

RESEARCH ARTICLE

Genetic discrimination in India: Constitutional challenges and ethical implications

AKASH, SHUVRO PROSUN SARKER

Abstract

Background: This paper examines the emerging challenge of genetic discrimination (GD) in India, through constitutional, judicial, and ethical perspectives. GD is a critical issue driven by increasing accessibility to genetic testing and insufficient legal safeguards against misuse.

Methods: The study adopts a qualitative research design grounded in doctrinal analysis involving the interpretation of legal texts, case law, and principles, to investigate the emerging challenge of GD in India.

Results: The analysis interprets Articles 14 and 15 of India's Constitution as foundational protections against discrimination and bias, despite their lack of explicit mention of genetic grounds. Judicial decisions, including *United India Insurance Co v Jai Parkash Tayal* (2018), have highlighted inequitable insurance practices based on genetic conditions, prompting a broader constitutional dialogue on equality and non-discrimination. However, existing ethical guidelines from bodies like the Indian Council for Medical Research (ICMR) and the Biotech-PRIDE guidelines of the Department of Biotechnology, alongside data protection laws such as the 2023 Digital Personal Data Protection Act, prove inadequate in comprehensively safeguarding sensitive genetic information.

Conclusion: Robust legislative reforms, enhanced data governance, judicial capacity-building, and public awareness initiatives are necessary to foster a more inclusive legal ecosystem. It underscores the ongoing need for empirical and comparative research to fully comprehend the scope of GD in India and formulate context-sensitive policy responses. Ultimately, harmonising genomic advancements with India's constitutional values is essential to upholding individual dignity and ensuring substantive equality.

Keywords: genetic disorders, constitutional law, ICMR guidelines, judicial frameworks

Introduction

"The Constitution of India is a living instrument with capabilities of enormous dynamism. It is a constitution made for a progressive society..."

— Dipak Misra, J in *Manoj Narula v Union of India*[1]

This judicial articulation affirms the transformative character of the Constitution of India (the Constitution) — a vision entrenched by its framers through the structural and

normative architecture of Part III (Fundamental Rights) and Part IV (Directive Principles of State Policy). Article 14 of the Constitution guarantees the right to equality before the law and equal protection of laws to "any person", thereby transcending citizenship and reinforcing a universalist orientation of legal rights. Art 15(1) prohibits discrimination on grounds of religion, race, caste, sex, or place of birth, while Art 15(2) extends this prohibition to private actors in access to shops, restaurants, hotels, and places of public entertainment — laying the constitutional foundation against horizontal discrimination [2].

The Constitution proposes a fundamental transformation of society aimed at promoting liberty, equality, dignity, and justice, rather than simply offering passive protection of individual rights [3]. In the landmark case of *KS Puttaswamy v Union of India* (Puttaswamy II), the Supreme Court of India (SC) recognised this transformative character, cautioning that the unregulated use of technology could lead to profiling, surveillance, and discrimination [4]. The court emphasised that while laws evolve in specific historical contexts, they often become obsolete when confronted with contemporary technological realities [5].

Technologies such as genetic testing and data analytics now shape how individual identities, risks, and responsibilities are understood. Existing legal frameworks, however, have struggled to keep pace with these developments. In this context, lawmakers and policymakers must recalibrate regulatory structures to ensure that innovation is harmonised with constitutional commitments to individual autonomy, equality, and non-discrimination. Indeed, future technologies are poised to shape both constitutional law and broader societal functioning [6]. Modern advances in genomics and personalised medicine — unforeseen at the time of the drafting of the Constitution — have created new opportunities for health optimisation but also new grounds for discrimination.

Companies in the West such as "23andMe" and "ancestry.com" have made direct-to-consumer genetic testing (DTC-GT) increasingly affordable and accessible outside of clinical settings [7]. The steady rise in public interest in ancestry, inheritance and health risks has fuelled the rapid growth of such services [8]. In India, this trend is mirrored by companies such as "mapmygenome" and "genetrack", which offer DTC-GT in the absence of robust legal safeguards. This raises serious ethical and legal concerns about data privacy, potential profiling, and misuse

of genetic information [9]. Genetic testing has proven highly effective for identifying and managing inherited health risks [10].

Genetic disorders are defined as conditions caused by variations or mutations in the DNA sequence [11]. In India, the prevalence of such disorders may be attributed to a large population, high birth rate, and practices like consanguineous marriages [12,13]. As genetic data becomes more accessible, there is a heightened risk of its use to differentiate, exclude from benefits, or stigmatise individuals — particularly in sectors like insurance, employment, and healthcare. This potential for genetic discrimination (GD) underscores the urgent need for robust legal and ethical frameworks to safeguard individual dignity and rights in the face of emerging biomedical technologies.

Methods

The study adopts a qualitative research design grounded in doctrinal analysis involving the interpretation of legal texts, case law, and principles, to investigate the emerging challenge of GD in India. The overarching approach is underpinned by the concept of *transformative constitutionalism*, a framework that views the Constitution as an evolving document to address and remedy social inequalities. This framework promotes the interpretation and application of existing constitutional provisions to address contemporary issues unforeseen during the time of their drafting.

The research utilises three analytical perspectives:

The constitutional perspective

This involves a doctrinal analysis of Part III of the Constitution specifically examining Articles 14, 15, and 21. The analysis systematically applied established constitutional jurisprudence, including the “doctrine of arbitrariness” from *EP Royappa v State of Tamil Nadu (Royappa)* [14] and *Maneka Gandhi v Union of India (Maneka)* [15] and principles of substantive equality from *Navtej Singh Johar v Union of India (Navtej Johar)* [16], and *Puttaswamy II* to interpret their applicability to GD. Special attention was paid to the interpretation of Art 15(2) and its extension of anti-discrimination obligations to private actors providing access to public services, laying a constitutional foundation against horizontal discrimination [2]. This includes an analysis of *Indian Medical Association v Union of India (IMA)* [17].

The judicial perspective

A case-study approach was employed to analyse key judicial pronouncements specifically addressing GD. This included a detailed examination of the ruling of the High Court of Delhi (Delhi HC) in *United India Insurance Co Ltd v Jai Parkash Tayal (Jai Parkash Tayal)* [18], and subsequent judgments from the Madras High Court (Madras HC), the Kerala High Court (Kerala HC), and various Consumer Dispute Redressal Commissions. The focus was on how courts have interpreted constitutional

guarantees in the context of genetic conditions and insurance exclusions.

The ethical regulatory perspective

This involves a critical review and assessment of existing ethical frameworks and legal provisions relevant to genetic information and healthcare in India. The analysis specifically covered the 2017 Indian Council of Medical Research’s (ICMR) National Ethical Guidelines for Biomedical and Health Research, the 2017 National Health Policy (NHP 2017), the 2021 Biotech-PRIDE Guidelines of the Department of Biotechnology, the 2021 National Policy for Rare Diseases (NPRD 21), and the 2023 Digital Personal Data Protection Act (DPDPA). A comparative analysis with the Mental Healthcare Act, 2017 (MHCA) was also conducted to identify the potential shortcomings of these provisions concerning the unique attributes of genetic information, and to highlight the need for stronger, enforceable protocols.

Data sources

The research draws upon comprehensive legal sources including the Constitution of India, judgments from various courts and commissions, and relevant statutes and policies (DPDPA 2023, MHCA 2017, NHP 2017, NPRD 21, ICMR Guidelines, and Biotech-PRIDE Guidelines 2021). Primary legal texts and judicial pronouncements were retrieved from the Supreme Court of India’s official website (Supreme Court Reports / SCR) as well as legal databases like SCCOnline and Manupatra.

Academic and policy literature, utilised for contextualisation and analytical support was identified through structured keyword searches on platforms including Google Scholar, Springer, Nature, ScienceDirect, and WoS, using terms such as “genetic discrimination”, “Article 15”, “Article 14”, “Equality of outcomes”, “substantive equality”, “privacy”, “indirect discrimination”, “non-discrimination”, “counter-hegemonic justice”, and “transformative constitutionalism”.

