

Telemedicine Adoption for Dementia Care in Nigeria: A Scoping Review

Abiodun Adedeji, Huseyin Dogan, Festus Adedoyin, Michelle Heward

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Telemedicine Adoption for Dementia Care in Nigeria: A Scoping Review

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Abstract

Background: Dementia is a global health challenge, particularly in Nigeria, where limited healthcare infrastructure, cultural stigmas, and poor awareness hinder its care. Telemedicine can improve patient outcomes, increase healthcare access, and support caregivers. However, challenges like poor internet connectivity, digital literacy, and lack of integrated strategies hinder its adoption, particularly in rural areas

Objective: This study evaluates the adoption of telemedicine for dementia care in Nigeria, examining effectiveness in improving patient outcomes, reducing caregiver burden, and enhancing accessibility. It also identifies infrastructural and cultural barriers, proposing strategies for a sustainable telemedicine framework tailored to Nigeria's sociocultural context.

Methods: A scoping review guided by the (PRISMA) framework used databases like PubMed, