancing communication channels and fostering partnerships among international organizations, national governments, NGOs, and other stakeholders is crucial. Regular dialogues, joint planning sessions, and information sharing can promote synergy, reduce duplication of efforts, and improve the overall coordination of health interventions.

**Developing Integrated and Cohesive Strategies:** Formulating integrated strategies that align the priorities and activities of multiple stakeholders is essential. Coordinated approaches can address complex health challenges comprehensively, leveraging diverse expertise

and resources effectively. Integrated strategies should encompass prevention, treatment, and health system strengthening efforts to achieve sustainable health outcomes.

### Securing Sustainable Funding

**Advocating for Increased Investment in Global Health:** Advocacy efforts to mobilize political support and financial commitments for global health initiatives are critical. Highlighting the economic, social, and humanitarian benefits of investing in health can encourage donor countries, philanthropic organizations, and international financial institutions to prioritize and sustain funding for health programs. Long-term funding commitments are essential for continuity and impact.

**Exploring Innovative Financing Mechanisms:** Diversifying funding sources and exploring innovative financing mechanisms can enhance financial sustainability. Options such as public-private partnerships, impact investing, and health bonds can mobilize additional resources for health infrastructure development, disease prevention, and health service delivery. Innovative financing mechanisms should be transparent, accountable, and aligned with health equity principles. [5]

### Enhancing Political Commitment

**Engaging Political Leaders and Stakeholders:** Engaging political leaders at national and international levels is crucial for prioritizing health on policy agendas. Advocacy campaigns, high-level summits, and diplomatic efforts can raise awareness about health issues and secure political commitment to allocate resources and enact supportive policies. Building coalitions with diverse stakeholders can strengthen advocacy efforts and amplify the health agenda's impact.

**Promoting Accountability and Transparency:** Promoting accountability mechanisms and transparency in decision-making processes can enhance trust and credibility in global health governance. Transparent reporting of financial flows, program outcomes, and impact assessments fosters accountability to stakeholders and ensures efficient use of resources. Clear governance structures and mechanisms for monitoring progress are essential for achieving measurable health outcomes.

### Increasing Organizational Efficiency

**Streamlining Bureaucratic Processes:** Simplifying administrative procedures and reducing bureaucratic hurdles within international organizations can improve operational efficiency. Clear delegation of responsibilities, standardized protocols, and streamlined workflows enable faster decision-making and implementation of health interventions. Enhancing administrative efficiency frees up

resources for frontline health services and strengthens organizational agility.

#### **Fostering a Culture of Innovation and Adaptability:**

Promoting a culture of innovation encourages the development and adoption of new technologies, strategies, and approaches to address evolving health challenges. Investing in research and development, supporting pilot projects, and fostering partnerships with the private sector can drive innovation in health systems strengthening, disease surveillance, and healthcare delivery. Embracing adaptive management practices allows organizations to respond effectively to emerging health threats and changing contexts. [6]

#### **Strengthening Response to Emerging Health Threats**

##### **Investing in Early Warning Systems and Rapid Response Mechanisms:**

Enhancing global health security requires investment in early warning systems, surveillance networks, and rapid response mechanisms. Timely detection of outbreaks, effective data sharing, and coordinated response efforts are essential to contain infectious diseases and mitigate their impact on global health. Strengthening capacities for emergency preparedness and response ensures swift and coordinated action during health emergencies.

##### **Enhancing Global Surveillance and Data-Sharing Capabilities:**

Improving global surveillance systems and enhancing data-sharing capabilities facilitate early detection, monitoring, and response to health threats. Standardized data collection, analysis, and dissemination across borders enable real-time decision-making and evidence-based interventions. Strengthening health information systems and interoperability among national and international databases enhances the capacity to track disease trends and assess health outcomes globally.

Implementing these recommendations can enhance the effectiveness of international health organizations in addressing global health challenges, promoting health equity, and achieving sustainable development goals. By improving coordination, securing sustainable funding, enhancing political commitment, increasing organizational efficiency, and strengthening response capacities, stakeholders can collectively advance global health governance and ensure resilient health systems for all

populations. Collaboration and collective action are essential to building a healthier and more equitable world. [7]

#### **6. CONCLUSION:**

The conclusion of this paper highlights the pivotal role of international organizations like WHO, UN, and the World Bank in global health governance. It summarizes key findings on their mandates, successful initiatives (such as smallpox eradication and COVID-19 response), challenges (including coordination issues and funding gaps), and the implications for global health. Recommendations for enhancing effectiveness include improving coordination, securing sustainable funding, enhancing political commitment, increasing organizational efficiency, and strengthening responses to health threats. Future research directions are identified, focusing on assessing initiative impacts, exploring health diplomacy, innovative financing, health systems strengthening, and improving global health governance frameworks. Addressing these areas can optimize global health efforts and promote equitable health outcomes worldwide.

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# Human Rights and Development: Realizing Transgender Persons Rights as a Key Pathway

Sapna Pathakji<sup>1</sup>, Dr. Shilpi Sharma<sup>2</sup>

<sup>1</sup> Research Scholar Ph. d Law Auro University, Surat Gujarat

<sup>2</sup> Associate Professor and School of Law Auro University, Surat Gujarat

**Abstract:** This paper explores the intersection of human rights and development by focusing on the realization of transgender persons' rights as a critical pathway to societal progress. Despite legal advancements such as the Transgender Persons (Protection of Rights) Act, 2019, transgender individuals continue to face significant challenges in achieving equality and inclusion. This study examines the current status of transgender rights, identifies key barriers to their full realization, and assesses

the impact of these barriers on overall human development. Through a comprehensive analysis of legal frameworks, social attitudes, and policy implementations, the research underscores the importance of integrating transgender rights into the broader human rights agenda. By advocating for enhanced legal protections, social acceptance, and inclusive policies, this paper argues that recognizing and upholding the rights of transgender persons is not only a moral imperative but also a vital component of sustainable development. The findings highlight the need for a multi-faceted approach to address the complex issues faced by the transgender community and provide recommendations for policymakers, activists, and stakeholders committed to fostering an inclusive and equitable society.

**Key Words:** Transgender rights, Human rights, Social inclusion, Legal frameworks, Transgender Persons (Protection of Rights) Act, 2019.

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## 1. INTRODUCTION

The struggle for Human rights has been a defining theme in the global quest for a just and equitable society. One of the most significant and often overlooked segments of the population in this pursuit are transgender persons. Over the years, transgender individuals have faced systemic discrimination, social stigmatization, and legal marginalization, which have hindered their fundamental rights and impeded their full participation in society. The realization of transgender persons' rights is not only a matter of social justice but also emerges as a pivotal path to sustainable and inclusive development. Transgender persons represent a diverse and resilient community, encompassing individuals whose gender identity differs from the sex assigned at birth. Their experiences are multifaceted, marked by unique challenges that span various socio-cultural, economic, and political landscapes. Despite their unique struggles, transgender persons have been denied basic human rights in many parts of the world, from access to education and employment to healthcare and legal recognition of their gender identity. In recent times, significant strides have been made in acknowledging and advocating for the rights of transgender individuals. Globally, many countries have witnessed the emergence of movements and organizations that champion transgender rights, leading to legislative reforms, policy changes, and societal awareness. While these developments are commendable, much work remains to be done to create an

environment where transgender persons can thrive without fear of discrimination or violence. This research paper seeks to explore the vital relationship between the realization of transgender persons' rights and sustainable development. By examining the challenges faced by transgender individuals, the paper aims to shed light on the numerous ways their inclusion and empowerment can contribute to the overall progress of societies and nations. Furthermore, this research endeavours to identify best practices and policy frameworks that have proven effective in promoting transgender rights, ultimately guiding policymakers, activists, and advocates in their efforts to build more inclusive societies.

## 2 LITERATURE REVIEW

The reviews are categorized into the following –

Nanjundaswamy, S. (2014) found that male to female transsexuals in Karnataka state are subjected to persistent inequity in almost all fields of life, numerous financial restrictions, various health threats, infringement of human rights. [1]

Athreye (2015) argued that transgender people constitute the marginalized section of Indian society and face lots of legal, social as well as economic difficulties. Their families avoid accepting their TG children; most of these children have left their school because of ill treatment by peers as well as by teachers, and have very limited access to health services and public spaces. But some of the

transgender have excelled in various fields despite many barriers. [2]

Oommen, M. A. (2016) differentiated between the term transgender and intersex people. This article sketched out the different problems faced by transgenders in India i.e., zero acceptances by their biological family, extreme discrimination and harassment in getting education, medical facilities and their basic rights. This study emphasized that the acceptance of transgenders by the Supreme Court of India and redrafting of the Rights of Transgender Persons Bill, 2014 helped this marginalized community to live with dignity.[3]

Divan, V. et. al. (2016) explained that the United Nations Development Programme (UNDP) furnished literature of transgender community's human rights, health issues, socio- economic issues and also mentioned solutions for these problems. This document addressed to countries to take actions immediately to tackle the infringement of human rights of TG persons, prevalence of HIV, poverty and humiliation. Suggests encouraging social acceptance, superior health services, impartiality and socio-economic development.[4]

Sawant, N. S. (2017) stated that Indian government has taken various welfare measures for the transgender people which include census, certification, providing citizenship ID Cards, passports, housing facility, legal measures, police reforms, legal and constitutional safeguards to prevent infringement of human rights of the third gender persons and institutional mechanisms to address unambiguous concerns of transgender people.[5]

Transgender community in India struggles for basic rights amid pandemic" The Guardian Publication Date: April 2021 .The article explores the challenges faced by the transgender community in India, particularly during the COVID-19 pandemic. The article highlights the discrimination and marginalization that many transgender individuals face in India, including limited access to healthcare, education, and employment. The pandemic has exacerbated many of these challenges, with many transgender individuals facing increased financial insecurity and limited access to basic necessities such as food and shelter.