To effectively capture the trajectory of judicial developments to notions of equality, non-discrimination under the Constitution of India, the work covers pronouncements of the Supreme Court of India in relation to Articles 14 and 15 since the Constitutional enactment in 1950. Also, statutory development has been traced in relation to the DPDPA 2023. This ensures that the main objective of tracing the judicial progress can be effectively captured. Moreover, literature from 2020 to 2025 has been relied on primarily, unless some fundamental aspect needs to be covered, in which case older literature has been referred to for establishing a theoretical basis to this research. This ensures that the study is cutting edge and current.

Data analysis

Qualitative content analysis was used to interpret legal texts, judicial pronouncements, and policy documents, identifying

key themes and principles relating to equality, non-discrimination, privacy, and dignity in the context of genetic information. A gap analysis was performed to pinpoint shortcomings in existing frameworks. Findings from all three perspectives were synthesised to develop comprehensive recommendations for legislative reforms, data governance, judicial capacity-building, and public awareness.

Results and discussion

Genetic discrimination in India: a constitutional challenge

Studies show a high prevalence of genetic disorders in India. With its vast population, a modest percentage of a specific disorder can translate into a very large absolute number of affected individuals [19]. This is further compounded by India's high birth rate which ensures continuous and significant incidence of new cases of genetic disorders among newborns. The prevalence rate of certain genetic disorders is increased by culturally embedded practices such as consanguineous marriage in some communities [20,21], with the risk of autosomal recessive disorders contributing to India's burden of genetic diseases [22].

GD occurs when genetic disorders or hereditary information collected during genetic testing of a person becomes a basis for discriminating against an individual or their family [23]. It has been defined as "*discrimination against an individual or against members of that individual's family solely because of real or perceived differences from the "normal" genome in the genetic constitution of that individual*" [24]. For instance, a person with a genetic predisposition to a disease may be denied employment, insurance, or promotion based on assumptions about future medical costs or productivity. This raises the concern that genetic data, if left unregulated, may give rise to a new class of disadvantaged individuals — one identified not by race, caste, or religion, but by biology [23]. Such genetic segregation risks replicating the logic of older exclusions and requires constitutional scrutiny.

Arts 14 and 15 provide a powerful framework to challenge GD. Art 14, which prohibits arbitrary or unreasonable classification, mandates that discrimination against someone solely on the basis of genetic risk — without individualised assessment — fails the twin test, requiring *intelligible differentia*, ie, a clear basis for the classification and a *rational nexus*, ie, a logical link between that basis and the goal of the law to the legislative objective. This was exemplified in the cases of *Royappa* and *Maneka*. Furthermore, since genetic characteristics are involuntary and intrinsic, similar to caste or sex, discrimination on this basis should be considered equally suspect under Art 15(1) [16]. Crucially, Art 15(2) extends anti-discrimination obligations to private actors in access to public services [25]. This provides constitutional support to prohibiting denial of insurance or healthcare on genetic grounds. Moreover, Art 38, as part of the Directive Principles, mandates that the State should promote social, economic, and political justice — underscoring its duty to redress structural inequities and redistribute resources. When read

with the Preamble and Article 38, these provisions form a "constitutional trinity" committed to dismantling systemic inequality and promoting dignity for all [26].

Expanding constitutional horizons: from state to private entities

The fear of GD is intensified by India's existing socio-cultural realities. Systemic inequalities and historical exclusions rooted in caste, gender, religion, and class further complicate efforts to create an inclusive society [17]. The following recent cases brought before the SC underscore this:

- A teacher in a private school was terminated from service solely for being a transgender person [27].
- A 7-year-old boy was mistreated by classmates due to his religion, allegedly at the behest of his teacher [28].
- A woman elected as *sarpanch* was removed from office due to local resistance stemming from her gender [29].
- A criminal case was filed against a *dalit* woman for attempting to enter a temple [30].

