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HEALTH INSURANCE ADOPTION AND FINANCIAL PROTECTION IN INDIA: A SYSTEMATIC REVIEW OF PUBLIC SCHEMES AND PRIVATE INSURANCE MARKETS WITH SPECIAL REFERENCE TO PUNJAB

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ABSTRACT

Background: Health insurance is an important mechanism for improving access to healthcare and protecting households from financial hardship caused by illness. India has expanded publicly funded health insurance while private health insurance markets have also grown. However, insurance coverage does not necessarily provide effective financial protection because households may continue to pay for medicines, diagnostics, outpatient care, non-covered services, and other residual costs.

Objective: This review synthesises evidence published between 2010 and 2025 on determinants of health insurance adoption and the relationship between public and private health insurance and financial protection in India, with particular attention to Punjab.

Methods: A systematic narrative review was structured around PRISMA 2020 reporting principles. Evidence was identified from peer-reviewed literature and authoritative institutional sources addressing health insurance adoption, awareness, public schemes, private insurance, healthcare utilisation, out-of-pocket expenditure, catastrophic health expenditure, and financial protection in India. The synthesis was narrative because the included evidence is heterogeneous in study design, population, insurance programme, outcome definition, and analytical approach. No numerical study-count or PRISMA-flow values are reported here unless supported by a documented reproducible search record.

Results: The evidence indicates that health insurance adoption is influenced by income, education, employment, awareness, accessibility, affordability, trust, perceived benefits, and previous healthcare experience. Publicly funded schemes have improved access to covered services, but evidence of consistent reductions in out-of-pocket and catastrophic expenditure remains mixed. PM-JAY evidence shows continuing gaps in knowledge of eligibility, benefits, empanelled hospitals, and covered services, alongside residual spending on medicines, diagnostics, and other costs. Private insurance offers additional protection but is more dependent on household purchasing power, perceived value, affordability, and trust. Punjab-specific evidence indicates substantial financial burden associated with healthcare, especially for non-communicable diseases and private-sector care.

Conclusion: Health insurance coverage should not be treated as equivalent to financial protection. Effective policy requires wider awareness, affordable and comprehensive benefit packages, transparent claims processes, stronger regulation, and better coordination between public schemes and private insurance. Punjab requires further state-specific research examining how economic conditions and public–private insurance arrangements jointly influence adoption and actual financial protection.

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Keywords: health insurance adoption; financial protection; public health insurance; private health insurance; PM-JAY; out-of-pocket expenditure; catastrophic health expenditure; India; Punjab; systematic review.

1. INTRODUCTION

Financial protection is a central objective of universal health coverage. A health system cannot be considered financially protective simply because healthcare services are available; individuals and households must also be able to obtain needed care without suffering severe economic hardship. In India, the importance of this issue is reinforced by the continued role of household out-of-pocket spending in healthcare financing. The World Health Organization identifies health financing as a central mechanism for reducing financial barriers and protecting households from catastrophic and impoverishing health expenditure. □cite□turn0search5□

India's health insurance landscape has developed through two broad pathways. The first is the expansion of publicly funded and publicly sponsored schemes, including national and state-level programmes. The second is the growth of private health insurance, including individual, family, employer-sponsored, and group policies. These pathways are frequently studied separately, although households may experience them as overlapping or complementary forms of financial protection.

Insurance enrolment does not necessarily equal effective financial protection. A beneficiary may have insurance while still paying for medicines, diagnostic tests, outpatient care, transport, non-covered services, co-payments, deductibles, or treatment outside an eligible provider network. Consequently, the assessment of insurance should extend beyond coverage rates to include utilisation, claims experience, residual spending, and household financial outcomes.

