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## **AWARENESS AND SCREENING PATTERNS OF CHRONIC KIDNEY DISEASE IN INDIA: A SECONDARY DATA APPROACH**

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<i>Keywords</i>	<i>Abstract</i>
<i>Chronic Kidney Disease, Awareness, Screening, Public Health, Health Education.</i>	<p>Chronic kidney disease is a rising health issue in India which is characterized by a rising prevalence, late diagnosis, and poor awareness among the people. The paper focuses on awareness and screening behaviours of CKD through a secondary data methodology based on previously published studies conducted in various parts of India. The results have shown that CKD has a considerable percentage of the adult population, with most of the cases being undiagnosed until late stages because of the non-symptomatic nature of the early disease and absence of routine screening procedures.</p> <p>The awareness level of all groups of the population, including the general population, high-risk groups, like patients with diabetes and hypertension, and even patients diagnosed with CKD, is low. The gaps in knowledge are especially observed in the area of knowledge of kidney functioning, risk factors, and early symptoms. Despite its feasibility and effectiveness,</p>



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	<p>screening initiatives are not commonly adopted and incorporated into primary healthcare systems. The new measures like point-of-care testing and digital health interventions have the potential to enhance early detection, particularly in low-resource environments.</p> <p>The article emphasizes the necessity of enhancing social awareness, encouraging early diagnosis, and incorporating CKD diagnosis into the current healthcare systems. Improving education and access to screening may be significant towards decreasing the burden of disease, enhancing early diagnosis, and the health outcome of those at risk of CKD.</p>
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## INTRODUCTION

Chronic kidney disease is a chronic and life-threatening illness that is a major cause of morbidity and mortality in the world, and even more so in low- and middle-income countries such as India. In India, CKD has become a significant social health issue because it has become a prevalence of between 13 and 17 percent in adults and is increasing with time (Talukdar et al., 2025; Singh et al., 2013). The increasing burden is also exacerbated by the fact that risk factors like diabetes and hypertension are the major causes of CKD development (Kumar et al., 2021).

Although there have been improvements in the diagnostic and treatment modalities, CKD in India is usually diagnosed at late stages. It has been indicated that early-stage CKD is mostly asymptomatic and is often diagnosed incidentally during medical examinations of other diseases instead of being detected during regular screening (Kumar et al., 2021; George et al., 2022). This late diagnosis poses a great risk of complications, medical expenses and death.

One of the most important issues that lead to late diagnosis is the low awareness among the general population and high-risk groups about CKD. Research has shown that the level of knowledge about the functioning of the kidneys, risk factors, and early symptoms is low, especially among people with lower educational and socioeconomic levels (Hussain et al., 2019; Bala et al., 2021). Disease management and prevention awareness is still insufficient even in diagnosed patients (Juhi et al., 2024). Moreover, the screening practices of India are not consistently incorporated into primary healthcare, which results in the lack of opportunities to diagnose and intervene at the earliest possible stage (Singh et al., 2013).

It is against these difficulties that the patterns of awareness and screening are critical in formulating effective public health strategies. Thus, this research employs secondary data to investigate the present situation of CKD awareness and screening in India with the purpose of detecting the existing gaps and informing specific interventions to address the early detection and better disease management.



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## OBJECTIVE

This research will focus on the main aim of investigating the awareness level and the trends of CKD screening in India through secondary data from available literature. The research aims to comprehend the levels of awareness of the various population groups, such as the general population, high-risk groups, such as patients with diabetes and hypertension, and already diagnosed CKD patients. It also seeks to examine the existing screening methods used in different environments and how effective they are in enhancing early detection. Moreover, the research aims to examine the connection between the awareness rates and screening attendance, as well as to determine the most significant gaps in knowledge, access, and practice that can be obstacles to timely diagnosis and prevention of CKD.

## METHODOLOGY

The research is based on a secondary data analysis method, which utilizes the already published data on CKD in India. Peer-reviewed journal articles, systematic reviews, observational studies, and reports published between 2013 and 2025 were identified as relevant data and included in the study based on the topic of CKD awareness, prevalence, and screening practices. The main sources were community-based research, hospital-based research, and large-scale screening programs like the Screening and Early Evaluation of Kidney Disease. The studies were selected on the basis of relevance to the research objectives, specifically those studies that focused on the level of awareness of various population groups and the screening strategies effectiveness.

Data obtained were examined through a descriptive and thematic approach, grouping the findings into broad themes, including awareness levels, population-specific trends, and screening practices. The comparative analysis was also conducted to determine differences in demographic groups and settings. No primary data gathering or statistical analysis was done, since the research is based solely on the secondary sources available. The methodology will allow a thorough synthesis of existing evidence to learn about the existing trends and gaps in CKD awareness and screening in India.

## DISCUSSION

The current research offers a synthesis of secondary data on CKD awareness and screening levels in India that show a major disparity between the level of disease burden and awareness among the population. Although CKD is projected to impact about 13-17% of the adult population, the level of awareness is still disproportionately low among all demographic groups (Talukdar et al., 2025; Singh et al., 2013). This gap is a direct cause of late diagnosis and low health outcomes because the majority of the cases are diagnosed at an advanced stage instead of being screened early (Kumar et al., 2021).

One of the key findings of the research is that the knowledge about CKD is always deficient in all groups of the population, such as the general population, high-risk groups, and even diagnosed



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patients. According to community-based research, there is a lack of awareness about the functioning of kidneys, symptoms, and diagnostic tests (Bala et al., 2021; Sandhi, 2021). Even though there is some knowledge of risk factors like diabetes and hypertension, it is still imperfect and inadequate to encourage preventive behaviour. The level of awareness among people with type 2 diabetes is especially low, and only a small portion of them is aware of these conditions as significant risk factors of CKD (Hussain et al., 2019). This is alarming because these people are a high-risk group that may be a good target of awareness and screening interventions.