These incidents illustrate how various identity-based factors continue to serve as grounds for exclusion. In such a context, the inclusion of genetic data as a potential basis for discrimination only compounds the risk of creating a new, biologically defined underclass. It raises urgent ethical and legal questions about whether our existing legal structures are equipped to protect individuals from new and subtle forms of social and economic marginalisation rooted in genomic science.

The Constitution of India embodies counter-hegemonic notions of justice, reflecting the nation's historical context and unique characteristics [31]. Part III, especially, foregrounds the dignity and autonomy of the individual as central to constitutional morality [5]. Chief Justice S M Sikri had noted that the Constitution aims to create a welfare state and egalitarian social order [32]. Similarly, Justice Krishna Iyer had emphasised that equal justice is a component of social justice, and entails actively working to uplift the disadvantaged so that they experience substantive, rather than merely formal, equality [33]. Article 14 is the cornerstone of this constitutional vision.

In *Minerva Mills v Union of India (Minerva Mills)*, the SC concluded that the Article confers universal rights foundational to achieving dignity of the individual. The court rejected a narrow originalist reading of Article 14, asserting its aspirational function in addressing inequality [5, 34]. In *M Nagaraj v Union of India (Nagaraj)* [26], the court reinforced the idea that the Constitution is an evolving document aimed at achieving equality through transformative constitutionalism [35]. Historically, Art 14 was interpreted using the "classification test," inspired by the US

Constitution's Fourteenth Amendment, which asked whether a legal classification had intelligible differentia and a rational nexus with the law's objective [36]. In *Chiranjit Lal Chowdhuri v Union of India (Chiranjitlal)* [37], Justice Fazl Ali clarified that arbitrary classifications lacking a substantial basis would violate Art 14 [37].

Over time, however, the Court recognised the limitations of the classification test in addressing complex societal issues. In *Royappa*, the SC introduced the "arbitrariness doctrine," asserting that equality is "antithetical to arbitrariness." The Court held that any arbitrary state action is inherently unequal and thus violative of Art 14. This broadened the scope of judicial review by allowing courts to go beyond rigid comparisons [14]. This doctrinal shift evolved further in *Shayara Bano v Union of India (Shayara Bano)* [38], where the Court introduced the concept of "manifest arbitrariness" — defined as capricious or irrational legislative action lacking an "adequate determining principle" and being "excessively disproportionate" [38].

The application of this principle in *Navtej Singh Johar v Union of India (Navtej Johar)* [16] marked a transformative moment, as the Court invalidated laws criminalising consensual sexual conduct between same-sex adults, marking a significant step toward promoting substantive equality [16]. The court also criticised the legal formalism inherent in the classification test, stating that the formalist nature of the test was reducing Art 14 to a dead letter without the true sense of equality it recognises [16]. The *Navtej Johar* judgment reaffirmed the need for substantive equality that accounts for lived realities and structural inequalities. While Art 14 targets state discrimination, Art 15(2) expands the constitutional horizon by addressing *private discrimination* in public accommodations and services.¹ This provision prohibits exclusion by non-state actors offering services to the public for a fee.

In the *IMA* case, the SC provided a framework for interpreting Art 15(2) in contemporary contexts. The case challenged the admission policy of a private medical college that favoured wards of army personnel [17]. The Court held that education, being a publicly offered service, fell within the scope of Art 15(2). It interpreted the term "shops" broadly to include "all private establishments rendering service to the public for a fee" — thus extending the obligation to uphold substantive equality to such entities. The *IMA* case affirmed that "public service" is the core value inherent in Art 15(2). The Court noted that the framers intended "shop" to be interpreted generically. During the Constituent Assembly Debates on November 29, 1948, Dr Ambedkar explained that the term should encompass any place offering goods or services to those willing to pay, regardless of ownership [39]. This definition encompasses both service providers and consumers [17].