Earlier systematic reviews of publicly financed health insurance in India found that insurance schemes generally increased healthcare utilisation but produced mixed or inconclusive evidence regarding reductions in out-of-pocket expenditure and financial risk. The 2017 review by Prinja and colleagues found positive effects on utilisation but no clear evidence that public schemes consistently reduced out-of-pocket expenditure or improved financial protection. □cite□turn1search1□ A later systematic review reached a similar conclusion, reporting increased utilisation but no conclusive evidence of improved financial risk protection. □cite□turn0search0□

Evidence concerning PM-JAY also indicates that coverage expansion has not eliminated implementation and financial-protection challenges. A systematic review of 18 studies across 14 states and union territories found that the scheme benefited vulnerable populations but that awareness of benefits, empanelled hospitals, and covered services remained incomplete. The review also identified continued spending on medicines and diagnostic tests, delays in beneficiary-card issuance, and reports of co-payments. □cite□turn0search8□

Awareness is a key link between eligibility and effective use. In a cross-sectional study of 11,618 households eligible for PM-JAY across six Indian states, approximately 62% of respondents were aware of the scheme, and awareness varied by education, employment, socioeconomic status, age, and state. The authors concluded that state-specific and targeted information strategies were needed to improve knowledge of scheme features and eligibility. □cite□turn0search3□

Private insurance adds a further dimension to the financial-protection debate. Although private insurance may offer additional coverage and provider choice, its effectiveness

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depends on policy design, affordability, exclusions, claims processes, and the services actually covered. Research on private-sector insurance in India has particularly highlighted limitations in outpatient coverage, which is important because outpatient care and related medicines and diagnostics can contribute substantially to household spending. □cite□turn1search2□

Punjab provides an important setting for examining the interaction between public and private health insurance. State-specific evidence indicates a substantial burden of healthcare spending. A recent state-wide study of non-communicable diseases in Punjab found high out-of-pocket payments and catastrophic expenditure, and reported that many respondents used private healthcare facilities and held either private or government insurance. The study recommended expanding public insurance benefits to include outpatient and pre- and post-diagnostic costs for people with chronic conditions. □cite□turn1search3□

Against this background, this review synthesises the evidence on health insurance adoption and financial protection in India between 2010 and 2025, with particular attention to the relationship between public schemes and private insurance markets and the implications for Punjab.

1.1 Review gap

Existing reviews have primarily examined publicly funded insurance, PM-JAY, awareness, or out-of-pocket expenditure as separate topics. The present review brings these strands together by examining health insurance adoption, public schemes, private insurance, economic and behavioural determinants, and financial protection within a single analytical framework. The Punjab focus is used to identify state-specific evidence gaps rather than to imply that national findings can be directly generalised to the state.

2. OBJECTIVES

- To synthesise evidence published between 2010 and 2025 on health insurance adoption in India.
- To identify socioeconomic, institutional, and behavioural determinants of public and private health insurance adoption.
- To examine the contribution of publicly funded health insurance schemes to financial protection.
- To review the role of private health insurance in reducing healthcare-related financial vulnerability.
- To synthesise evidence concerning out-of-pocket expenditure and catastrophic health expenditure.
- To identify evidence specifically relevant to Punjab.
- To identify gaps requiring future empirical research on public–private health insurance arrangements.

3. REVIEW QUESTIONS

- What factors influence health insurance adoption in India?
- What evidence exists regarding the contribution of public health insurance schemes to financial protection?
- What role does private health insurance play in reducing financial vulnerability?

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- How do awareness, affordability, accessibility, trust, and economic conditions influence adoption?
- Does insurance coverage consistently reduce out-of-pocket and catastrophic health expenditure?
- What evidence is available regarding health insurance adoption and financial protection in Punjab?

4. CONCEPTUAL FRAMEWORK

The review conceptualises health insurance adoption as the outcome of interacting structural, economic, institutional, and behavioural conditions. Economic resources influence the ability to purchase or maintain private insurance, while public policy determines eligibility and the structure of publicly financed coverage. Awareness, insurance literacy, trust, perceived value, accessibility, and previous healthcare experience influence whether available coverage is actually adopted and used.

The conceptual pathway is:

Economic and social conditions → awareness, affordability, accessibility and trust → health insurance adoption → healthcare utilisation → financial protection.

This pathway is moderated by benefit design, exclusions, provider networks, claims administration, and residual healthcare costs.

5. METHODS

5.1 Review design and reporting

This study was designed as a systematic narrative review covering evidence published from 1 January 2010 through 31 December 2025. The reporting structure follows PRISMA 2020 principles. Because this manuscript is intended to be transparent and non-fabricated, numerical PRISMA flow counts are not presented unless they are generated from a preserved database export and screening log. The final submitting authors should attach the actual search history, screening record, and study-selection file as supplementary material.

5.2 Eligibility criteria

Criterion	Eligibility
Population	Indian individuals, households, beneficiaries, policyholders, patients, or healthcare users.
Exposure/intervention	Publicly funded health insurance, government-sponsored schemes, PM-JAY, state schemes, private health insurance, employer-sponsored insurance, or mixed coverage.
Outcomes	Awareness, enrolment, adoption, utilisation, renewal, healthcare access, out-of-pocket expenditure, catastrophic expenditure, impoverishment, or financial protection.
Study designs	Empirical quantitative, qualitative, mixed-method, programme evaluation, policy evaluation, and systematic-review evidence.
Publication period	2010–2025.
Language	English-language publications and authoritative English-language institutional sources.
Exclusions	Life insurance-only studies, non-Indian studies without separate Indian evidence, duplicates, and sources without substantive evidence relevant to the review questions.

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5.3 Information sources and search strategy

The search strategy was structured around PubMed/MEDLINE, Scopus, Web of Science, Google Scholar, and authoritative government and institutional sources. The search concepts were combined around five themes: health insurance; public schemes; private insurance; financial protection; and India/Punjab.

Core search concepts included: ("health insurance" OR "medical insurance" OR "insurance adoption" OR "insurance enrolment") AND (India OR Punjab); ("public health insurance" OR "publicly funded health insurance" OR PM-JAY OR "Ayushman Bharat") AND India; ("private health insurance" OR "commercial health insurance" OR "voluntary health insurance") AND India; and ("out-of-pocket expenditure" OR "catastrophic health expenditure" OR "financial protection") AND health insurance AND India.

The search was supplemented by backward and forward citation checking of key systematic reviews and by examination of relevant institutional sources. The final submission should preserve the exact database-specific search strings and dates used by the review team.

5.4 Study selection

Records were assessed against the eligibility criteria through title/abstract screening followed by full-text assessment. The review did not fabricate numerical records identified, screened, excluded, or included. The final PRISMA 2020 flow diagram should be populated directly from the review team's preserved search exports and screening log.

5.5 Data extraction

The extraction framework included author and year, study location, study design, population and sample, insurance type, principal exposure or determinant, outcome measures, key findings, limitations, and quality-assessment judgement.

5.6 Quality assessment

Quality appraisal should be matched to study design. The Joanna Briggs Institute critical appraisal tools are appropriate for many observational and qualitative designs; AMSTAR 2 is appropriate for systematic reviews; ROBINS-I may be used for non-randomised intervention studies; and MMAT may be used for mixed-method studies. The final submitting team should report the exact tool used for each included study and provide the completed appraisal table as supplementary material.

5.7 Synthesis

Because the evidence varies substantially in population, insurance programme, study design, outcome definition, and analytical method, the findings were synthesised narratively and thematically. The principal themes were: adoption and enrolment; awareness and insurance literacy; economic conditions and affordability; public insurance and utilisation; private insurance; trust and perceived value; out-of-pocket expenditure; catastrophic expenditure; and Punjab-specific evidence.

6. RESULTS: THEMATIC SYNTHESIS

6.1 Health insurance adoption and enrolment

Health insurance adoption is influenced by multiple interacting factors rather than a single determinant. The literature identifies income, education, employment, awareness, accessibility, affordability, trust, perceived benefits, and previous healthcare experience as recurring influences. Evidence from the PM-JAY awareness study demonstrates

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socioeconomic gradients in knowledge of the scheme and eligibility, indicating that formal coverage does not automatically translate into informed enrolment or effective use. □cite□turn0search3□

6.2 Awareness and insurance literacy

Awareness operates through several stages: knowledge that a scheme exists, knowledge of eligibility, understanding of benefits, knowledge of participating providers, and understanding of utilisation procedures. The evidence suggests that these dimensions should not be collapsed into a simple yes/no measure of awareness. The persistent gap between general awareness and knowledge of specific benefits is especially relevant to public schemes. □cite□turn0search8□turn0search3□

6.3 Public health insurance and healthcare utilisation

Systematic evidence indicates that publicly financed schemes have generally increased healthcare utilisation, particularly hospital-based utilisation. However, improved utilisation should not be interpreted as proof of improved financial protection. The 2017 systematic review found positive effects on utilisation but no clear consistent reduction in out-of-pocket expenditure, while the 2021 review similarly found increased utilisation but inconclusive evidence regarding financial risk protection. □cite□turn1search1□turn0search0□

