Bridging Gaps in Patient Education: A Systematic Review of Healthcare Interventions Across Specialties

POSTER NO. 35

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BACKGROUND

- Patient education is vital for improved health outcomes; however, healthcare professionals (HCPs) face challenges in delivering personalised information due to limited time, patient's diverse literacy levels and rapidly changing medical knowledge[1,2]
- Broadcasting health campaigns in Southeast Asia increased COVID-19 vaccine uptake by 20%, while peer education programs in sub-Saharan Africa boosted antiretroviral therapy uptake by 35% in one year highlighting the key role of patient education[3,4]
- Regional differences in patient education arise from variations in language, cultural norms, and socioeconomic factors. Tailoring materials to local languages, addressing cultural sensitivities and leveraging accessible tools such as digital platforms, broadcasting channels and community meetings can bridge these gaps and enhance equitable health literacy[5]
- To our knowledge, this is the first systematic review evaluating patient education interventions across various healthcare specialties, with a focus on insights from the Asia-pacific region

AIMS AND OBJECTIVES

- To analyse characteristics of patient education, delivery methods and challenges associated with different education methods

METHODS

- A comprehensive literature search was conducted across PUBMED, Cochrane, and Google Scholar (manual search), using specific search terms to identify challenges faced by HCPs in patient education across various diseases
- We included only publications in English language
- The search was limited to studies published between 2014 –2024
- The PICO framework was applied to refine the search and ensure relevant results **(Table 1)**
- Search string: ("Patients") OR ("healthcare professionals" OR "HCPs" OR "doctors" OR "nurses" OR "medical staff") AND ("Patient education" OR "health education" OR "Patient advocacy groups") AND ("benefits") AND ("challenges" OR "barriers" OR "obstacles")
- Search strategy was guided by PRISMA statement[6]
- 3-stage selection process conducted by two reviewers

Table 1 : PICO framework for literature search

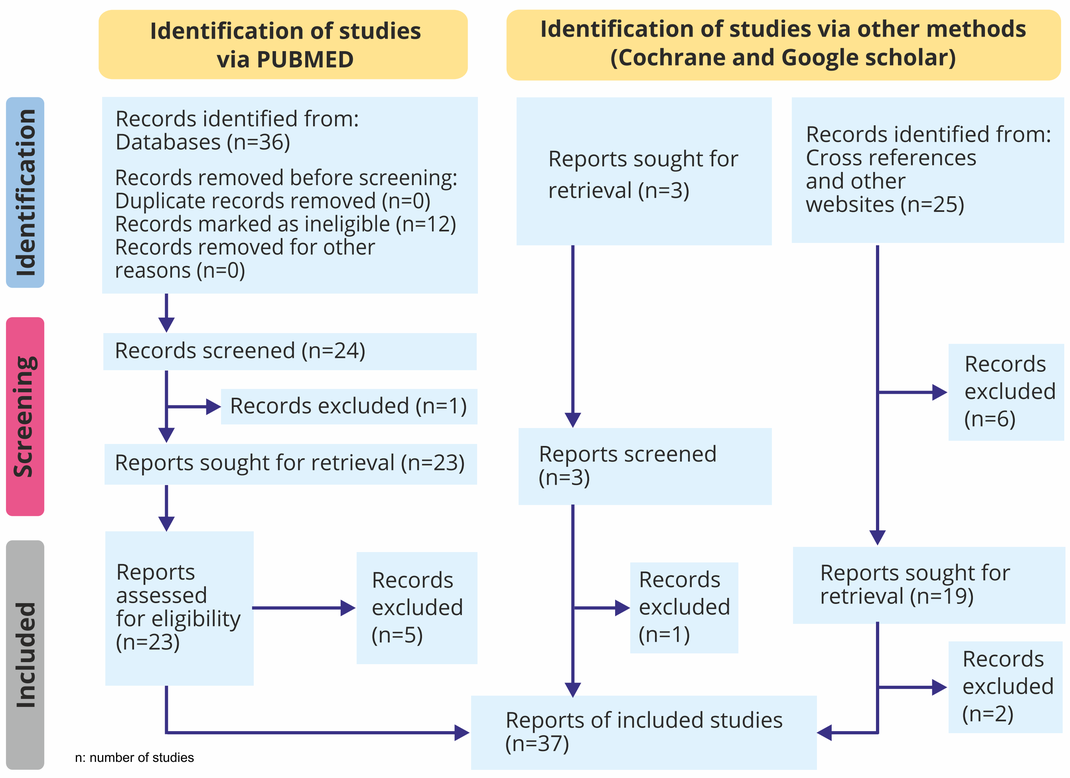
Component	Inclusion criteria	Exclusion criteria
Population	Adult patients (≥18 years)	Patients <18 years
Intervention	Patient education	Not applicable
Comparator	No patient education	Not applicable
Outcomes	Outcomes related to patient education benefits and challenges faced by HCPs	Not applicable

HCPs: Healthcare professionals

RESULTS

- A total of 64 studies were eligible for full-text screening, of which 37 studies were included in the final data extraction **(Figure 1)**