The SC concluded in *IMA* that a "publicly offered service" must proscribe discrimination. While Art 15(2) may not regulate private decisions like marriage, it certainly governs access to

essential and dignified services. Nevertheless, private discrimination affects people's daily lives — in housing, mobility, and access to opportunity. This interpretation has direct implications for insurance providers, both public and private. Since both operate in markets offering essential services to the public, they may fall within the scope of Art 15(2), particularly when their decisions impact access to healthcare and financial security. While public insurers, as "State" under Art 12, are directly bound by Arts 14 and 15(1), private insurers — by virtue of engaging in public services — may be indirectly subject to constitutional scrutiny through an expansive reading of Art 15(2). Moreover, where their conduct reflects irrational or excessive exclusion, it may violate the arbitrariness doctrine under Art 14. Discrimination on the basis of genetic predisposition, especially when based on probabilistic or incomplete information, risks violating the requirement of rational and individualised assessment as laid down in *Royappa* and *Maneka*.

In India, legal safeguards against private discrimination remain underdeveloped. Stronger legislative action and more robust judicial interpretations are needed to address these issues. Yet even legal provisions may fall short. For instance, in *Zoroastrian Cooperative Housing Society v District Registrar, (Zoroastrian case)* the SC upheld a housing agreement that restricted access based on community identity, reinforcing exclusion [40]. This case highlights the limits of formal legal reasoning and underscores the need to revisit ethical and constitutional principles when confronting entrenched private discrimination.

Judicial responses: towards a constitutional approach to genetic discrimination

Discrimination, a pervasive issue with severe consequences, occurs when individuals with equal capabilities face unequal treatment and restricted access to opportunities based on prejudiced assumptions about their identities. Unlike inequality, which denotes differing outcomes and opportunities, discrimination focuses on bias-driven exclusion based on protected characteristics such as gender, caste, religion, disability, and more [31, 41].

The SC has deemed the courts and the State duty-bound to take positive steps towards non-discrimination, thereby protecting the ideals of individual autonomy, while also preserving the dignity and inclusiveness of all sections of society [16, 42]. Indian courts have developed robust principles regarding indirect discrimination. The SC has clarified that policies or provisions, even if seemingly neutral, may disproportionately disadvantage individuals with specific characteristics — such as those with genetic disorders — unless justified by a reasonable and proportionate objective [43]. Judicial responses have also extended the logic of non-discrimination to broader health contexts. For example, in 2023, the Delhi HC considered a case involving a person with tetraplegia and paralysis below

the chest, caused by a spinal cord injury in 2011. Although the matter did not directly involve a genetic disorder, the Court held that mental and physical health conditions — whether genetic or acquired — must be treated equally for purposes of insurance eligibility [44]. In 2024, the Patna High Court discussed the rights of persons with disabilities, including those with genetic conditions, and emphasised the obligations of the State to ensure their inclusion in all aspects of social and economic life.

The judicial conversation around GD in India began meaningfully with *Jai Parkash Tayal's* case, the 2018 ruling by the DHC, which considered whether health insurers could lawfully deny coverage for individuals with genetic disorders under a “genetic exclusion clause” [18]. Although the defendant in this case was a private insurance company, the court analysed the issue through the lens of constitutional guarantees, particularly Arts 14 and 21. The central question was whether individuals with genetic disorders could be lawfully discriminated against in health insurance coverage. The plaintiff in the case had taken a Mediclaim policy in 2000 for himself and his family, which was renewed annually until 2012. Between 2004 and 2006, he was hospitalised for hypertrophic obstructive cardiomyopathy (HOCM), and his claim was duly honoured in 2006. However, when he was hospitalised again in 2011, the insurer rejected his claim, citing a “genetic exclusion clause” that excluded coverage for “genetic disorders”.

Tayal's case was one of the first instances of a High Court encountering a legal question which highlights a topic largely neglected in Indian jurisprudence and academic discourse. The Delhi HC held that insurance companies denying health insurance without satisfying the test of intelligible differentia (such as through proper genetic testing) were acting arbitrarily, thus violating Art 14 [18]. Moreover, as per the 1995 Supreme Court judgment, such exclusion also undermined the right to health under Art 21 [45]. In effect, the *Tayal* ruling considered genetic characteristics a constitutionally suspect ground for discrimination. In March 2018, the Madras High Court also echoed the same concerns. The petitioner had purchased a family floater health insurance policy. Her husband had died of colon cancer caused by familial adenomatous polyposis syndrome (FAPS) — a genetic condition. Her elder son, who inherited the condition, underwent major surgery. The insurance company denied the claims, on the basis that FAPS was a genetic disorder excluded under the policy [46]. The court upheld the petitioner's claim, thereby reinforcing judicial concern around GD.