Transgender Individuals Experience Elevated Levels of Discrimination and Violence, according to a New Report" Source: American Journal of Public Health Publication Date: January 2022 .The article discusses the findings of a report published by the National LGBTQ Task Force, which highlights the significant levels of discrimination and violence experienced by transgender individuals in the United States. The report is based on a survey of over 15,000 transgender individuals and highlights the many ways in which they face discrimination and marginalization in areas such as healthcare, employment, and housing. The authors argue that these findings underscore the urgent need for policies and practices that support the health and well-being of transgender individuals and call for greater awareness and understanding of the issues facing this community.

"Legal Recognition of Transgender People: A Review of Laws and Policies in 57 Countries" Source: International

Journal of Transgender Health Publication Date: April 2020 .The article provides a comprehensive review of laws and policies related to the legal recognition of transgender people in 57 countries. The authors note that many countries still do not provide legal protections or recognition for transgender individuals, and that transgender individuals often face significant barriers in accessing legal rights such as name and gender marker changes on official documents. They also highlight the importance of legal recognition for the health and well-being of transgender individuals, as well as for their ability to access basic services such as healthcare and education. The authors review the different types of legal recognition available in different countries, including gender recognition laws, court orders, and administrative procedures. They also discuss the different requirements and procedures associated with each type of recognition, as well as the benefits and limitations of each approach. The authors conclude that legal recognition of transgender people is an important step towards reducing discrimination and promoting equality, and that more work is needed to ensure that transgender individuals have access to legal rights and protection around the world.

## RESEARCH METHODOLOGY

This research study includes the doctrinal methods of research. For doctrinal research, the secondary sources has been used and broadly, it revolves around several national and international legislations, national and international reports, the law libraries resources, legal, fictional and non-fictional books, commentaries, online and offline articles, the historical, latest, national and international judicial pronouncements, magazines, newspaper editorials, movies (national and international), websites, etc. and are properly explained in the bibliography section. The researcher will go through various books, journals, articles and newspapers on the subject for the purposes of collecting literature for the study.

## 2. RESULTS AND DISCUSSION

Understanding the Terminology:

LGBTIQ+ acronym for lesbian, gay, bisexual, transgender, intersex and queer. The plus sign represents people with diverse sexual orientation, gender identity, gender expression and sex characteristics who identify using other terms.

LESBIAN woman whose enduring romantic, emotional and/or physical attraction is to women.

GAY men whose enduring romantic, emotional and/or physical attraction is to men; also, women who are attracted to other women.

BISEXUAL person who has the capacity for romantic, emotional and/or physical attraction to people of more than one gender.

INTERSEX people born with sex characteristics that do not fit typical definitions of male and female bodies. Intersex is an umbrella term used to describe a wide range of natural bodily variations. There are more than 40 intersex

variations; experts estimate between 0.5 per cent and 1.7 percent of the population is born with intersex traits.

QUEER traditionally a negative term, has been reclaimed by some people and is considered inclusive of a wide range of diverse sexual orientations, gender identities and expressions. It may be used as an umbrella term for people with diverse sexual orientation, gender identity, gender expression and sex characteristics (SOGIESC), or as an alternative to the phrase "people with diverse SOGIESC" or the acronym. LGBT: Queer is used by many people who feel they do not conform to a given society's economic, social and political norms based on their sexual orientation, gender identity and gender expression.

What does it mean to be a transgender?

The term Transgender (T.G) is used in the form of an umbrella to include a wide range of identities and expressions of people contrary to their biological sex and not limiting it to transsexual people only.[6]

There are four types of people categorized in the umbrella definition they are-

(1) Persons whose gender identity or expression or behavior does not conform to their biological sex.

(2) Transgender people may also include identity to their sex assigned at birth. These are those persons who do not identify as either male or female commonly referred to as 'Hijras/Eunuchs'. They are neither men by reason of anatomy or appearance and nor women as they lack a female reproductive system. They are claimed as 'third-gender' because of the absence of procreation abilities. Among Hijras, there are emasculated men (castrated, nirvana), non-emasculated men and intersexed persons (hermaphrodites).

(3) Transgender includes people who intend to undergo sex reassignment surgery (SRS) or have undergone SRS to align their biological sex with their gender. They are called "Transsexual persons".

(4) There are persons who wear clothes designed for the opposite sex or cross-dress in contrast to their gender. They are called transvestites. They are not usually transgender but just feel comfortable to wear opposite sex clothes. They prefer to be described as 'Cross-dressers'.

The emergence of right to development of transgender people:

International legal framework

The historical and legal framework of transgender individuals internationally reveals a diverse range of experiences and perspectives. Here are some key aspects of the legal framework of transgender individuals from an international perspective:

**Ancient and Indigenous Cultures:** Gender diversity has been recognized in various ancient and indigenous cultures worldwide. Examples include the Hijra community in South Asia, Two-Spirit people in Native American cultures, "fa'afafine" in Samoa, and "sworn virgins" in Albanian culture. This culture often had different understandings and

acceptance of gender variance, incorporating transgender individuals into societal roles and traditions.

**Colonialism and Western Influence:** The colonial era, starting from the 16th century onwards, significantly impacted the recognition and acceptance of gender diversity in many regions. Western cultural norms and concepts of gender were often imposed on indigenous populations, leading to the erosion of local understandings of transgender identities and the marginalization of transgender individuals.

**Medicalization and Pathologization:** The medicalization and pathologization of transgender identities emerged in the late 19th and early 20th centuries in various parts of the world. This often occurred as Western medical and psychiatric frameworks categorized gender nonconforming individuals as mentally disordered or deviant. These frameworks influenced understandings of transgender identities in many countries.[7]

**Emergence of Transgender Activism:** Modern transgender activism emerged in different parts of the world during the 20th century. Activists worked to challenge societal discrimination and advocate for transgender rights. The Stonewall riots in the United States in 1969, for example, sparked the LGBTQ+ rights movement and had a significant impact on transgender activism globally.

**Legal Recognition and Protections:** The legal recognition and protection of transgender rights have varied widely across countries and regions. Some countries have implemented legal frameworks to recognize gender identity, allow gender marker changes on official documents, and provide protections against discrimination. Other countries still lack comprehensive legal protections for transgender individuals, and in some cases, transgender identities are criminalized.

**Regional Variances:** The experiences and challenges faced by transgender individuals differ across regions. For example, European countries have seen advances in legal recognition and protections, while some African and Asian countries still have laws that criminalize transgender identities. The experiences and rights of transgender individuals in each region are shaped by cultural, religious, social, and political factors specific to that region.

**International Activism and Solidarity:** Transgender activism is not limited to any one country or region; it is a global movement. Activists and organizations work collaboratively to raise awareness, advocate for legal reforms, and combat discrimination and violence against transgender individuals. International networks and alliances have played a crucial role in sharing knowledge, resources, and support across borders. Internationally, there are several legal provisions and frameworks that pertain to the rights and protections of transgender individuals.

**Universal Declaration of Human Rights (UDHR):** The UDHR, adopted by the United Nations General Assembly in 1948, establishes fundamental human rights that apply to all individuals, including transgender people. It includes provisions such as the right to life, liberty, and security of person; the right to equality before the law; and the

prohibition of discrimination based on various grounds, including gender.

International Covenant on Civil and Political Rights (ICCPR): The ICCPR, adopted by the United Nations General Assembly in 1966, is a legally binding treaty that outlines civil and political rights. Article 26 of the ICCPR prohibits discrimination based on various grounds, including gender, and guarantees equal protection under the law. This provision can be invoked to protect transgender individuals from discrimination and ensure their equal treatment.

Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT): The CAT, adopted by the United Nations General Assembly in 1984, is a treaty aimed at preventing and prohibiting torture and cruel treatment. While not explicitly mentioning transgender individuals, this convention can be relevant in cases where transgender people face violence, abuse, or mistreatment due to their gender identity.

Convention on the Elimination of All Forms of Discrimination against Women (CEDAW): CEDAW, adopted by the United Nations General Assembly in 1979, is an international treaty specifically addressing gender discrimination. It calls for the elimination of discrimination against women in all areas of life and can be used to advocate for the rights of transgender women.