Figure 1: PRISMA flow chart of study selection process



Geographical Distribution

- Studies reported were mainly conducted in Western countries (n=25 studies), with limited representation from Asia-Pacific and Eastern Africa (n=12), highlighting regional healthcare system differences

Figure 2: Distribution of studies by region



CONCLUSIONS

- **Tailored, patient-centric education programs and ongoing support are essential for bridging the gap between evidence-based education and healthcare outcomes**
- **Improved infrastructure and adequate resources are needed to address knowledge gaps and system-level challenges in patient education**
- **Leveraging technology to create interactive experiences for improvement of patient engagement**
- **Collaboration between healthcare professionals and medical communications experts is crucial for optimising patient education and health outcomes**

Delivery methods

- Patient education was predominantly delivered by nurses or community health workers
- Among the various delivery methods, internet -based interventions (n=15) were the most commonly used, followed by telephonic (n=11) and face-to-face sessions (n=11) **(Figure 3)**

Figure 3 : Delivery methods

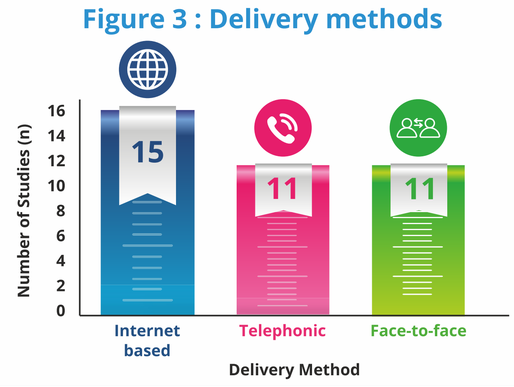
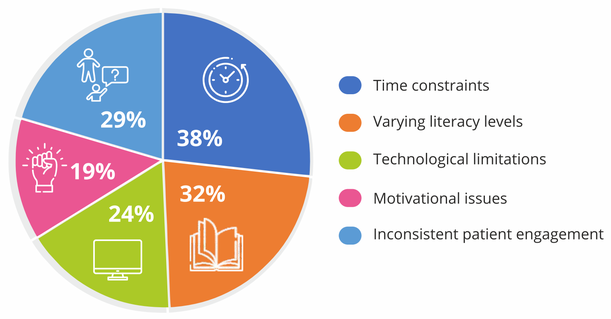


Figure 4 : Key barriers



Key barriers identified

The primary challenges included time constraints (38%), patient literacy challenges (32%), inconsistent engagement (29%), technological limitations (24%), and motivational issues (19%) **(Figure 4)**

Disease-specific challenges

- Addressing disease-specific challenges allows us to focus on conditions with higher prevalence, helping identify education barriers faced by larger patient populations
- The **Table 2** outlines the challenges and interventions across various diseases, illustrating the importance of targeted patient education

Table 2 : Disease-specific barriers and interventions in patient education

Disease	Barrier	Intervention
Oncology	– Complexity of information due to treatment regimens and side effects – Emotional distress limiting patient receptiveness to education	– Development of digital decision aids and personalized counselling sessions – Inclusion of caregivers in education programs to ensure message retention
Cardiovascular Diseases	– Low health literacy affecting adherence to lifestyle changes and medication – Limited time for patient education in busy clinical settings	– Use of telemedicine platforms for continuous education – Interactive mobile apps promoting self-management behaviors like exercise and dietary modifications
Neurology	– Progressive nature of diseases like dementia affecting comprehension over time – Stigma and lack of community awareness impacting education delivery	– Longitudinal education programs tailored to disease stages – Community workshops to destigmatize neurological conditions
Rare Diseases	– Limited educational resources due to the rarity of conditions – Difficulty in addressing psychosocial impacts for patients and families	– Establishment of online support groups and resource hubs – Multidisciplinary team involvement for holistic education
Infectious Diseases	– Misinformation about prevention and treatment (e.g., vaccination and antimicrobial use) – Cultural and language barriers in diverse patient populations	– Community-based health campaigns targeting specific demographics – Visual and multilingual educational materials to enhance understanding

Limitations

- Limited representation of studies from the Asia Pacific, which may affect the generalisability of findings
- Exclusion of non-English literature may have resulted in the omission of relevant studies from diverse linguistic contexts
- The focus on studies published between 2014-2024 may overlook earlier research and long-term trends

Future Avenues

- The role of ongoing support systems and infrastructure improvements in enhancing the effectiveness of patient education interventions warrants additional investigation
- Addressing educational and system-level barriers is crucial for optimising outcomes across diverse healthcare settings, with a focus on tailored, patient-centric approaches to improve engagement and health literacy
- Future studies could explore the long-term impacts of patient education interventions on health behaviors and outcomes
- There is a significant need for an increased volume of research focusing on common and chronic diseases in the Asia-Pacific region, given the current scarcity of publications in this area

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Acknowledgments: Authors would like to thank Saurabh Shukla, Manasvi Joshi for editorial support, Mukesh Dorisetty for design support

Disclosure: RP, AS, DM and AK are employees of Enago Life Sciences

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