While the SC later granted a stay in the Delhi HC's *Tayal* ruling, the broader legal conversation continued. Since the *Tayal* case, several consumer forums and High Courts have addressed GD in insurance. In 2019, the State Consumer Dispute Redressal Commission (SCDRC) of West Bengal, adjudicated a case involving a patient treated for encephalopathy, and diagnosed with Cohen syndrome — a genetic disorder excluded under the insurance policy [47].

Similarly, the Kerala HC in 2019 addressed a case where an insurance claim was denied to a patient based on suspected Marfan's syndrome, despite the absence of a definitive diagnosis [48]. In 2022, a District Consumer Dispute Redressal Commission in Delhi dealt with the distinction between congenital and genetic disorders in an insurance dispute [49]. The commission's analysis revealed a clear judicial awareness of how such exclusions operate and their discriminatory potential.

The cumulative weight of all these cases has shed light on how courts and tribunals are increasingly recognising the discriminatory impact of excluding individuals from insurance and healthcare services based on genetic conditions. These judgments reaffirm that such exclusions are incompatible with the right to equality under Article 14 and the right to health under Article 21. Courts have not only acknowledged the existence of GD in India but have also attempted to provide a constitutional framework for addressing it — asserting that both the State and private actors must uphold the values of dignity, autonomy, and substantive equality. Thus, in an era of rapid scientific and technological advancements in genomics, these judicial interventions represent a vital step toward ensuring that constitutional protections evolve to meet emerging forms of discrimination. Consequently, it is imperative that ethical policy frameworks reflect these evolving understandings.

Ethical and regulatory gaps

Despite judicial interventions, significant ethical and regulatory gaps persist in India's framework for genetic information. GD raises serious ethical concerns as it directly threatens the core values of human dignity, justice, and equity by punishing vulnerable individuals for immutable, probabilistic traits [24]. The increasing accessibility of genetic testing, compounded by India's pre-existing systemic inequalities, exacerbates this vulnerability. Existing policy instruments show limitations in specifically addressing GD.

India's NHP 2017, while promoting ethical standards and patient rights, lacks specific provisions for the misuse of genetic data or potential discrimination arising from its disclosure. Regarding genetic diseases, the NHP under the National Health Programme on Child and Adolescent Health endorses the requirements for district hospitals to ensure screening and treatment for genetic diseases in children. Patient rights are addressed within the policy's regulatory framework protected through regulation of clinical establishments (including right to information access, requiring confidentiality, informed consent, and second opinions) [50].

The ICMR National Ethical Guidelines emphasise participant safety, confidentiality, and informed consent in the context of genetic testing [51]. The guidelines acknowledge the ethical risks of overlapping research and healthcare, particularly regarding familial communication and data

privacy. However, they fail to address the broader fear of discrimination or offer binding mechanisms for redress, in the event of privacy breaches or misuse of data [52].

The NPRD 21, developed by the Ministry of Health and Family Welfare, proposes a national registry and increased awareness of rare diseases. While it rightly acknowledges the role of technology in improving diagnosis and treatment, it overlooks critical ethical considerations, such as consent, privacy, and the potential for discrimination based on genetic conditions [53]. The lack of binding legal obligations under NPRD 21 highlights the broader gap in India's regulatory architecture, particularly in holding private sector entities accountable. The Biotech-PRIDE Guidelines, aim to promote responsible data sharing and prevent misuse, including discrimination against communities. Despite their relevance in biomedical contexts, the guidelines do not explicitly mention genetic data or individual-level harms [54]. Moreover, the lack of specific, enforceable obligations weakens their deterrent effect.