Yogyakarta Principles: The Yogyakarta Principles, a set of principles on the application of international human rights law in relation to sexual orientation and gender identity, were developed by human rights experts and activists in 2006. Although not legally binding, these principles provide guidance on the interpretation and application of existing human rights norms to protect the rights of transgender and gender-diverse individuals.

Regional Agreements: Various regional human rights agreements, such as the European Convention on Human Rights and the American Convention on Human Rights, contain provisions that protect individuals from discrimination based on gender identity. Regional courts and bodies have interpreted these provisions to safeguard the rights of transgender individuals in specific regions.

United Nations (UN) Resolutions: The UN has passed several resolutions and statements affirming the rights of transgender individuals. The UN Human Rights Council has called for an end to violence and discrimination based on gender identity, and the UN General Assembly has passed.

European Convention on Human Rights (ECHR): The ECHR, which is overseen by the European Court of Human Rights, has been interpreted to protect the rights of transgender individuals. The court has held that the right to respect for private life under the convention includes the right to personal identity and self-determination, including the ability to transition and have one's gender recognized.

Inter-American Court of Human Rights: The Inter-American Court of Human Rights, through its jurisprudence, has recognized and affirmed the rights of transgender individuals. It has held that states must ensure the right to gender identity, including legal recognition and protection against discrimination.

African Commission on Human and Peoples' Rights: While Africa does not have a regional treaty specifically addressing the rights of transgender individuals; the African Commission on Human and Peoples' Rights has issued resolutions condemning violence and discrimination based on sexual orientation and gender identity. These resolutions call on states to protect the rights of LGBT individuals, including transgender people.

Context of Transgender people in India for Human rights Interventions

Indian Census has never recognized third gender i.e., Transgender while collecting census data for years. But in 2011, data of Transgender's were collected with details related to their employment, Literacy and Caste. In India, the total population of transgender is around 4.88 Lakh as per 2011 census.[8]

The 2014 Supreme Court of India's 'NALSA judgment', offered unprecedented legal recognition to gender identity of transgender people – their right to choose their self-affirmed gender as a man, woman or transgender. The judgment issued directives to the central and state governments to develop welfare programme for the transgender community. The Transgender Persons (Protection of Rights) Act was passed on December 5, 2019. The Act is an anti-discrimination legislation with provisions to protect transgender people from discrimination in various spheres of life. It directs the state to bring trans-sensitive, trans-specific and trans-inclusive welfare schemes. Subsequently, the rules of the Act that came into force on September 25, 2020, have emphasized the need for specific schemes for healthcare, education and social security of transgender people. The United Nations Development Programm (UNDP) India office has developed a framework for the welfare of transgender people in collaboration with The Humsafar Trust (HST) and Centre for Sexuality and Health Research and Policy (C-SHaRP). [9]

India constitution protects the transgender persons:

The Supreme Court in 2014 officially declared transgender as a third gender' in India. The court held that all transgender persons are entitled to fundamental rights under Article 14 (Equality), Article 15 (Non-Discrimination), Article 16 (Equal Opportunity in Public Employment), Article 19(1)(a) (Right to Free Speech and expression) and Article 21 (Right to Life) of the Indian Constitution. In 2020, the parliament legally recognized 'transgender' as an official gender in India .No one can deny any "person" equality before the law or equal protection of law. Using the term "person" shows that no discrimination is done on the basis of sex or gender identity. Transgender. Persons cannot be subjected to unfair treatment in educational institutions or at the time of employment. They also have the right to equal health services, and the right to use public property or the right to freely move in the country.[10]

Right to Employment:

No government or private entity can discriminate against a transgender person in employment matters, including recruitment, and promotion.

Right to education:

Educational institutions funded or recognized by the relevant government shall provide inclusive education, sports and recreational facilities for transgender persons, without discrimination.

#### Right to Health care:

The government must take steps to provide health facilities to transgender persons including separate HIV surveillance centers, and sex reassignment surgeries and the government shall review medical curriculum to address health issues of transgender persons, and provide comprehensive medical insurance schemes for them.

#### Right of residence:

Every transgender person shall have a right to reside and be included in his household. If the immediate family is unable to care for the transgender person, the person may be placed in a rehabilitation center, on the orders of a competent court.

#### Special rights of transgender persons:

Under the Transgender Persons (Protection of Rights) Rules, 2020, Central and State governments can classify them as 'Other Backward Classes' for the purposes of vertical reservation. The Transgender Persons (Protection of Rights) Act makes it illegal for anyone to separate a transgender person from their family or ask them to move out of their home, village or community. If anyone tries to commit this offense, then they shall be punished with imprisonment ranging from 6 months to 2 years. and if any parent or member of the immediate family is unable to take care of a Transgender person, the competent court shall by an order direct such person to be placed in a rehabilitation center. (Section 12(3) of the act).

Transgender Persons' (Protection of Rights) Act, 2019 is a significant piece of legislation passed by the Parliament of India. The act aimed to protect and safeguard the rights of transgender persons in the country, addressing various issues and challenges they faced. However, it was also met with criticism and concerns from the transgender community and activists. Here is an analysis of the key provisions and criticisms of the Act .

#### Key provision of the transgender persons act, 2019

The Act defines a transgender person as someone whose gender does not match the sex assigned at birth. It recognizes the right of self-perceived gender identity.

#### Definition of the Transgender person:

The Act defines a transgender person as someone whose gender does not match the sex assigned at birth. It recognizes the right of self-perceived gender identity.

#### Protection against discrimination:

The Act prohibits discrimination against transgender persons in areas such as education, employment, healthcare, and the provision of goods and services.

#### Welfare measures:

The Act mandates the government to take measures for the welfare and development of transgender persons, including forming welfare schemes.

#### Welcome measures:

The Act mandates the government to take measures for the welfare and development of transgender persons, including forming welfare scheme.

#### Health care:

It ensures that transgender persons have access to healthcare facilities without discrimination.

#### National council for Transgender Persons:

The Act provides for the establishment of a National Council to address transgender issues and monitor implementation.

#### Criticism and concerns of the Act:

Despite the intent to protect the rights of transgender individuals, the Act faced several criticisms.

#### Non- recognition of self- identification:

One major concern was the requirement for transgender persons to undergo a screening process by a district screening committee to obtain a Certificate of Identity. Many activists argued that this provision violated the right to self-identification and dignity.

#### Lack of specific penalties:

The Act did not prescribe specific penalties for offenses committed against transgender persons. Critics argued that without strict penalties, the act's provisions against discrimination and violence may not be adequately enforceable.

#### Inadequate Healthcare provisions:

While the Act promised healthcare access without discrimination, there were concerns about the lack of specific provisions to address the healthcare needs and challenges specific to the transgender community.

#### No reservation of affirmative action:

The Act did not include provisions for reservation or affirmative action to enhance the representation of transgender persons in education, employment, and public life.

#### Concerns with the national council:

There were apprehensions that the National Council might not be adequately representative of the transgender community's diversity and might not have enough decision-making power.

#### Personal rights of the transgender person:

Section 18 of the transgender person (protection of rights) Act:

This law protects all transgender persons against any form of abuse such as physical, verbal, emotional, sexual, mental and economic abuse by imposing the punishment of imprisonment for a term which shall not be less than six

months but which may extend to two years and with fine. Unfortunately, it does not prescribe any separate mechanism to lodge a complaint against any of the abovementioned kinds of abuse.

Domestic violence Act, 2005: The Domestic Violence Act protects all women including Transgender Women (regardless of their Certificate of Identity) against any kind of abuse by any Abandoned, aged above 18 years and below 60 years.

Other laws protect the rights of a transgender person in India:

SC/ST (Prevention of Atrocities) Act, 1989: If an individual belongs to the Scheduled Caste or Scheduled Tribe community, this law protects that person from any sort of caste/tribe-based discrimination.

Discrimination of section 377 of IPC: LGBTQ+ people in India are entitled to all constitutional rights, including the liberties protected by the Constitution of India.

Indian penal code 1860: Any offense committed by a Transgender Person shall be punished as per the provisions of the Indian Penal Code. The NALSA Judgment stated that a denial of the right to self-identify one's gender would deny the right to life and liberty. It is especially significant since it is one of the first cases that affirmed the right to self-determination based on the "psyche" of the individual even in the context of the criminal law.

Code of Criminal Procedure, 1973:

A transgender person is subject to the same criminal procedural law of arrests, bail, summons, investigation.

Authorities under transgender law:

National Council for Transgender Persons (NCT): In pursuance of the Transgender Persons (Protection of Rights) Act, 2019, the National Council for Transgender Persons has been constituted to advise the Central Government on the formulation of policies, programmes, legislation and projects with respect to transgender persons.

Garima Greh:

The scheme aims to provide shelter to Transgender persons, with basic amenities like shelter, food, medical care and recreational facilities and it will provide support for the capacity-building/skill development of persons in the Community, which will enable them to lead a life of dignity and respect.

