

# Formulating Design Guidelines for Drug De-addiction Center in India

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**Abstract:** This research paper aims to address the critical need for tailored design guidelines for drug de-addiction centers in India, considering the complex socio-cultural and infrastructural landscape. By integrating insights from architecture, healthcare, psychology, and sociology, the study develops comprehensive recommendations to optimize the physical environment of these centers. Key considerations include cultural sensitivity, safety, privacy, accessibility, and community integration. Through this research, actionable insights are provided for architects, healthcare professionals, policymakers, and stakeholders involved in planning, designing, and operating drug de-addiction centers. Implementation of these guidelines has the potential to significantly enhance therapeutic outcomes, promote patient well-being, and facilitate effective rehabilitation, thereby contributing to healthier and more resilient communities across India.

**Keywords:** Drug addiction treatment, Rehabilitation center design, Accessibility, Functional efficiency, Architecture and healthcare, Evidence-based design.

## 1. Introduction

### A. Background Context

Drug addiction is a complex and pervasive issue that affects individuals, families, and communities across the globe. In India, like in many other countries, drug abuse poses significant challenges to public health, social cohesion, and economic development. Recognizing the urgent need for comprehensive interventions, drug de-addiction centers play a crucial role in addressing the multifaceted aspects of addiction, providing support, treatment, and rehabilitation to those struggling with substance abuse. However, the effectiveness of drug de-addiction centers is not solely reliant on therapeutic approaches and medical interventions. The physical environment and design of these centers play a pivotal role in shaping the overall treatment experience and outcomes for patients. Yet, there is a notable gap in research and guidelines specifically tailored to the Indian context, where cultural, socio-economic, and infrastructural factors significantly influence the delivery of addiction treatment services.

An estimated 39.5 million people worldwide were suffering from drug use disorders in 2021, but only 1 in 5 people with drug use disorders received drug treatment. One in every 17 people worldwide had used a drug in 2021, 23 per cent more than a decade earlier. Worldwide drugs like alcohol, cannabis,

inhalant, opioids are being consumed in very high amounts. This is causing people's life in danger. Speaking of India's context, according to the magnitude of substance abuse in 2019 about 14.6 % people which is about 16 crore consumes alcohol. nationally, it is estimated that there are about 8.5 lakh people who inject drugs. Inhalants is the only drug category in which prevalence is higher among children and adolescents as compared to adult population. At the national level, an estimated 4.58 lakh children and 18 lakh adults need help for their problematic inhalant use. There are many people who need help to get out from this life endangering problem and it is also important to create awareness about the negative impacts of substance use on person's life so that people stay away from them. There are many centers, clinics, and hospitals in India that provide drug de addiction treatment. Even though the infrastructure is still in the developing phase. Substance use disorder requires special treatment which should be delivered by trained professionals. The substance use treatment is provided by three sectors in India as NGOs, private sectors which includes doctors, psychiatrists and the third one is government of India.