The DPDPA, while a landmark for data protection, does not explicitly define or provide enhanced safeguards for high-risk data like genetic information. As a result, the processing of genetic information, despite its sensitive nature and potential for misuse, is treated under the same provisions as any other personal data [55]. Moreover, the Rules under DPDPA are still in the draft stage, meaning that the Act remains unimplemented, creating further uncertainty.

In this fragmented regulatory landscape, the increasing role of statutory bodies like the Insurance Regulatory and Development Authority of India (IRDAI) becomes particularly important. IRDAI's regulatory functions serve as a key conduit for embedding constitutional values such as equality and non-discrimination into the operations of private markets. An instructive parallel can be found in the MHCA, which provides a statutory model for non-discrimination in healthcare, including the private sector [56]. Section 21(1) of the MHCA guarantees the right to equality and non-discrimination in the provision of mental health services, regardless of a person's gender, caste, religion, or any other basis. Significantly, Section 21(4) mandates that insurers must provide coverage for mental illness on the same basis as physical illness, thus extending anti-discrimination norms into the realm of private insurance [57]. This demonstrates how transformative constitutionalism — the idea that constitutional norms evolve and apply beyond traditional state actors — can help fill ethical gaps in fields like genomics and health insurance.

While India's ethical and regulatory frameworks acknowledge the importance of protecting individuals in biomedical and healthcare contexts, they fall short in directly addressing the risks of GD. Ethical principles such as dignity of the individual, autonomy, and fairness demand stronger protections against potential misuse of genetic information. The absence of a coherent legal framework — paired with systemic socio-cultural exclusions — risks normalising new forms of biological marginalisation. A robust response to GD will

require harmonising constitutional commitments with enforceable ethical standards, grounded in both individual rights and institutional accountability.

The need to go beyond judicial efforts

GD presents an emerging challenge in India, particularly within the insurance sector, where individuals with genetic conditions face exclusion. This issue is magnified by India's existing socio-cultural inequalities, which could be exacerbated by the unchecked use of genetic technologies.

While Arts 14 and 15 of the Indian Constitution offer a robust framework against discrimination, their explicit application to genetic information remains a critical regulatory gap. Judicial pronouncements, such as the landmark 2018 ruling in *Jay Parkash Tayal*, along with subsequent High Court decisions, have consistently challenged genetic exclusion clauses in health insurance as arbitrary and violative of Articles 14 and 21. These rulings underscore a vital judicial inclination towards individualised assessment rather than generalised exclusion. Moreover, the judiciary's extension of constitutional principles to private entities providing public services, as seen in the *IMA* case, suggests a potential avenue for addressing GD by private actors. However, the limitations of purely judicial remedies evidenced by cases like *Zoroastrian Cooperative Housing Society*, highlight the imperative for legislative clarity.

Beyond judicial efforts, India's regulatory landscape exhibits significant gaps. The DPDPA, while a step forward, falls short in addressing the inherently sensitive and predictive nature of genetic information. Similarly, current ethical guidelines from bodies like the ICMR are largely advisory, lacking enforceable mechanisms to prevent the broader social consequences of genetic data misuse. The MHCA, however, provides a valuable statutory model for enforcing non-discrimination in healthcare, including in the private sector, demonstrating how regulatory bodies like the IRDAI can embed constitutional values into market operations. A cohesive legal framework is therefore essential to prevent the emergence of "biological underclasses" and align genomic advancements with constitutional principles.

Recommendations

To ensure that genetic science promotes equity rather than exacerbating exclusion, the following targeted recommendations are proposed.

1. *Enact dedicated anti-discrimination legislation on genetic grounds*

The Constitution provides the means to prevent genetic information-based discrimination by promoting substantive equality. To effectively address GD, Parliament should enact specific legislation prohibiting it across various sectors, including healthcare, insurance, and employment. This law should clearly define "genetic discrimination" while prohibiting blanket exclusion or

profiling based on genetic traits. It should ensure grievance redressal mechanism as well as enable constitutional non-discrimination principles to non-state actors in relevant sectors. This would harmonise judicial recognition with enforceable statutory protections.