Marriage and Divorce:

A transgender person can get married in India either under personal religious laws (for instance the Hindu Marriage Act or Indian Christian Marriage Act) or under the Special Marriage Act, 1954. It was observed by the Madras High Court that a marriage solemnized between a male and a transgender woman, both professing Hindu religion, was considered to be a valid marriage in the eyes of the Law.

The major challenges faced by the transgender community in India are:

1. Discrimination in the educational setup and workplace:

The majorities of the people in this community are either illiterates or have less education, because of which they are not able to get involved much in the educated section of the society. According to a census which was conducted in 2011 the population of transgender people was 4.9 lakhs and in which only 46% of people were literate which is extremely less compared to the normal population which has a literacy rate of 74%. According to the right to education act, they are categorized as a 'disadvantaged group' which means they have 25% reservation as an economically weaker section. The reasons why they are less educated can be listed as poverty, exclusion from their own family and friends, mental health issues. Since they are not given education opportunities, these further results in not finding employment and even for those who pursue their education full of struggles they are not given the same respect and value in the workplace.

2. Social exclusion and homelessness

Since the transgender communities lack education and employment opportunities they are looked upon as a lower class by society resulting in exclusion. They are thrown out of their own homes and not accepted by their own families or they escape from their houses, because of which they don't have a shelter or a place they can call home.

3. Dealing with Trans phobia and Psychological stress

Compared to the people who identify themselves as heterosexuals, the transgender community faces a lot of harassment, discrimination, and intolerance from society. Due to the moral, religious, and societal beliefs few individuals turn out to be Trans phobic which results in attacks, negativity, workplace harassment, etc. Because of all the above-mentioned reasons the community faces a lot of mental health-related issues and that might actually lead them to take negative decisions such as self-harming, suicidal thoughts, etc. They go through loneliness, anxiety, and insecurities because of society.

4. Lack of legal protection and victims to hate crimes:

The Transgender community is not legally protected as much as any other community and because of this, they are easily victimized for the crimes that they didn't even commit. They undergo a lot of violence and become victims of hate crimes. A lot of police departments are insensitive when it comes to these communities and do not even register the complaints they come with. They are oppressed by the police officers.

5. Lack of public amenities:

They face issues with the accessibility of public toilets and public spaces. They often face problems in prisons, hospitals and schools.

6. Identity crisis:

They are often forced to identify with a gender with which they are not associated at the workplace despite the government passing the Transgender Persons (Protection of

Rights) Act, 2019 which allows the community the right to self-perceived gender identity.

### 3. CONCLUSIONS

Throughout this research paper, researcher has explored the critical importance of upholding human rights for transgender individuals, acknowledging their inherent dignity and worth as human beings. The realization of transgender persons' rights transcends a mere human rights issue; it is a fundamental aspect of societal progress and development. By embracing diversity and inclusivity, fostering social harmony, and providing equal opportunities for all, we can create a world where transgender individuals are free to live authentically, contributing their talents and perspectives to the betterment of society as a whole. It is the collective responsibility of governments, civil society, and individuals to major the cause of transgender rights and work towards building a more just and equitable world for everyone. Only through a concerted effort can we truly achieve development that leaves no one behind. The transgender persons' rights are not just an imperative for promoting equality and justice; it is also a pivotal path to sustainable development and social progress. Throughout this research paper, we have explored various aspects of human rights violations faced by transgender individuals and the significant impact these violations have on their lives, wellbeing, and potential contributions to society because still the vast difference between the protection and implementation of human rights of transgender people. The following actions can help improve access and rights for the transgender rights as a stepping stone towards a pivotal path to development:

#### Legal Reforms:

Review and amend existing laws, including the Transgender Persons' (Protection of Rights) Act, 2019, to ensure they protect the rights and self-identified gender of transgender persons without any discrimination. Implementing specific penalties for offenses against transgender individuals can act as a deterrent and improve enforcement.

#### Education and awareness:

Conduct comprehensive awareness campaigns and sensitization programs in schools, colleges, workplaces, and communities to foster understanding and acceptance of transgender people. This can help challenge stereotypes and reduce discrimination.

#### Healthcare Inclusivity:

Develop healthcare guidelines that address the unique healthcare needs of transgender individuals and ensure medical facilities are inclusive and free from discrimination.

#### Employment opportunities:

Introduce affirmative action policies and reservations to enhance the representation of transgender individuals in various sectors, promoting their economic empowerment and reducing employment discrimination.

#### Social welfare schemes:

Design and implement social welfare programs to uplift the socio-economic status of transgender persons and provide them with equal access to education, housing, and other basic amenities.

Media representation: Encourage responsible media representation of transgender individuals to challenge stereotypes and foster positive public attitudes.

#### Community involvement:

Involve transgender community leaders and activists in decision-making processes, including the functioning of the National Council for Transgender Persons, to ensure the community's voices are heard.

#### Police sensitization:

Conduct sensitization workshops for law enforcement agencies to address biases and improve the treatment of transgender individuals, ensuring their safety and protection.

#### Transgender helplines and support services:

Establish helplines and support centers to provide assistance, counseling, and legal aid to transgender individuals facing discrimination or violence.

#### Academic research and data collection:

Encourage research on transgender issues to understand the challenges they face better and use data-driven insights to develop effective policies and interventions.

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# The Revolutionary Movements of Gujarat From 1857 to 1947

Dr. Hiren D. Kakadiya<sup>1</sup>, Mr. Ravisinh S. Vala<sup>2</sup>

<sup>1</sup> Assistant Professor/Gujarat Education Service Class-2 (History) &  
Gov. Arts and Commerce College, Songadh, Tapi.

<sup>2</sup> Ph.D. Researcher at Shree Govind Guru University, Godhra. &  
Assistant Professor of History, Bhagwan Mahavir College of Liberal Arts & Humanities, Surat.

**Abstract:** *The Indian independence movement was a complex and multifaceted phenomenon that involved various individuals, groups, and ideologies. The Revolt of 1857 marked a pivotal moment in India's history, being the first widespread rebellion against British rule after the fall of the Mughal Empire.*

*This study highlights the significance of preserving the accounts of those who participated in this revolt, particularly in Gujarat, to inspire future generations. Gujarat played a significant role, with leaders such as Garbaddas Mukhi, Jodha Manek, and Mulu Manek mobilizing resistance in key areas like Nandod, Dahod, and Chota Udepur. Despite lacking centralized leadership and support from local princely states, the revolt set a precedent for future movements. In the early 20th century, Gujarat also contributed to revolutionary activities, with figures like Sri Aurobindo and his brother Barindra Ghosh inspiring nationalist fervor. Other revolutionaries, such as Chhotubhai and Ambubhai Purani, and Mohanlal Pandya, furthered the cause, promoting both violent and non-violent methods of resistance. Gujarati revolutionaries abroad, such as Shyamji Krishna Verma, Sardarsinh Rana, Madam Bhikhaji Cama, and Chagan Keraj Verma, played critical roles in raising international awareness, organizing protests, and fostering the revolutionary spirit. Their efforts, particularly through the Ghadar Party and other organizations, underscored the global dimension of India's struggle for independence.*

**Key Words:** Freedom, Fighter, Ideology, Independence, Movement, Rebellion, Revolution, Swaraj.

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## 1. INTRODUCTION & PURPOSE OF THE STUDY

The title of this research article is "The Revolutionary movements of Gujarat From 1857 to 1947". Which focus on two major points. The first one is about emergence of revolutionary movements of Gujarat at the time of 1857 and the second one is about the major key figures and leaders of Gujarat in between the time period of 1857 to 1947.

The purpose of this research article is to expose the revolutionary activities in Gujarat area to the public and the time period is in between 1857 to 1947 A.D.. But taking pity on the time fixed by me, the first question to be asked is, did Gujarat state exist then? So the answer is No. But can mere naming change the history and the heart of history? the answer will be also No. So here the entire article has been written keeping in mind the geographical area of Gujarat, which was named as a Brihad Mumbai. Hopefully you will try to understand this kind of think as a skilled historian who knows well the importance of event based on area and geography in historiography.

According to E.H. Carr "History is a continuous dialogue between the past, present and future". We cannot simply be influenced by one ideology and reject the truth of history of

another ideology. Similarly, we cannot reject the second ideology by being influenced by the first ideology. Because as much as there is a need for truth and non-violence, there is also a need for revolution and when these two cycles mutually create various events, only then does a certain result come. So I am writing this research article on this revolutionary ideology. I am sure this article will help in understanding the revolutionary events and personalities of Gujarat's past.

## 2. LITERATURE REVIEW

This literature review provides a comprehensive overview of the revolutionary movements in Gujarat from 1857 to 1947, highlighting the contributions of various freedom fighters and personalities who played a significant role in the struggle for independence. The review also underscores the importance of international support in the Indian freedom movement. Further research can build upon this foundation, exploring the nuances of the revolutionary movements in Gujarat and their impact on the country's history.

