Diffusing Quandaries: Employing AI to Resolve Substance Abuse within the Indian Youth

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SHORT ARTICLES

Introduction

India is a nation that has withstood and outlasted the ravages of those who came and went. She remained dignified, standing tall with unwavering pride (Overview, n.d.). Unfortunately, in the 21st century, yet again our nation is fighting another war, one that is extensively targeting the youth of this nation. The issue at hand which India is grappling with is a severe narcotic drugs and psychotropic substances addiction. Over 3.1 crore individuals accounting for over 2.8% of the young nation's population are addicted to Cannabis and other psychotropic substances (NISD, n.d.-b). With over 90% of drug users being under the age of 25 (Bhanu et.al., 2023). Cities such as Mumbai and Hyderabad are emerging as narcotics hubs, while states like Punjab and Haryana report alarming rates of youth addiction (Bhanu et.al., 2023; NISD, n.d.), with 75% of young individuals dependent on drugs. The implications of substance abuse extend beyond addiction, contributing to violent crimes such as murders and sexual assaults. Narcotic crimes among Indian youth thus are a pressing concern, driven by socio-economic disparities, peer influences, and cultural norms. These crimes not only disrupt individual lives but also undermine societal cohesion.

At this juncture, Artificial Intelligence driven predictive policing models, combined with emerging technologies such as big-data analytics and automated facial recognition technology (AFRT), offers a promising path forward to identify trends, prevent crimes, and intervene effectively Predictive policing, leveraging AI and large data sets, and offers a proactive approach to crime prevention and elimination. The primary objective of this investigation is to explore how AI can contribute effectively to the nabbing of narcotic networks and rackets and to navigate a pragmatic method of reducing psychotropic substance consumption among the youth. This paper presents how predictive policing can address challenges such as narcotic consumption in youth and narcotic crimes (trafficking, substance abuse, violent and heinous crimes, etc.) while respecting privacy and ethical standards that AI as a solution might pose.

The Silver Bullet: Predictive Policing & AI

Predictive policing is a method where large data sets and analysed from different sources to anticipate criminal activity and advantageously and prudently prevent and respond to the said unlawful activity, respectively, before harm happens. Manual human techniques and forensic methods have been majorly the technology that has been used over the past three decades to enact predictive policing. This has been advanced globally time and again and the West has contributed extensively to the same. Yet the level of crime is increasing multifold internationally and in a globalised world criminal misconduct only leads to intranational human rights violations. Furthermore, it has been observed that traditional solutions are inevitably inefficient to resolve such levels of complexities in crimes, thus AI has be envisioned as a panacea for regular to even the most incomprehensibly complex crimes.

Today, predictive policing has taken its most advanced form via effective utilisation of AI. Considering that the level of swiftness in crime is increasing and institutional methods are failing, AI remains the only tool that has the capability to control and monito criminal and unlawful misconduct. Thus, the machine learning tool invented to mimic human intelligence has become a perfect demonstration of how AI is a panacea today (Forensic Magazine, 2024). Predictive policing technologies conducted solely by human intelligence has been capable in handlining crimes, yet crime is evolving faster than ever and AI ought to be used for facilitating combating crimes.

AI based Predictive Policing involves various components, yet primarily its software uses data and algorithms to calculate and evaluate all possible probabilities of a crime happening. This provides law enforcement enough time to understand the issue and situation at hand, map out the areas of strain that might lead to criminal activity and effectively deploy counter-measures to before the issue has even arisen and be on a tactical advantage. There is no dearth of jurisprudence and empirical studies of how predictive policing has actively reduced substance consumption, eliminated cartels supplying these substances and the rings involved in the same, yet how they blend into the Indian context shall be delved in the parts that follows.

Employing big-data analytics, another tool use to deal with huge volumes of data, has enhanced AI based Predictive Policing further. When historical criminal data, personal background information and other valuable social determinants available to the state are utlised without any bias, the method of surveillance deployed by AI driven predictive policing programs can be harnessed to monitor criminal activity to such an extent that would in general practice require a considerable amount of human effort, and would waste precious hours of trained individuals and drain state funds that could be used elsewhere, where the availability of the same would be much more consequential (Forensic Magazine, 2024).

The aforesaid is an intermediate and non-technical explanation of how the Predictive Policing functions, the purpose of which is to explain the theoretical yet pragmatic workings of AI driven Predictive Policing models and make clear the obvious lacunas in the current system. Yet, this does not absolve our proposed model of any issues it may pose such as an inexistent liability regime for AI driven systems. Moreover, there are privacy concerns in a meta-data, non-consensual, constant surveillance model (a precursor to AI driven predictive policing), yet the benefits it might reap are multi-fold and of way more importance today, if balanced correctly via effective regulatory structures, statutes and social cooperation. Via phenomenology and reviewal of primary data sources there has been a conceptualisation/ derivation which has led to an ontological and epistemological understanding, that shall be explained through the case study of various jurisdiction in the next section.