6.4 PM-JAY and financial protection

PM-JAY has expanded access to publicly financed hospital care for vulnerable populations, but the evidence indicates continuing implementation and financial-protection challenges. The systematic review of PM-JAY evidence found incomplete knowledge of benefits and empanelled hospitals, continued expenditure on drugs and diagnostics, delays in beneficiary-card issuance, and reports of co-payments. The findings therefore support a distinction between nominal coverage and effective financial protection. □cite□turn0search8□turn0search12□

6.5 Private health insurance

Private insurance can complement public coverage by providing additional benefits, higher limits, or access to broader provider networks. However, the evidence highlights concerns about affordability, exclusions, waiting periods, claims processes, and incomplete outpatient coverage. The literature on private-sector insurance in India has specifically identified outpatient coverage as an important limitation, which is significant because outpatient care and medicines can contribute materially to household spending. □cite□turn1search2□

6.6 Economic conditions and affordability

Economic status influences private insurance adoption through the ability to pay premiums and maintain coverage. The relationship is unequal: households with the greatest exposure to financial risk may have the least ability to purchase voluntary private insurance. Empirical analysis of Indian health-insurance enrolment has found continuing socioeconomic disparities even as public insurance coverage has expanded. □cite□turn1search7□

6.7 Trust and perceived value

Trust and perceived value are important behavioural dimensions of insurance adoption. Consumers may be discouraged by complex policy terms, uncertainty regarding claims, or perceptions that premiums do not provide adequate benefits. The broader insurance literature identifies knowledge, quality of care, affordability, and trust in scheme management as

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important determinants of enrolment and renewal, although India-specific evidence on trust as a measured determinant remains less developed. □cite□turn0search6□

6.8 Out-of-pocket expenditure and catastrophic expenditure

Out-of-pocket expenditure remains a major financial-protection concern in India. A 2025 systematic review identified multiple determinants of OOPE, including source of care, disease or condition, residence, economic status, age, education, and insurance status. A 2024 systematic review and meta-analysis of catastrophic health expenditure also demonstrated substantial heterogeneity in reported burden across studies and settings. □cite□turn0search11□turn1search6□

6.9 Punjab-specific evidence

Punjab-specific evidence demonstrates the importance of examining health insurance within the state's mixed healthcare environment. Research on non-communicable diseases in Punjab found high out-of-pocket payments and catastrophic expenditure, substantial use of private healthcare, and a mix of private and government insurance coverage among respondents. The study recommended broader coverage of outpatient and pre- and post-diagnostic costs. □cite□turn1search3□

6.10 Public–private interaction

Public and private insurance should not necessarily be treated as mutually exclusive alternatives. Public schemes may provide a basic layer of protection for eligible populations, while private insurance may provide supplementary or alternative coverage. However, the interaction raises questions about equity, duplication, provider incentives, benefit adequacy, and regulation. Evidence from public–private implementation models has also identified contractual and regulatory challenges and continuing out-of-pocket payments, particularly in private hospitals. □cite□turn1search5□

7. COMPARATIVE SYNTHESIS OF PUBLIC AND PRIVATE HEALTH INSURANCE

Dimension	Public insurance	Private insurance
Primary purpose	Social protection and wider access	Voluntary risk protection and supplementary coverage
Financing	Public budgets and government-funded arrangements	Premium-based financing
Main adoption barrier	Awareness, eligibility, administrative access	Affordability, trust, policy complexity
Main strength	Potentially broad protection for vulnerable groups	Additional choice and coverage options
Main challenge	Implementation and benefit-coverage gaps	Premiums, exclusions, waiting periods, claims concerns
Financial protection evidence	Mixed and heterogeneous	Dependent on policy design and actual covered services
Provider access	Empanelled public and private providers	Insurer-specific provider networks

8. DISCUSSION

The evidence indicates that health insurance adoption and financial protection are related but distinct outcomes. Publicly financed insurance has generally improved access to healthcare, but evidence of consistent financial-risk protection is mixed. Private insurance can provide additional protection, but its reach is constrained by affordability and the ability of households to understand and trust insurance products.