The Indian Rebellion of 1857, marked the beginning of the revolutionary movements in Gujarat. Key figures such as Tatyá Tope, Nanasaheb, Rangojibapu, Vaghers of

Okhamandal, Rupsinh Nayak, Gopal Antaji, Garbaddas Mukhi, and Maulvi Liyakat Ali were instrumental in the uprising against British colonial rule. These individuals, along with others, fought bravely against the British, employing various tactics, including armed resistance, sabotage, and propaganda. Arvind Ghosh, Barindra Ghosh, Chotubhai Purani, Ambubhai Purani, Narsinh Patel, Mohanlal Pandya, and Sardar Bhagat Singh were some of the prominent personalities who played a significant role in shaping Gujarat's political, social, and economic landscape. The revolutionary movements in Gujarat also received support from abroad. Individuals such as Shyamji Krishna Verma, Sardarsinh Rana, Madam Bhikhaji Kama, and Chagan Kheraj Varma, among others, contributed to the cause of Indian independence from outside the country. Their efforts helped to raise international awareness about the Indian struggle for freedom and garnered support from various quarters.

This literature review highlights the following key findings:

- i. The revolutionary movements in Gujarat were characterized by a mix of armed resistance, sabotage, and propaganda, with various freedom fighters employing different tactics to challenge British colonial rule.
- ii. The pre-independence era around 1857 saw the emergence of notable figures such as Taty Tope, Nanasahab, and Maulvi Liyakat Ali, who played a significant role in the Indian Rebellion of 1857.
- iii. The pre-independence era around 1900 to 1947, Gujarat produced prominent personalities such as Arvind Ghosh, Barindra Ghosh, and Sardar Bhagat Singh, who contributed to the country's development and growth.
- iv. International support from individuals such as Shyamji Krishna Verma and Madam Bhikhaji Kama was crucial in raising awareness about the Indian struggle for freedom and garnering support from abroad.

v.

### 3. METHODOLOGY

This article employs a qualitative research approach, relying on secondary sources to reconstruct the narrative of revolutionary movements in Gujarat from 1857 to 1947. The study draws upon a comprehensive review of existing literature, including scholarly articles, books, and historical accounts written by renowned historians. By analyzing and synthesizing the findings of previous researchers, this article aims to provide a nuanced understanding of the complex historical context and the key events that shaped the revolutionary movements in Gujarat during this period. The use of secondary sources allows for a broad and in-

depth examination of the topic, enabling the identification of patterns, themes, and trends that might have been overlooked in individual studies.

### 4. HISTORICAL BACKGROUND OF GUJARAT

Gujarat's historical background is a rich tapestry of ancient civilizations, medieval dynasties, and modern developments. From the Indus Valley Civilization to the present day, Gujarat has played a significant role in India's history, culture, and economy.

A state which is located in the western part of India, has a rich and diverse historical background that spans over 4,000 years. From ancient civilizations to modern times, Gujarat has been an important center of trade, culture, and politics. Here is a brief overview of the historical background of Gujarat from ancient to modern times:

#### i. ANCIENT PERIOD (3000 BCE - 500 CE)

The Indus Valley Civilization, one of the oldest civilizations in the world, flourished in Gujarat around 3000 BCE. The civilization was known for its sophisticated urban planning, architecture, and water management systems. The major sites like Lothal, Dholavira and Surkotda are located here. The Vedic period (1500 BCE - 500 BCE) saw the rise of the Vedic civilization in Gujarat, which was characterized by the composition of the Vedas, the oldest Hindu scriptures. The Mauryan Empire (322 BCE - 185 BCE) and the Gupta Empire (320 CE - 550 CE) also ruled over Gujarat, leaving behind a legacy of art, architecture, and literature. The Junagadh inscription of Emperor Ashoka is the largest example of the Mauryan era.

#### II. MEDIEVAL PERIOD (500 CE - 1500 CE)

The medieval period saw the rise of various dynasties in Gujarat, including the Solanki dynasty (942 CE - 1244 CE), the Vaghela dynasty (1244 CE - 1304 CE), and the Delhi Sultanate (1304 CE - 1407 CE). Gujarat was an important center of trade and commerce during this period, with the port city of Cambay (now Khambhat) being a major hub for maritime trade with the Middle East, Africa, and Europe.

#### III. MUGHAL AND MARATHA PERIOD (1500 CE - 1800 CE)

The Mughal Empire (1526 CE - 1756 CE) ruled over Gujarat, with the province being an important center of textile production, trade, and culture. The Maratha Empire (1674 CE - 1818 CE) also ruled over Gujarat, with the Peshwas, the prime ministers of the Maratha Empire, playing a significant role in the region's politics.

#### IV. BRITISH PERIOD (1800 CE - 1947 CE)

The British East India Company established its rule over Gujarat in the early 19th century, with the region becoming a major center of textile production and trade. The British colonial period saw the introduction of modern education, infrastructure, and administrative systems in Gujarat.

## V. POST-INDEPENDENCE PERIOD (1947 CE - PRESENT)

After India gained independence in 1947, Gujarat became a part of the Indian Union, with the state being formed in 1960. The post-independence period saw significant economic growth and development in Gujarat, with the state becoming a major hub for industry, trade, and commerce. The state has also been at the forefront of India's economic liberalization policies, with the establishment of special economic zones (SEZs) and the development of infrastructure projects such as the Sardar Sarovar Dam.

## 5. THE EMERGENCE OF THE REVOLT OF 1857

The Revolt of 1857 was a unique event in the history of India. For the first time after the fall of the Mughal Empire, a country-wide mass rebellion had taken place against British rule. It is important to preserve the details of the participants in the revolt and their struggle so that we can draw inspiration in the present era. To enlighten the present generation about the feelings that influenced the revolutionaries of the revolt of 1857 has been the main aim of this study. A.D. The revolt of 1857 was presented by the British to the world as just a small sepoy mutiny. But several nationalist figures like Veer Savarkar have pointed to this event as the first major event in India's struggle for independence. Which seems to be true to some extent.

In the long history of India, the freedom struggle for the country's self-rule, particularly the contribution of Gujarat, where the first voice of revolt was heard, is of great significance. That is why the martyrdom of Shri Mangal Pandey, who was the first to raise his voice against British rule, is also recorded. The fearless Gujaratis have always dared to raise their voices against injustice and oppression. In this connection, Mahatma Gandhi felt that if Indianness appeared different in a separate body, the soul would be Gujarati. Thus the rebellion of 1857 also affected Gujarat. The details of which are mentioned below.

## 6. LEADERS OF REVOLUTIONARY MOVEMENT FROM 1857 IN GUJARAT

Gujarat has always responded to the call of the nation. Ahmedabad, Godhra, Patan, Vadnagar, Kheralu, Kheda, Dwarka, Okha, Bijapur, Pandarwara etc. took an active part

in the struggle in Gujarat. Also in Gujarat During the revolt of 1857, important leaders like Garbaddas Mukhi, Jodha Manek and Mulu Manek and Magan Bhushan, besides the tribals of Pandarwada village in Sabarkantha, participated freely and in large numbers from other parts of Gujarat.

Centers and main leaders of the 1857 Revolt in Gujarat:

**NANDOD:** Syed Murad Ali gathered 300 to 400 people and started a revolt. Murad Ali, along with an army of Makranis, Sindhis and Arabs, mutinied with Rajpipla's sepoys shouting 'Challo Delhi' and Rajpipla's army as well as Kolis and Bhils joined it. But on August 17, 1857, when the British came to know, the force was suppressed under the leadership of Rogers. Finally Syed Murad Ali had to take refuge in the forest of Rajpipla.

**SANTARAMPUR:** Here, under the leadership of Jamadar Mustafa Khan, Bhils and Koli people were involved in protest.

**DAHOD:** On July 6, 1857, the rebellion broke out in Dahod. In addition Hamir Khan, a sepoy of Deogarh Baria incited the Bhils to revolt in the Baria forest. But this rebellion was suppressed by Captain Buckle.

**CHOTA UDEPUR:** Taty Tope entered Gujarat from Chota Udepur. They moved towards Panchmahal and Rajasthan as the British government tried to catch up.

**EDER:** A rebellion was led by Nathaji and Yamaji Gameti from Chanrup, a short distance from Eder. The Gaikwad government established a military base in Chanrup as a precautionary measure and the people were agitated and Nathaji attacked the base and drove the soldiers away. Hence the people of the village including Nathaji and Yamaji fled to the hilly terrains when Gaekwad, Raja of Idar and the combined army of the British climbed the mountain. Despite fighting for about six months against the forces of Major Whitelock, Major Andrews etc., Nathaji never fell into the hands of the British. Finally the struggle ended with the death of Nathaji.

**VIJAPUR:** Influenced by Chandup's rebellion, an unsuccessful attempt at Lodra by Koli and Thakor armies at Vijapur, Kheralu and Vadnagar took place. The then Mamlatdar of Bijapur, Hathisingh, was prosecuted for not reporting the mutiny.

**MUDETI:** In Mudeti of Eider, Thakor Soorjamal rebelled against Raja Jawansingh of Eider. The Raja of Idar defeated

Surajmal with the help of the British and suppressed the rebellion.

**VADODARA:** Bapusaheb Gaekwad, Bhausaheb Pawar and Raja Bhonsle conspired to revolt in Vadodara, with Nihalchand Zaveri of Vadodara and Maganlal Vania of Patan supporting them.