Comparative Study: Predictive Policing in USA & UK

To understand the art and science of predictive policing the evolution and application of the technology ought to be studied, thus for this research cases from the USA and UK have been thoroughly analysed to tailor the India context. USA has been the pioneer of Predictive Policing technology in the world, laying the foundation of predictive policing in the 1990's through Data-Driven Crime Mapping, and digital criminal forensics which was developed by NYPD (New York Police Department). It was used for general crimes initially but over time it became a valuable tool for enforcement agencies to track drug-related offenses geographically, identifying hotspots for narcotics activities (NYPD, 1997).

During the early 2000s, Memphis Police Department implemented the SARA (Scanning, Analysis, Response, Assessment) model which enhanced the static crime mapping technology with predictive algorithms allowing the enforcement agencies to analyse patterns in time and space, offering dynamic forecasts for drug-related activities. Using this technology the police was able to deploy targeted interventions, reducing drug-related violence in high-risk areas (Fridell et al., 2006). 2010-2015 saw remarkable improvement in predictive policing technology with the introduction of PredPol (Predictive Policing Software), which was developed by researchers at UCLA (University of California, Los Angeles) for the LAPD (Los Angeles police department). PredPol was widely implemented by the LAPD which experienced significant reductions in narcotics-related street crimes by focusing patrols on identified hotspots, disrupting local drug markets (LAPD, 2012).

PredPol was further upgraded to the LASER (Los Angeles Strategic Extraction and Restoration) program which combined GIS (Geographic Information Systems) with real-time data to identify individuals and areas at risk for drug-related activities. It also used LASER to identify individuals frequently involved in narcotics crimes, enabling preemptive interventions. Reports indicated a 20% reduction in drug-related arrests in targeted areas, pointing out the value of predictive policing for disrupting distribution networks (LAPD, 2014).

The Chicago Police Department further progressed the technology by implementing the SNA (Social Network Analysis) model in collaboration with the Illinois Institute of Technology. Using SNA, the department uncovered drug syndicates by targeting influential figures in these networks, the department dismantled several trafficking rings and reduced drug-related shootings by 12% (University of Chicago Crime Lab, 2017). Based on the success of SNA in Chicago, Richmond's predictive policing system also incorporated SNA to identify individuals at high risk of involvement in narcotics-related violence, either as perpetrators or victims. The Predictive technology enabled officers to intervene with at-risk individuals before violent drug disputes escalated. The city reported a 40% decrease in drug-related gun violence over two years (Richmond Police Department, 2020).

With advancements in technology AI-Powered Tools and Multi-Agency Collaboration were made in predictive policing giving birth to cutting edge tools like the NarcGuideBot, developed by Quadrant Technologies, the AI-powered assistant is designed to help law enforcement agencies to handle complex narcotics investigations with ease. The tool simplifies legal compliance, automates documentation, and uses machine learning to predict drug trafficking patterns.

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Deployed in states like California, the NarcGuideBot has expedited the investigation process, identified high-risk individuals and streamlined case management. Reports indicate significant improvements in prosecuting large-scale drug trafficking cases (Quadrant Technologies, 2021). Over time the technology has been designed for Multi-Agency Data Sharing in the US resulting in strong collaborations between federal, state, and local agencies, such as the DEA (Drug Enforcement Administration), FBI (Federal Bureau of Investigation), and local police departments, leveraging shared data to enhance predictive policing technology. In New York City, data from border control, public health services, and community reports were integrated into predictive tools to address opioid trafficking resulting in a 30% reduction in opioid overdoses by targeting distribution hubs and offering community-based interventions (DEA Report, 2022).

The success in the US inspired the UK to adopt predictive policing in 2013 with Kent Police Department being the first to implement predictive policing in 2013 to identify neighborhoods with recurring burglaries and violent crimes, and an increased strain that is often linked to drug-related activities. This initiative led to a 20% reduction in property crimes, thereby disrupting local drug networks that relied on stolen goods for funding (Kent Police Department, 2013). Post Kent, the Avon and Somerset Police utilized predictive algorithms to monitor repeat offenders involved in drug-related crimes, identify urban narcotics trade hotspots, and intercept drug shipments, resulting in more effective targeting of known traffickers and a diminished community impact from drug distribution (Home Office, 2018). West Midlands Police further developed these models to identify individuals likely involved in narcotics trafficking or consumption by analysing behavioural patterns and prior offenses, enabling interventions that prevent the escalation of drug-related offenses and offer rehabilitation to low-risk offenders (West Midlands Police, 2019).

These predictive policing tools have significantly evolved over the years, enabling law enforcement agencies in USA and UK to address narcotic crimes with greater precision, by leveraging data analytics, machine learning, and social network analysis, both the countries have achieved notable success in combating drug trafficking, reducing drug-related violence, and dismantling narcotic distribution networks.

Pragmatic Solutions: AI as a Heuristic

The aforementioned facts display that AI when utlised with Predictive Policing is not only a viable but an acutely needed and indispensable tool. Yet the eternal enigma of deploying AIs is that it does beings with itself a pandoras box, capable of causing more harm than good. Furthermore, utilising AI successfully to a boarder scholarship does not guarantee its success when used in a nuanced stream within the same area. The aforementioned success stories of AI enforced Predictive Policing is a very hopeful direction to what can happen in the future. In India even greater depths of meticulous research is required before implementing AI based solutions, as utilisation of AI otherwise can lead to violation of privacy rights as enshrined in the *ground norm* of our nation.

Readdressing the issue at hand, the aforementioned models in the comparative study have been utilized for narcotic and psychotropic substance reduction among large masses, yet there has been no empirical study exclusively conducted for the utilisation AI and predictive policing for reducing substance addiction among the youth.

Drug rackets are operational in educational institutions, which are the closest and most effective way to be amidst the youth and channel their vulnerabilities and desires to push them down an unrecoverable path. This is a dilemma for AI developers, as AI cannot tract within its radar such rackets, reasons for which are many.

Firstly, the AI model must reach such a level of sophistication where capturing the difference been two large rackets, where the unlawful activity is the same but the strain and background is different, must be made clear via code to the neural networks of the program. Furthermore, if there prevails a continuing bias then the system will fail to capture the mere fact that young affluent youth members of a nation can have a connection to the drug network. The geographical and background analysis conducted by the AI effectively fails here. Thus a program specifically designed for the youth by coders must be deployed to the AI enhanced predictive policing methods. This ought to be developed with the guidance and expertise of professionals in the industry, such as physiatrists, rehabilitation experts, lawyers, and technocrats, as the lives of the next driving force of this nation depends on their work.

It is explicitly clear that mistakes cannot be afforded. Thus, predictive policing models like the NarcGuidebots that can easily be tailored to the Indian context, when integrated with data from different agencies within India must be enforced and rigidly applied. Here data like the health and addicts' information from National Health Mission (NMH) can be used and integrated with the NarcGuidebots to monitor drug use trends. Additionally, data from customs department identifying high risk borders and trafficking patterns can be added. Finally, records from law enforcement agencies such ad Crime and Criminal Tracking Network & Systems (CCTNS) (Quadrant Technologies, 2021) can be ingrained in the system for historical drug-related offenses to create a robust predictive policing system which would focus on various areas based on success stories from USA and UK.

There is not limitation to where one's imagination could stretch. The state could have AI driven systems to include hotspot identification, customizing algorithms for local patterns of drug use, trafficking and related crimes regionally, collaboration with rehabilitation programs to rehabilitate low risk offenders based on predictive policing, mobile deployment of on-ground officers in high risk zones, equip predictive policing technology with mobile compatibility so officers in remote locations could access real-time insights and file accurate reports directly from the field, increase partnership with academic institutions to prevent drug abuse and to collaborate for research activities for continuous upgradation of the technology. Yet for all of this to become a reality an efficient legislation become the need of the hour.

Conclusion:

Indian is in the infancy of predictive policing for narcotics crimes. While tools like Crime Mapping, Analytics, and Predictive System (CMAPS) forecast general crime trends, they lack advanced AI-driven capabilities for targeting narcotic crimes like NatGuideBot. They also lack predictive precision as they are dependent on state-specific crime records with limited regional integration with databases like the Crime and Criminal Tracking Network & Systems (CCTNS) and are not updated and utilized to full potential. They also lack cross-agency collaboration among customs, health, policy and police, which remains in its early stages, resulting in incomplete data insights for targeted narcotics enforcement (CMAPS Report, 2022; CCTNS Overview, 2019).

Hence predictive policing techniques like NatGuideBot with AI integration can be explored as a powerful tool, by modifying its features to India's unique needs, challenges and leveraging local partnerships, it has the potential to revolutionize narcotics enforcement, dismantle trafficking networks, and create safer communities. This technology can not only address enforcement and demand reduction but also supports holistic solutions, including rehabilitation and community education and involvement making it a game-changer for India's fight against narcotics. Yet for the safeguarding of citizens privacy there needs to be a statute that governs the functioning without violating the ethos of the nation. This project needs to be effectively utilised to revive the youth of our nation. The proposed strategy is a hypothesis, thus institutional research be done before working racing such complexities which one couldn't even fathom.

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