2. **Strengthen genomic data protection through tailored legal frameworks**

To address the unique sensitivity of genetic data, the DPDPA should be supplemented with byelaws. While legislative amendments can be challenging, byelaws could define genetic data as “sensitive personal data” under the Act, requiring stricter safeguards. They could also mandate explicit, tiered informed consent for all uses and obligations on both public and private entities to prevent misuse. MHCA 2017 could serve as an instructive statutory model for a future GD-specific legislative and legal framework.

3. **Institutional oversight by regulators like IRDAI and sector-specific bodies**

Given the high incidence of GD in insurance, sectoral regulators like the IRDA must utilise their existing regulatory powers to issue binding circulars prohibiting the use of genetic exclusion clauses in insurance contracts. This should be accompanied by monitoring compliance through audits and the enforcement of penalties for violations. Additionally, other sectoral bodies should extend oversight to health-tech and genetic testing providers that use genetic profiling. This approach reinforces transformative constitutionalism in the market context without requiring new institutions.

4. **Strengthen ethical norms through enforceable protocols**

Instead of relying solely on non-binding ethical guidelines, the government should issue binding executive orders or circulars that integrate anti-discrimination safeguards into healthcare policies and research ethics. These instruments should apply not only to public healthcare but also across private diagnostics and insurance sectors. Additionally, updating the NHP 2017, ICMR Guidelines, and NPRD 21 to include actionable protections against genetic discrimination would be beneficial. Ethics must be enforceable to meaningfully deter discrimination and data misuse.

5. **Encourage cross-sectoral collaboration**

Formal collaborations between legal experts, genomic scientists, bioethicists, insurance regulators, and patient advocacy groups could be beneficial in developing sector-specific protocols, training modules, and model practices. This would ensure responsible and equitable use of genetic information.

Limitations of the study

This study relies on doctrinal legal research, focussing on the analysis of existing legal texts and case law. This limits the study to theory-based analysis. Moreover, the qualitative approach has focussed on legal interpretation, rather than empirical data, on GD prevalence or direct impact. Further empirical and comparative research is needed to understand the full scope of GD in India.

Conclusion

To effectively safeguard equality and human dignity in the genomic age, India must transition from piecemeal judicial interventions and fragmented ethical guidelines towards a constitutionally grounded and enforceable legal framework that explicitly prevents GD. The pervasive legal and ethical gaps, despite existing constitutional protections under Arts 14 and 15 leave individuals vulnerable to new forms of biological marginalisation, particularly in critical sectors like insurance and healthcare.

Adopting a rights-based approach grounded in legislative clarity, ethical accountability, and institutional coordination is therefore essential. Future research should delve into the sociological impact of GD in India, evaluate the commitment of DTC-GT services to privacy and ethical standards, and assess the comparative effectiveness of existing legal frameworks, including the feasibility of a dedicated regulatory framework for genetic data. Proactively addressing these complex issues is paramount to ensuring that advancements in genomics contribute to substantive equality and the benefit of all of society.

Note: Article 15(2) mandates that no citizen shall be subject to any disability, liability, restriction or condition, with regard to—(i) access to shops, public restaurants, hotels and places of public entertainment; or (ii) the use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partly out of State funds or dedicated to the use of general public, only on grounds of religion, race, caste, sex, place of birth or any of them.

Authors: Akash (corresponding author – advakash.up@gmail.com, akash@symmlaw.ac.in, <https://orcid.org/0000-0002-1077-7302>), Assistant Professor of Law, Symbiosis Law School Pune (SLSP), Symbiosis International (Deemed University), Pune, Maharashtra, 411014, INDIA; **Shuvro Prosun Sarker** (shuvro@rgsoipl.iitkgp.ac.in, <https://orcid.org/0000-0001-8117-2493>), Assistant Professor, Rajiv Gandhi School of Intellectual Property Law, Indian Institute of Technology, Kharagpur, West Bengal, 721302, INDIA

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