**MAHIKANTHA:** Jivabhai of Khanpur raised the flag of rebellion with the cooperation of Garbaddas, chief of Anand.

**LOONAWADA:** Soorjamal took the lead in Dakor of Kheda district. In which he was helped by Charan Kandas, the enemy of the British. Both of them climbed Loonawada together.

**OKHA:** The Tigers of Okha Mandal decided to take part in the rebellion and oust the British and Gaikwad from power. For this, a meeting was held in Dhrasanvel village of Devbhoomi Dwarka district under the leadership of Wagheros Jodha Manek, Mulu Manek, Bapu Manek, Bhoja Manek and Reva Manek to formulate the strategy of the struggle.

These were some of the important places where the revolt of 1857 was directly affected. But this first independence struggle of 1857 failed due to the lack of central leadership and the alliance of the local princely states with the British.

## 7. LEADERS OF REVOLUTIONARY MOVEMENT FROM 1900 – 1947 IN GUJARAT

During the first decade of the 20th century, a revolutionary movement sprang up in the country against British rule. Sri Aurobindo Ghosh, who at that time was a moving spirit of the stir, became the principal leader of the revolutionary activities in the region of Gujarat. His deep spirituality transformed the revolution in Gujarat into a constructive force. Whosoever came in contact with Sri Aurobindo Ghosh was attracted to him. His method and writings gave Gujarat a purpose. He inspired young students of Gujarat with a much-needed national consciousness. His talent to write vigorously and eloquently, with love for one's country, soon established the fact that he was a new leader in the town. With his teachings in his influential college, a new spirit was born. Such was the effect of Sri Aurobindo Ghosh in Gujarat during his brief spell.

### I. ARVIND GHOSH (AUROBINDO GHOSH)

Arvind Ghosh (later known as Sri Aurobindo) was a philosopher, yogi, poet, and Indian nationalist, deeply

involved in the early revolutionary activities against British colonial rule. Although his revolutionary activities are primarily associated with Bengal, his influence spread across India, including Gujarat. Born in 1872, Aurobindo initially studied in England and returned to India in 1893. His association with Gujarat began when he worked for the Maharaja of Baroda, Sayajirao Gaekwad III, from 1893 to 1906.

During his time in Baroda, Aurobindo played a pivotal role in forming secret revolutionary groups, gathering weapons, and spreading nationalist ideas. He emphasized self-reliance and total independence from British rule, laying the ideological foundation for future revolutionaries. His writings in "Bande Mataram," a nationalist publication, inspired youth across Gujarat and India to join the freedom struggle.

After the British crackdown on revolutionary activities following the Alipore Bomb Case in 1908, Aurobindo turned towards spiritual pursuits. However, his early efforts to foster revolution in Gujarat through secret societies, ideological training, and mobilization were significant in shaping the state's revolutionary fervor.

### II. BARINDRA GHOSH

Barindra Ghosh, the younger brother of Aurobindo, was a key figure in the revolutionary activities of the early 20th century. He was instrumental in setting up the Manicktolla Ashram, a center for revolutionary training and bomb-making. Like his brother, Barindra's activities were more centered in Bengal, but his influence extended to various parts of India, including Gujarat. Barindra's revolutionary zeal was contagious, and he worked with several underground groups. His leadership in the Alipore Bomb Case made him a symbol of revolutionary defiance. Though his direct involvement in Gujarat's revolutionary movement might not have been as pronounced, his ideas and the reverence he garnered greatly influenced young revolutionaries from Gujarat who were inspired by his bold actions.

### III. CHHOTUBHAI PURANI

Chhotubhai Purani was a prominent figure in the Indian independence movement, deeply involved in revolutionary activities. He played a vital role in Gujarat's political landscape, engaging with revolutionary organizations that sought to undermine British rule through direct action. Purani's association with the Indian freedom movement, and his dedication to the cause, made him a key figure in Gujarat's revolutionary narrative.

Purani was also an active participant in the broader nationalist movement led by Mahatma Gandhi, supporting civil disobedience and non-cooperation with British authorities. He is known for fostering unity and patriotism among the youth of Gujarat and inspiring them to adopt revolutionary methods to achieve independence.

#### IV. AMBUBHAI PURANI

Ambubhai Purani, brother of Chhotubhai, was an ardent follower of Sri Aurobindo and played a crucial role in the revolutionary activities of Gujarat. He was actively involved in spreading Aurobindo's message of complete independence and spiritual nationalism. Ambubhai was known for organizing secret meetings and forming underground networks that aimed at disrupting British governance in India. He is remembered for his efforts in fostering revolutionary sentiment among the youth of Gujarat and promoting the need for armed struggle against colonial rule. His dedication to the cause of India's freedom remained unwavering even as he supported peaceful methods later in life.

#### V. MOHANLAL PANDYA

Mohanlal Pandya was a notable figure in Gujarat's revolutionary movement. A lawyer by profession, he dedicated his life to the freedom struggle. While he is best known for his involvement in the non-violent movements led by Mahatma Gandhi, Pandya also had connections with revolutionary groups that believed in using force to oust the British. Pandya's activities were not limited to Gujarat, as he worked closely with national leaders and other revolutionary figures across India. His contributions to the independence movement, particularly in organizing local protests, facilitating underground networks, and inspiring the youth, made him a significant figure in Gujarat's freedom struggle.

The revolutionary movement in Gujarat from 1900 to 1947 was marked by the contributions of several key figures who adopted both violent and non-violent means to achieve India's independence. The individuals mentioned in this article—Arvind Ghosh, Barindra Ghosh, Chhotubhai Purani, Ambubhai Purani, Narsinhbhai Patel, and Mohanlal Pandya—were instrumental in shaping the course of the struggle in Gujarat. Their efforts, often carried out in secrecy, inspired future generations and contributed to the eventual success of the Indian independence movement.

While the non-violent approach of leaders like Mahatma Gandhi often overshadows the revolutionary activities in historical narratives, the contributions of these revolutionaries demonstrate that Gujarat's struggle for

freedom was multifaceted, with many willing to make the ultimate sacrifice for India's independence.

### 8. ABROAD GUJARATI REVOLUTIONARIES AND THEIR ACTIVITIES

The Indian independence movement was a complex and multifaceted phenomenon that involved various individuals, groups, and ideologies. While many Indians fought for freedom within the country, a significant number of revolutionaries operated from abroad, using their foreign bases to mobilize support, raise funds, and plan armed rebellions. Gujaratis, in particular, played a disproportionate role in this aspect of the movement, with many notable figures emerging as leaders, organizers, and ideologues. This article focuses on four such individuals: Shyamji Krishna Verma, Sardarsinh Rana, Madam Bhikhaiji Cama, and Chagan Keraj Verma.

#### I. SHYAMJI KRISHNA VERMA (1857-1930)

Shyamji Krishna Varma, also known as Shyamji Krishna Nakhua, was one of the greatest revolutionaries that the Indian independence movement witnessed. A lawyer and a journalist professionally, Shyamji Krishna Varma was also an expert in the Sanskrit language. In fact, he had a deep knowledge about several other languages spoken in India. However, it is his revolutionary spirit that Shyamji Krishna Varma is best remembered for. He laid the foundation of the Indian Home Rule Society and the India House which worked towards inspiring youngsters in Britain to take up revolutionary activities against their own representatives in India. Having completed his graduation from the Balliol College under the University of Oxford in England, Shyamji Krishna Varma escaped to England when differences arose between him and the British rulers in India. Dayanand Saraswati and Herbert Spencer were his chief inspirations on the path to revolution.

Shyamji Krishna Varma was born on October 4, 1857 in the city of Mandvi, located in the Kutch province of Gujarat. He was born as Shyamji Krishna Nakhua, a surname that was used for his community during the old days. Shyamji Krishna's parents passed away when he was just 11 years old, leaving him in the care of his grandmother. Shyamji Krishna Varma was a student at a local school in the Bhuj district of Gujarat. He later shifted to Mumbai to complete his education after studying the elementary years in his home state. It was in Mumbai that Shyamji Krishna Varma developed a love for Sanskrit and other Indian languages. In the year 1875, Shyamji Krishna Varma married Bhanumati, a girl hailing from a rich business family of Gujarat and also the sister of one of his school friends.

The very next year, in 1876, Shyamji Krishna Varma was deeply moved by the reformist teachings of the guru of the Vedas, Swami Dayananda Saraswati and from the very same year adopted his principles and teachings to nurture his own nationalistic dreams for the country. The year 1877 saw Shyamji Krishna Varma give a public speech on Vedic philosophy and religion on the lines of his guru Swami Dayananda Saraswati. He came to be regarded as such a wonderful orator that the Pandits of Kashi bestowed upon him the title of Pandit in 1877. His deep knowledge of the Sanskrit language caught the attention of Monier Williams, a professor of the subject in Oxford University. Williams offered Shyamji Krishna Varma the post of his assistant in Oxford and this marked Shyamji Krishna's first trip abroad.