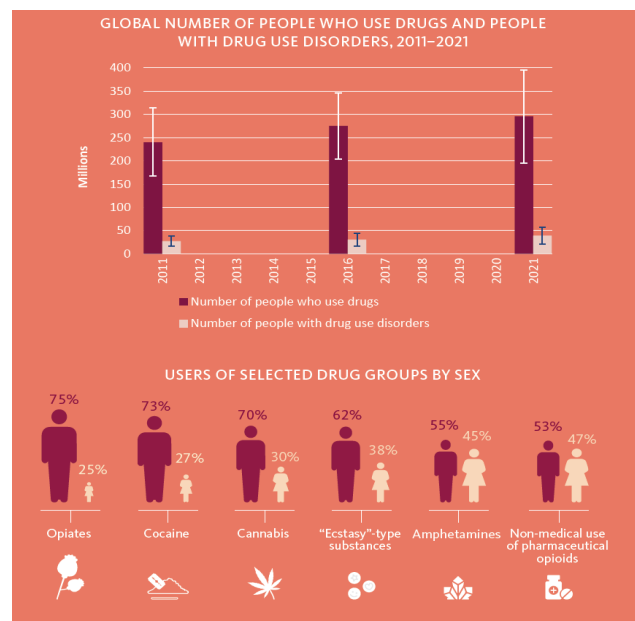


Fig. 1. Global number of people using drugs, 2011-21

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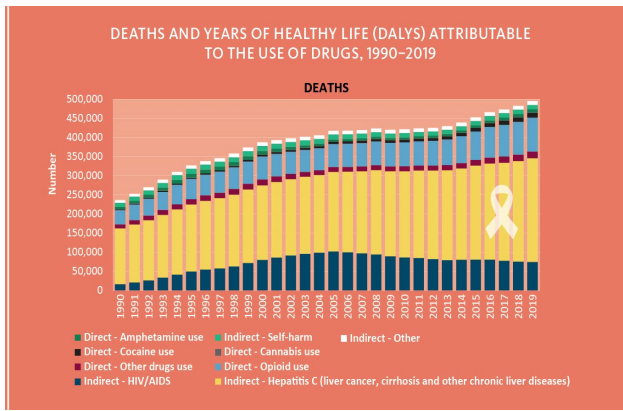


Fig. 2. Deaths and years of healthy life

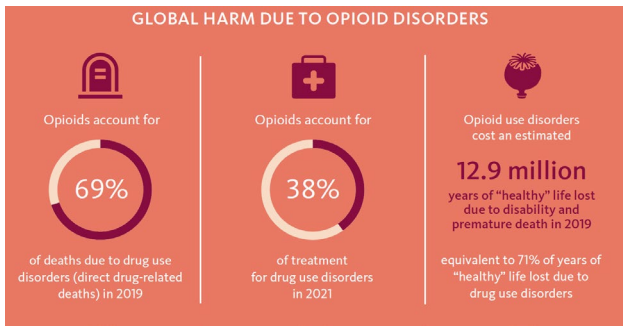


Fig. 3. Global harm due to opioid use

In 2018, Mumbai accounted for 82% of Maharashtra's drug cases, primarily involving cannabis consumption. Personal cannabis consumption constituted 87% of all arrests and convictions in Mumbai's drug cases. Over 97% of drug-related cases in Mumbai courts from 2017 to 2018 involved possession for personal use, with only a small fraction related to trafficking. Maharashtra has the highest number of drug-related suicides in India, with 1,372 deaths in 2014, accounting for 37.6% of the country's total drug-related suicides. The high prevalence of drugs in metropolitan areas increases the risk of accidental deaths due to substance abuse.

### B. Importance of Designing Drug Deaddiction Centers for Effective Rehabilitation

Drug de-addiction centers are crucial for effective rehabilitation because they provide specialized care and support tailored to individuals struggling with substance abuse. These centers offer a structured environment where patients can receive comprehensive treatment, including medical detoxification, therapy, and counseling. By providing a safe and supportive space, drug de-addiction centers help individuals overcome addiction, regain control of their lives, and work towards long-term recovery.

### C. Purpose of the Research Paper and its Significance

This research endeavors to address this gap by formulating comprehensive design guidelines specifically tailored to drug de-addiction centers in the Indian context. By integrating insights from architecture, healthcare, psychology, and sociology, this study aims to develop recommendations that optimize the physical environment of these centers to enhance

therapeutic outcomes, promote patient well-being, and facilitate effective rehabilitation.

Key considerations in formulating these design guidelines include cultural sensitivity, functional efficiency, safety and security, privacy and dignity, accessibility, integration of nature, flexibility and adaptability, and community integration. By examining these aspects within the unique socio-cultural and economic landscape of India, this research seeks to provide actionable insights for architects, healthcare professionals, policymakers, and stakeholders involved in the planning, design, and operation of drug de-addiction centers. Ultimately, the successful implementation of these design guidelines has the potential to significantly improve the quality and effectiveness of addiction treatment services, contribute to the reduction of drug-related harm, and foster healthier and more resilient communities across India

## 2. Literature Review

### A. Overview of Drug Addiction and its Impact on Individuals and Society

Drug addiction is a complex disorder characterized by compulsive drug seeking, continued use despite harmful consequences, and long-lasting changes in the brain. It affects individuals physically, psychologically, and socially, as well as having broader implications for society. Physically, drug addiction can lead to tolerance, dependence, and withdrawal symptoms when the drug use is stopped. Chronic drug use can also result in various health problems, including cardiovascular issues, respiratory complications, liver and kidney damage, and increased risk of infectious diseases such as HIV/AIDS and hepatitis.

Psychologically, addiction can cause changes in mood, behaviour, and cognition. Individuals may experience intense cravings for the drug, difficulty controlling their use, and may prioritize drug-seeking behaviours over other responsibilities or activities. This can lead to problems in relationships, employment, and overall functioning.

Socially, drug addiction can have far-reaching consequences. It can strain relationships with family and friends, contribute to financial problems, legal issues, and homelessness. Additionally, drug addiction can impact communities by increasing crime rates, straining healthcare and social service systems, and perpetuating cycles of poverty and substance abuse.

### B. Review of Relevant Design Guidelines and Principles for Healthcare Facilities, Particularly Addiction Treatment Centers

According to the 'minimum standards of care' published by AIIMS, New Delhi for the government deaddiction centers it provides the infrastructure, staff, services standards.

The document discusses the challenges and initiatives in establishing and maintaining minimum standards of care for government de-addiction centers in India. While efforts have been made to develop standards, evaluations have revealed variability in service provision, record maintenance, staff shortages, and capacity issues. The lack of regular evaluation

systems highlights the need for minimum standards to ensure quality care across centers. The monograph proposes minimum standards for services, infrastructure, staff, training, and monitoring, emphasizing the importance of adherence to these standards for substance use treatment services. It acknowledges the document's role in highlighting key components of treatment services but emphasizes the need for ongoing scrutiny, discussions, and revisions to continuously improve standards and ensure quality care delivery in de-addiction centers.

### 3. Case Studies and Analysis

#### A. Sister Margret Smith Addictions Treatment Centre

- *Location:* Thunder Bay, Ontario, Canada
- *Site Area:* 3.5 Acres
- *Built up Area:* 1.19 Acres
- *No. of beds:* 40



Fig. 4. View of Sister Margret Smith Addictions Treatment Centre

##### Positives:

- *Gender-Specific Accommodations:* Provided separate accommodations for males, females, and youth ensures a safe and comfortable environment.
- *Privacy Consideration:* Separate entrances for residential and non-residential.
- *Community Atmosphere:* The design resembling a large communal house creates a warm and supportive atmosphere.

##### Negatives:

- *Potential Noise and Distractions:* The open layout and communal living areas may lead to increased noise levels and distractions.
- *Limited Flexibility in Program Delivery:* The fixed layout and design of the facility may limit flexibility in adapting programs or services to meet evolving client needs or treatment approaches.

#### B. Alpha Healing Centre

- *Location:* Vadodara, Gujarat, India
- *Site Area:* 12 Acres
- *Built up Area:* 2.3 Acres
- *No. of beds:* 100



Fig. 5. View of Alpha Healing Centre

##### Positives:

- *Integration with Nature:* The strong emphasis on connecting patients with the natural environment promotes healing and well-being.
- *Visual Appeal:* The presence of water bodies and fragrant flowers adds to the aesthetic appeal of the surroundings.

##### Negatives:

- *Maintenance Challenges:* The presence of water bodies and organic farms may require ongoing maintenance to ensure their upkeep and prevent deterioration over time.
- *Space Limitations:* The petals layout may limit flexibility for future expansion or reconfiguration of the facility.
- *Accessibility:* The layout and design features may not be fully accessible to individuals with mobility impairments or disabilities.

#### C. Jeevan Utkarsh Drug Deaddiction Centre

- *Location:* Nagpur, Maharashtra, India
- *Site Area:* 1.45 Acres
- *Built up Area:* 0.17 Acres
- *No. of beds:* 78



Fig. 6. View of Jeevan Utkarsh Drug Deaddiction Centre

##### Positives:

- *Outdoor Engagement:* The provision of outdoor activity space promotes physical activity, relaxation, and connection with nature, contributing to overall well-being.
- *Clear Administrative Separation:* Housing the administrative zone in a separate building section



ensures efficient operation and minimizes disruption to residential areas.

- *Natural Light Integration:* Prioritizing natural light in living areas enhances the indoor environment, positively impacting mood and mental health.

*Negatives:*

- *Outdoor Space Utilization:* While outdoor activity space is provided, its design and amenities may not fully meet residents' recreational and therapeutic needs.
- *Dependency on Natural Light:* Over-reliance on natural light for indoor illumination may result in insufficient lighting levels during overcast days or evenings.

**D. Grace Deaddiction Centre**

- *Location:* Nagpur, Maharashtra, India
- *Site Area:* 0.64 Acres
- *Built up Area:* 0.09 Acres
- *No. of beds:* 24



Fig. 7. View of Grace Deaddiction Centre

*Positives:*

- *Functional Layout:* The centre's layout appears to be well-organized and functional, with separate areas designated for accommodation, kitchen facilities, and multipurpose activities.
- *Architectural Features:* Features such as balconies, windows, and communal hangout spaces promote natural light, ventilation, and social interaction.

*Negatives:*

- *Limited Privacy:* The absence of private rooms and the communal living arrangement may compromise patient privacy and confidentiality.
- *Social Dynamics:* While communal spaces can promote social interaction and peer support, they may also contribute to social dynamics and conflicts among patients.

**4. Stakeholder Challenges & Site Constraints – A Brief Overview**

*A. Identification of Key Stakeholders and Challenges Faced by Them*

*1) Patients and Families*

Faces stigma, financial strain, and lack of support networks.

*2) Healthcare Providers*

Encounter challenges such as limited resources, stigma, and high patient loads.

*3) Government Agencies*

Face challenges in allocating resources effectively, navigating bureaucratic hurdles, and addressing regulatory constraints.

*4) Non-Governmental Organizations (NGOs)*

Often struggle with funding limitations, bureaucratic obstacles, and scalability issues.

*B. Analysis of Site-Specific Factors and Constraints Influencing the Design Process*

*1) Location and Surroundings*

The location of the site, including its proximity to urban centers, transportation networks, and community resources, can influence accessibility and patient outreach. Additionally, the surrounding environment, such as noise levels, air quality, and natural elements, should be considered to create a conducive healing atmosphere.

*2) Site Topography*

The topography of the site, including its slope, elevation, and geological characteristics, can impact site development, drainage, and construction costs. Sloped sites may require additional earthwork and retaining structures, while flood-prone areas may necessitate flood mitigation measures.

*3) Land Use Zoning*

Compliance with local land use zoning regulations and building codes is essential to ensure legal and regulatory compliance. Understanding zoning requirements related to healthcare facilities, setback distances, parking provisions, and building heights is critical in the design process.

*4) Site Accessibility*

Accessibility for patients, staff, and visitors, including individuals with disabilities, should be prioritized in the design. Adequate parking facilities, pedestrian pathways, ramps, and elevators should be incorporated to ensure universal access and compliance with accessibility standards.

*5) Utilities and Infrastructure*

Availability of essential utilities, such as water supply, electricity, sewage systems, and telecommunications infrastructure, is essential for the functioning of the facility. Site analysis should assess the feasibility of connecting to existing utility networks and identify any infrastructure limitations or requirements.

*6) Environmental Considerations*

Environmental factors, such as solar orientation, prevailing winds, and microclimate conditions, can influence building design and energy efficiency strategies. Passive design techniques, renewable energy options, and sustainable landscaping practices should be integrated to minimize environmental impact and enhance occupant comfort.

*7) Site Size and Configuration*

The size and configuration of the site will determine the layout and spatial organization of the facility. Factors such as site coverage, setbacks, open space requirements, and building footprint should be optimized to maximize functional efficiency and aesthetic appeal.

### 8) *Site History and Context*

Understanding the historical context and cultural significance of the site can inform design decisions and preservation efforts. Sensitivity to local heritage, community values, and architectural character is essential in creating a facility that resonates with its surroundings.

## 5. Design Guidelines Development

### A. *Formulation of Comprehensive Design Guidelines Based on Findings*

#### 1) *Accessibility and Inclusivity*

Ensure universal access for patients, staff, and visitors, including individuals with disabilities, through ramps, elevators, and accessible amenities. Comply with local building codes and accessibility standards to guarantee equal access and prevent discrimination.

#### 2) *Privacy and Confidentiality*

Provide private consultation rooms for patient assessments, counseling sessions, and medical examinations to maintain confidentiality and respect patient privacy. Design communal living areas with partitions or dividers to offer individual privacy within shared spaces.

#### 3) *Safety and Security*

Incorporate security measures such as surveillance cameras, controlled access points, and emergency response systems to ensure the safety of patients and staff. Implement protocols for handling emergencies, including medical crises, aggressive behavior, and substance-related incidents.