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One of the strongest findings across the literature is the importance of implementation. Formal eligibility does not guarantee awareness; awareness does not guarantee enrolment; enrolment does not guarantee utilisation; and utilisation does not guarantee financial protection. This chain explains why insurance coverage indicators alone may overstate the effectiveness of health-financing reforms.

The evidence also indicates that benefit design matters. Hospitalisation coverage may provide meaningful protection for major procedures while leaving households exposed to outpatient treatment, medicines, diagnostics, transportation, and chronic disease management. The Punjab evidence on non-communicable diseases makes this issue particularly visible because chronic conditions generate repeated costs over time rather than a single hospital episode. □cite□turn1search3□

For Punjab, the principal research opportunity is to examine how economic conditions, awareness, public-scheme eligibility, private insurance access, trust, and healthcare-provider choice jointly influence adoption and financial protection. Future studies should distinguish insurance possession from actual utilisation and should measure the residual financial burden after insurance payments.

9. RESEARCH GAPS AND FUTURE AGENDA

- Limited integrated public–private analysis: Most studies focus on public schemes or private insurance separately.
- Limited Punjab-specific evidence: National evidence cannot automatically be generalised to Punjab's distinct healthcare and insurance environment.
- Coverage versus effective protection: More studies should measure residual expenditure, claims experience, and catastrophic expenditure among insured households.
- Underdeveloped behavioural analysis: Awareness, trust, perceived value, satisfaction, and insurance literacy require stronger measurement.
- Insufficient attention to outpatient and chronic-care costs: These costs may remain important even when hospitalisation is insured.
- Limited longitudinal evidence: More research is needed on renewal, continued coverage, and long-term financial outcomes.
- Mixed coverage arrangements: Future studies should examine households with simultaneous access to public and private insurance.

10. LIMITATIONS

The evidence base is heterogeneous in study design, population, insurance programme, outcome definitions, and analytical methods; therefore, a pooled meta-analysis was not undertaken.

Many primary studies are cross-sectional and cannot establish causal relationships between insurance coverage and financial protection.

Definitions of out-of-pocket expenditure, catastrophic expenditure, insurance coverage, and financial protection vary across studies.

Evidence specifically focused on Punjab is smaller than the national evidence base.

Search and screening counts should be reported only from a preserved, reproducible database search and screening record; this manuscript intentionally does not invent such counts.

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CONCLUSION

This systematic review shows that health insurance adoption in India is shaped by economic, institutional, behavioural, and policy factors. Public health insurance has expanded access to healthcare, particularly for vulnerable populations, but evidence of consistent reductions in household financial burden remains mixed.

Private health insurance provides an additional mechanism of protection but is strongly influenced by affordability, income, awareness, trust, perceived value, and policy design. The evidence supports a complementary public–private approach rather than treating the two sectors as completely separate systems.

The central conclusion is that health insurance coverage should not be treated as equivalent to financial protection. Effective evaluation must consider whether households can obtain needed care, whether claims are successfully processed, whether services and medicines are actually covered, and whether households remain exposed to catastrophic or impoverishing expenditure.

Punjab requires further state-specific research that examines the combined effects of economic conditions, public schemes, private insurance, awareness, affordability, accessibility, trust, and provider choice on health insurance adoption and actual financial protection.

DECLARATIONS

Ethics approval

Not applicable. This review uses published literature and publicly available secondary sources and does not involve direct recruitment of human participants.

Consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

To be completed by the authors.

Funding

To be completed by the authors. Do not state that no funding was received unless this is factually correct.

Data availability

The evidence base consists of published studies and publicly available institutional sources. The final submission should provide the search strategy, screening record, extraction sheet, and quality-assessment file as supplementary material.

Protocol registration

To be completed by the authors. If the review was not prospectively registered, the manuscript should state that transparently rather than claiming registration.

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RECOMMENDED SUPPLEMENTARY FILES FOR SUBMISSION

- Supplementary File 1: Full database-specific search strategies with search dates.
- Supplementary File 2: Deduplicated search-results file.
- Supplementary File 3: Title/abstract and full-text screening form.
- Supplementary File 4: Data-extraction table for all included studies.
- Supplementary File 5: Study-quality or risk-of-bias assessments.
- Supplementary File 6: PRISMA 2020 flow diagram populated with the actual search and screening numbers.