Shyamji Krishna Varma's most notable contribution was his role in the formation of the Indian National Congress's (INC) British Committee, which aimed to promote Indian interests in Britain and lobby for reforms. He worked closely with other prominent Indian nationalists, including Dadabhai Naoroji and Lala Lajpat Rai, to mobilize British public opinion in favor of Indian self-rule. Verma's efforts helped to raise awareness about Indian grievances and contributed to the eventual granting of limited self-government to India through the Government of India Act of 1919.

## II. SARDARSINH RANA (1870-1957)

Sardarsinh Rana was a lawyer, politician, and revolutionary who spent most of his life in France. Born in Limbdi, Gujarat, Rana was educated in India and later moved to France to study law. He became involved in Indian nationalist politics and was a key figure in the formation of the Paris Indian Society in 1905. Rana's activities included publishing revolutionary literature, organizing protests, and providing financial support to Indian revolutionaries.

Rana's most notable contribution was his role in the formation of the Indian National Committee, which aimed to promote Indian interests in Europe and coordinate revolutionary activities. He worked closely with other prominent Indian nationalists, including Shyamji Krishna Verma and Madam Bhikhaji Cama, to mobilize European public opinion in favor of Indian independence. Rana's efforts helped to raise awareness about Indian grievances and contributed to the eventual recognition of India as a sovereign nation by the international community.

## III. MADAM BHIKHAIJI CAMA (1861-1936)

Madam Bhikhaji Cama was a social worker, revolutionary, and feminist who spent most of her life in Europe and the United States. Born in Navsari, Gujarat. Cama was educated

in India and later moved to Europe to pursue social work. She became involved in Indian nationalist politics and was a key figure in the formation of the Paris Indian Society in 1905. Cama's activities included publishing revolutionary literature, organizing protests, and providing financial support to Indian revolutionaries.

Cama's most notable contribution was her role in designing the Indian national flag, which was first unfurled at the International Socialist Conference in Stuttgart, Germany, in 1907. She also worked closely with other prominent Indian nationalists, including Shyamji Krishna Verma and Sardarsinh Rana, to mobilize international support for Indian independence. Cama's efforts helped to raise awareness about Indian grievances and contributed to the eventual recognition of India as a sovereign nation by the international community.

## IV. CHAGAN KERAJ VERMA (1885-1955)

Chagan Keraj Verma was a revolutionary and politician who spent most of his life in the United States. Born in Porbandar, Gujarat, Verma was educated in India and later moved to the United States to pursue higher education. He became involved in Indian nationalist politics and was a key figure in the formation of the Ghadar Party in 1913. Verma's activities included publishing revolutionary literature, organizing protests, and providing financial support to Indian revolutionaries. Verma's most notable contribution was his role in the Ghadar Party's armed rebellion against British rule in India during World War I. He worked closely with other prominent Indian revolutionaries, including Lala Hardayal and Ram Chandra, to plan and execute the rebellion. Although the rebellion ultimately failed, it marked a significant turning point in the Indian independence movement, as it demonstrated the willingness of Indians to take up arms against British rule.

The lives and activities of Shyamji Krishna Verma, Sardarsinh Rana, Madam Bhikhaji Cama, and Chagan Keraj Verma demonstrate the significant contributions made by Gujarati revolutionaries living abroad to the Indian independence movement. Through their individual efforts and collaborations, they helped to raise awareness about Indian grievances, mobilize international support, and challenge British authority. Their legacy serves as a testament to the power of diasporic activism and the enduring spirit of Indian nationalism.

## 9. CONCLUSION

In conclusion, the article highlights the significance of the 1857 revolt and the impact it had on Gujarat, showcasing the fearless spirit of the Gujaratis who dared to raise their

voices against injustice and oppression. The emergence of leaders like Garbaddas Mukhi, Jodha Manek, and Mulu Manek during the 1857 revolt in Gujarat, along with their various centers of revolt, demonstrates the active participation of the region in the struggle for independence. Additionally, the article sheds light on the revolutionary movement in Gujarat from 1900 to 1947, featuring key figures like Arvind Ghosh, Barindra Ghosh, Chhotubhai Purani, Ambubhai Purani, Mohanlal Pandya, and their contributions to shaping the course of the freedom struggle in the state. Furthermore, the article discusses abroad Gujarati revolutionaries such as Shyamji Krishna Verma, Sardarsinh Rana, Madam Bhikhaji Cama, and Chagan Keraj Verma, emphasizing their roles in mobilizing support, raising funds, and planning armed rebellions from foreign bases. These revolutionaries' efforts, both within Gujarat and abroad, showcase the multifaceted approach taken by individuals to achieve India's independence, reflecting the enduring spirit of Indian nationalism and the sacrifices made for the country's freedom.

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# Creation and Assessment of a Herbal Toning Product Using Shankpushpi Flower

Prakruti Desai\*, Riddhi Bhojani, Anisa Bano, Mahima Parmar

Bhagwan Mahavir College of Pharmacy, Bhagwan Mahavir University, Vesu, Surat, India

**Abstract:** One of the main objectives of natural face toner formulation is to preserve skin and pore tonicity. This study advances our knowledge of the significance of pharmacologically active plant sources. To evaluate the potential antioxidant activity, a comparative investigation was conducted using methanol to extract the fresh flower of *Convolvulus prostrates*. An attempt was made to make a herbal face toner using glycerin (which has lubricating properties), *convolvulus prostrates* extract (which has anti-inflammatory capabilities), *aloe vera gel* (which has antifungal benefits), and *rose water* (which is astringent for skin). This project's main objective was to develop a herbal skin toner with astringent, relaxing, and soothing qualities for the face and skin that is safe and natural

**Key Words:** Toner, *Convolvulus Prostrates* Flowers, Anti-inflammatory, Anti-fungal, Lubricating properties, Astringent, Tonicity

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## 1) INTRODUCTION

### 1.1 Role of Herbal cosmetics

The term "Herbal Cosmetics" refers to products that are made with a variety of acceptable cosmetic ingredients as a base, and then one or more herbal substances are employed to provide specific cosmetic benefits. (1) Herbal cosmetics are preparations that contain phytochemicals from various botanical sources that affect skin function and supply nutrients essential for a healthy body and skin. For the creation of novel medicinal and cosmetic products, plants are heavily utilized. Products that contain raw or extracted plants are known as herbal cosmetics. In the modern world, ayurvedic cosmetics, also referred to as herbal cosmetics, include the same amazing ingredients. Many traditional remedies make use of organic matter, medicinal herbs, and minerals. Numerous formulations of herbal cosmetics are available, and they are frequently used. Different types of herbs, like tea, tablet, capsule, tincture, cream, syrup, and liquid, can be used for cooking, beauty products, and medicine. (2,3)

### 1.2 Role of Skin Toner

Toners aid in firming the skin and protect it from various airborne toxins and environmental pollutants. Cosmetic skin toner is formulated to clean the skin and

reduce the look of pores, typically applied on the face.(4) It additionally hydrates, shields, and rejuvenates the skin. When incorporated into your daily skincare regimen and applied consistently, it can greatly improve the look and firmness of your pores (aging skin). There are various methods to apply toners on the skin.

1. On a circular piece of cotton. This method is used most often.
2. Spraying directly onto the face.

A tonic gauze facial mask involves covering a piece of gauze with toner and placing it on the face for a short period.

### 1.3 Types of Toners

1. Skin fresheners or bracers: It is a mild kind of toner. a toner that contains glycerine (a humectant) and water. The skin's surface is moisturised by humectant. The most common example of it is rosewater. It works best for skin types that are typical, dehydrated, and sensitive. (5,6,7)

2. Skin tonics: Skin tonics are typically stronger and contain water, a humectant component, and a small amount of alcohol (up to 20%). Orange blossom water

is a fantastic illustration of a skin tonic. It is okay to use skin tonics on oily skin.

3. Acid toner: These are a powerful type of toner that frequently includes alpha hydroxy acid and/or beta hydroxy acid. The most often utilised alpha hydroxy acids for exfoliating the skin's surface are glycolic, lactic, and mandelic acids. The most often used beta hydroxy acid is salicylic acid, which is effective for exfoliating the skin's deeper layers.

4. Astringents: The strongest type of toner is an astringent, which contains a lot of alcohol (20–60%), water, antibacterial compounds, and a humectant. These can harm and irritate the skin since they employ a lot of alcohol, which can eliminate the skin's extra protective

#### 1.4 Anatomy of Skin

The skin is the largest organ of the body, making up to 16% of body weight, with a surface area of  $1.8m^2$ .<sup>(8)</sup> It performs many vital functions, including protection against external physical, chemical, and biologic assailants, as well as prevention of excess water loss from the body and a role in thermoregulation. There are three structural layers of skin: the epidermis, the dermis and subcutis. Hair, nails, sebaceous, sweat and apocrine glands are regarded as derivatives of skin. The main cell of the epidermis are the keratinocytes, which synthesize the protein keratin. The epidermis varies the thickness from 0.05 mm on the eyelids to  $0.8\pm 1.5$  mm on the soles of the feet and palms of the hand.<sup>(9)</sup> The dermis varies in thickness, ranging from 0.6 mm on the eyelids to 3 mm on the back, palms and soles. It is found below the epidermis and is composed of although, supportive cell matrix. Subcutis is made up of loose connective tissue and, fat which can be up to 3 cm thick on the abdomen. It protects the body from external trauma and insulates from cold.