#### 4) *Therapeutic Environment*

Integrate natural elements such as greenery, water features, and outdoor spaces to promote relaxation, stress reduction, and connection with nature. Utilize soothing color schemes, comfortable furnishings, and acoustical treatments to create a calming and supportive atmosphere conducive to healing.

#### 5) *Flexibility and Adaptability*

Design flexible spaces that can accommodate varying programmatic needs, including group therapy sessions, recreational activities, and educational workshops. Incorporate modular furniture, movable partitions, and multi-purpose areas to facilitate quick reconfiguration and adaptation to changing requirements.

#### 6) *Sustainable Practices*

Implement environmentally friendly design strategies such as energy-efficient lighting, passive cooling techniques, and renewable energy sources to minimize environmental impact and operating costs. Use eco-friendly materials, low-VOC finishes, and sustainable landscaping practices to promote occupant health and well-being.

#### 7) *Community Integration*

Foster partnerships with local organizations, community groups, and government agencies to enhance access to social services, vocational training, and employment opportunities for patients. Host outreach events, educational workshops, and support groups to engage with the community and reduce stigma surrounding addiction.

### B. *Consideration of Architectural, Functional, and Psychological Aspects in the Design of Drug De-Addiction Centers*

#### 1) *Architectural Aspects*

- *Layout and Spatial Design:* The layout should facilitate ease of movement and navigation for both clients and staff. Clear pathways and designated areas for different activities enhance efficiency and reduce confusion.
- *Aesthetic Design:* Aesthetics play a significant role in creating a welcoming and calming atmosphere. Use of natural light, soothing colors, and comfortable furnishings contribute to a sense of well-being and safety.
- *Accessibility:* Ensuring accessibility for individuals with disabilities is essential. Design elements such as ramps, elevators, and wide doorways promote inclusivity and equal access to services.
- *Safety Measures:* Incorporating safety features like emergency exits, security systems, and non-slip flooring minimizes risks and ensures the physical well-being of clients and staff.

#### 2) *Functional Aspects*

- *Program Integration:* The design should support the integration of various treatment programs and services. Flexible spaces that can accommodate group therapy sessions, individual counseling, recreational activities, and educational workshops promote comprehensive care.
- *Privacy and Confidentiality:* Creating spaces that prioritize privacy and confidentiality is crucial for building trust and facilitating open communication. Designing private consultation rooms and discrete waiting areas helps protect the dignity of clients.
- *Efficient Workflow:* Designing workflows that minimize bottlenecks and optimize staff efficiency is essential. Strategic placement of workstations, storage areas, and treatment rooms streamlines operations and enhances productivity.
- *Technological Integration:* Incorporating technology to support electronic health records, telemedicine services, and client monitoring systems improves the delivery of care and enhances communication among healthcare providers.

#### 3) *Psychological Aspects*

- *Therapeutic Environment:* The design should create a therapeutic environment that promotes healing and recovery. Access to nature, indoor green spaces, and outdoor gardens can have a calming effect and reduce stress levels.
- *Empowerment and Dignity:* Spaces should be designed to empower clients and preserve their dignity. Providing opportunities for self-expression, autonomy, and personalization of living areas fosters a sense of agency and self-worth.
- *Supportive Community:* Designing communal spaces

where clients can interact, share experiences, and offer support to one another promotes a sense of belonging and reduces feelings of isolation.

- *Positive Distractions*: Incorporating elements of art, music, and recreational activities can serve as positive distractions and coping mechanisms for clients. Creating engaging and stimulating environments helps alleviate boredom and negative emotions.

## 6. Conclusion

In conclusion, this research highlights the critical role of design in optimizing drug de-addiction centers for effective rehabilitation, particularly within the Indian context. By integrating insights from architecture, healthcare, psychology, and sociology, comprehensive design guidelines have been formulated to enhance therapeutic outcomes, promote patient well-being, and facilitate successful rehabilitation. These guidelines emphasize cultural sensitivity, functional efficiency, safety, privacy, accessibility, and community integration. Implementation of these guidelines has the potential to significantly improve addiction treatment services, contribute to reducing drug-related harm, and foster healthier and more resilient communities across India.

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