The results also highlight how socioeconomic and educational factors impact on CKD awareness. It is always observed that more educated and socioeconomically advantaged people are more aware of the disease, and people in rural, tribal, and low-literacy areas have much lower awareness (Hussain et al., 2019; Juhi et al., 2024). Such populations have a high dependency on healthcare providers in the provision of information, which restricts self-management and proactive health-seeking behaviour. This highlights the necessity of culturally suitable and accessible health education measures that are specific to the various population groups.

One of the key findings is the disconnect between knowledge and behaviour, especially between caregivers and high-risk people. Although these groups are not well educated, their attitudes and practices toward disease prevention tend to be relatively positive (Sahu et al., 2022; Sharma et al., 2023). This indicates that a change in health behaviour such as participation in screening and adherence to preventive measures can be made significant through awareness enhancement.

As far as screening practices are concerned, the study demonstrates that systematic CKD screening is not a common practice in India yet. The effectiveness of screening with simple blood and urine tests has been shown through large-scale programs, like the Screening and Early Evaluation of Kidney Disease, which identified a high number of undiagnosed cases (Singh et al., 2013). But these programs are small in size and not always applied all over the country. Therefore, the majority of CKD is diagnosed accidentally in the course of other medical assessments, and not proactively.

New findings underscore the promise of point-of-care screening models and digital health interventions in enhancing early detection. Research shows that inexpensive screening instruments with minimal clinical variables, including age, body mass index, and urine dipstick testing, may be useful in detecting people in danger of CKD (Bradshaw et al., 2019). Likewise, pilot programs that incorporate digital health technologies have shown increased screening efficiency and patient management, but there is a low awareness level among participants (Chinta et al., 2025). The innovations are especially applicable in low-resource environments, where there is a lack of access to modern diagnostic facilities.

The second acute problem that was found in this research is the lack of awareness of diagnosed CKD patients, particularly in rural and underserved areas. Numerous patients do not possess sufficient



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information about managing the disease and are largely dependent on healthcare professionals (Juhi et al., 2024). Poor adherence to treatment, rapid disease progression, and complications are some of the consequences of this lack of self-management awareness. It also indicates the absence of patient education in clinical environments, and structured counselling and education programs should be included in the standard CKD management.

Community-based interventions, including rural screening camps and health education programs, have been promising in enhancing awareness and detection of undiagnosed cases. These programs incorporate education and available diagnostic services, which make them effective in addressing underserved communities. Their influence is, however, often restricted by their local and short-lived nature. Their sustainability and coverage can be improved by expanding and incorporating such programs into primary healthcare systems.

In general, the results indicate a vicious circle between poor screening, low awareness, and late diagnosis. Low awareness diminishes the chances of people seeking screening, and lack of routine screening further limits the chances of early diagnosis and education. To end this cycle, a multifaceted strategy involving educating the population about their health, incorporating screening into primary care, and policy intervention is needed.

Policy-wise, CKD needs to be given priority in the national health programs and be harmonized with other non-communicable disease policies. The inclusion of CKD screening into the current programs aimed at diabetes and hypertension may help to increase the rates of early detection (George et al., 2022). Moreover, the use of community health workers, mass media campaigns, and digital platforms can be used to increase awareness on a population level.

To sum up, the discussion highlights that CKD is a considerable and increasing health burden in India, which is aggravated by the lack of awareness and poor screening behaviours. To overcome these issues, it is important to engage the efforts of healthcare systems, communities, and policy frameworks to ensure early detection, enhance patient education, and eventually alleviate the burden of CKD.

## CONCLUSION AND RECOMMENDATION

The secondary data analysis shows that CKD is an increasing public health concern in India, as the prevalence rates of 13-17% and an increasing trend over the last several years (Talukdar et al., 2025; Singh et al., 2013). Nevertheless, despite such a significant load, the level of awareness is always low in all groups of the population, including the general population, high-risk groups (people with diabetes and hypertension), and even patients diagnosed with CKD (Bala et al., 2021; Hussain et al., 2019; Juhi et al., 2024). The percentage of those who do not have the basic knowledge about kidney functioning, risk factors, and early symptoms is significant, and it leads to the late diagnosis and bad outcomes of the disease. In India, screening is not systematically incorporated into the everyday



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healthcare system and is mostly identified incidentally instead of being proactively screened (Kumar et al., 2021). Even though large-scale programs like the Screening and Early Evaluation of Kidney Disease and new point-of-care and digital health screening models have proven to be feasible and effective in detecting undiagnosed cases (Singh et al., 2013; Bradshaw et al., 2019; Chinta et al., 2025), they are still under the scope of implementation.

On the basis of these results, it is suggested that CKD awareness should be enhanced with specific health education initiatives, especially in the high-risk and underserved groups. CKD screening should be included in primary healthcare and linked to the current non-communicable disease programs, in particular, diabetes and hypertension. Digital health technologies and the use of cost-effective point-of-care screening tools should be increased to enhance early detection in low-resource settings. Moreover, patient education and counselling ought to be integrated into the regular clinical practice to improve self-management among CKD patients. Building community-based outreach interventions and policy-level endorsement of CKD prevention and early diagnosis are vital in decreasing the total disease burden in India.

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The writers affirm that they have no connections to, or engagement with, any group or body that provides financial or non-financial assistance for the topics or resources covered in this manuscript.

#### **CONFLICTS OF INTEREST**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

#### **PLAGIARISM POLICY**

All authors declare that any kind of violation of plagiarism, copyright and ethical matters will take care by all authors. Journal and editors are not liable for aforesaid matters.

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