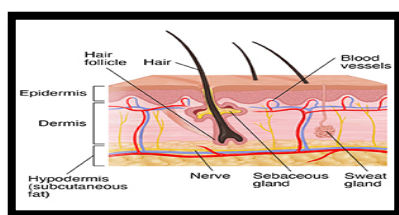


Figure -1: Anatomy of Skin

#### 1.5 Effects of a toner on skin

Previously, skin toner was commonly used as a second cleansing product to eliminate leftover makeup or excessive sebum from the skin before applying nourishing treatments. Toners can be classified as either alcohol-based or non-alcohol-based for different skin types including oily skin, sensitive skin, or combination skin.<sup>(10,11)</sup> In current times, the variety and abundance of products have led to skin toners being increasingly used as cosmeceutical products for a range of purposes such as skin rehydration, pH balancing, pore tightening, irritation relief, and antiseptic benefits. Several brands such as Nivea, Pilgrim, Mama earth, Plum, Himalaya, and Kiehl's offer a variety of Toners in the market.

#### 1.6 Benefits of using toner

- Eliminates oil and cosmetics.
- Calms your skin.
- Minimizes the visibility of pores.
- Aids in retaining moisture.
- Revives and firms the skin.
- Serves and defends.
- Maintains the appropriate pH levels.
- Brings back essential nutrients found in nature.<sup>(12,13,14)</sup>

## 2) INTRODUCTION OF CONVULVULUS PROSTRATES FLOWERS

- Synonyms: Convolvulus pluricaulis, Shankpushpi or Aparajit
- Botanical source: It consist whole plant of convolvulus pluricaulis linn. Belonging to family Convolvulaceae
- Morphological Characteristics
- Color (Flower): Blue
- Odour: Characteristics
- Taste: Bitter, Astringent
- Shape: Round or bell shaped<sup>(15,16)</sup>

### 2.1 Phytochemical Which are Present in Shankpushpi

**Table -1:** Phytochemical which are Present in Shankpushpi

Phytochemical	Shankpushpi ( <i>Convolvulus pluricaulis</i> )
Carbohydrates	D-glucose, maltose, rhamnose, malt sugar, starch and other carbohydrates.
Proteins and amino acids	$\alpha$ -amino [alpha-amino] carboxylic acid and Proteins.
Alkaloids	Only convolamine has been identified but other alkaloids convoline (C <sub>16</sub> H <sub>21</sub> N <sub>04</sub> ), convolidine, convolvine (C <sub>16</sub> H <sub>21</sub> N <sub>04</sub> ), Confoline (C <sub>17</sub> H <sub>21</sub> N <sub>05</sub> ), convosine, etc., were found in other species of this family. The plant contains alkaloid shankhapushpine (C <sub>17</sub> H <sub>25</sub> N <sub>02</sub> ), melting point from 163°C to 164°C.
Fatty acids/volatile oil/Fixed oil	Volatile oil, fatty acids, fatty alcohols; hydrocarbons, myristic acid (30.9%), palmitic acid (66.8%) and linoleic acid (2.3%) and straight chain hydrocarbon, hextriacontane.
Phenolics/Glycosides/Triterpenoid/ Steroids	Scopoletin, $\beta$ -sitosterol and ceryl alcohol. Chloroform fraction of this contains 20-oxodotriacontanol, tetratriacontanoic acid and 29-oxodotriacontanol, flavonoid-kampferol, steroids-phytosterols, $\beta$ -sitosterol. CP-1, a phytochemical marker has been isolated and characterised by HPTLC technique Estimation of scopoletin by HPTLC in Shankpushpi and its formulation Estimation of scopoletin by spectrofluorimetric.

## 2.2 Shankpushpi benefit for skin

Ayurveda recognizes Shankpushpi for its potential benefits for skin health. Regularly consuming Shankpushpi promotes a natural glow and radiance to the skin. The herb's rejuvenating properties are thought to contribute to maintaining skin elasticity and reducing the signs of aging.<sup>(17)</sup> Reduction of skin damage. Boosts collagen and elasticity in skin cells.

## 2.3 Other benefits of Shankpushpi

- It improves memory
- Shankpushpi is beneficial to epilepsy patients
- It has analgesic properties
- Helps make hair long and shiny
- Reduce high blood pressure
- It has Antimicrobial, Antifungal and Antibacterial activity
- It has Antioxidant, Cardiovascular and Antiulcer activity<sup>(18,19)</sup>

## 3) MATERIAL AND METHOD

Plant Source: The blue flowers of *Convolvulus Prostrates* Flowers were collected from Botanical Garden (Sneh Rashmi Botanical Garden).

### 3.1 Materials

**Table -2: Components Use for Preparation of Toner**

Components	Functions	Source
Convolvulus prostrates Flowers	Anti-Oxidant	Botanical Garden
Aloe Vera	Hydrates the skin	Botanical Garden
Glycerin	Tightens the pores	SCORTIS Vegetable Glycerin
Rose Water	Astringent	Dabur Gulabari

### 3.2 Method of preparation

**Extraction of an active constituent from crude drug (*Convolvulus prostrates*) by Decoction method.**

By grinding the fresh sample finely with a mortar and pestle, a methanolic extract was obtained using 80% methanol. The filtered extracts were used.<sup>(21,22)</sup>

**Preparation of final spray:** The extracts derived from the crude drugs (convolvulus prostrates) were combined with aloe vera and glycerine, then stirred properly to create a consistent mixture. (23) Next, the rose water was mixed into the mixture as a way to add a pleasant scent. After the uniform blend is created, the formulation is now filled into the spray bottle and the stability is monitored for Three Month Period of Time. (24,25)

### 3.3 Formulation of Herbal Toner

**Table-3: Formula**

Sr. No.	Ingredient	Quantity (50ml)
1.	Convolvulus Prostrates Flowers Extract	10ml
2.	Aloe Vera	05gm
3.	Glycerin	01ml
4.	Rose Water	34ml

## 4) RESULTS

**Table-4: Evaluation Test**

<b>Colour</b>	Pacific blue
<b>Odour</b>	Characteristic odour
<b>Appearances</b>	Smooth and hydrated
<b>Homogeneity</b>	Homogeneous
<b>pH</b>	4.46
<b>Surface tension</b>	62 dyne/cm
<b>Viscosity</b>	0.79 cp
<b>Skin irritation</b>	Non-irritant
<b>Skin conditioning</b>	Smooth
<b>Temperature variations</b>	At room temperature product was stable
<b>Spread ability</b>	Easily spreadable
<b>Removal</b>	Easily removable

### 4.1 Storage condition

Store At Room Temperature

### 4.2 Direction to use

1. Spray some toner on your clean face or hands.
2. Allow the spray some time to remain as it is on the face or surface of hands.
3. Keep it for 10-20 min. Wipe out the spray with soft cotton or cloth if required.

4. Use the toner twice a day for better skin rejuvenating results

## 5) CONCLUSION

It is possible to manufacture a stable spray toner with Convolvulus prostrates, according to research and result findings. The formulation of the spray toner yielded very good results. It is very useful for preserving the skin's health and beauty. The goal of the toner was to give the skin an antioxidant and moisturizing effect After application, there was a cleansing effect but no irritation or rashes. It was discovered that the developed formulation was physiochemically stable. The spray formulation proved to be more effective than any other form, including gel or lotion, because it was able to better penetration to Skin. According to the formulation studies mentioned above, the herbal toner that was made has a smoothing, astringent, and renewing impact on the skin. It is non-irritating and suitable for everyday usage to bring out the inherent beauty of human skin. As a result, the herbal toner can be applied topically to restore and revitalize the dry, pale skin.

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Shah DP, Jani GK, Modification and Characterization of Gellan Gum, *Pharmaceutical Technology*, 2009; 33(7): 48-58.

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Eisen HN. *Immunology: an introduction to molecular and cellular principles of the immune response*. 5th Edition. New York: Harper and Row; 1974.

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Kelly HW and Sorknes CA. Asthma, Dipiro JT, Talbert RL, Yee GC, Matzke TR, Wells BG, Posey LM, Pharmacotherapy- A Pathophysiological Aproch, Sixth Edition, The McGraw-Hill; 2005.504

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Larsen CE, Trip R, Johnson CR, inventors; Novoste Corporation, assignee. Methods for procedures related to the electrophysiology of the heart. US patent 5529 067. 1995.

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Vol 2 Issue 2 (Jul - Dec 2024)

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Editor-in-Chief: Dr. Zarna Dedania

+91 9427239022

editor.samhita@bmusurat.ac.in

Bhagwan Mahavir University,

BMU Campus, VIP Road,

VESU, Surat -395007, Gujarat, India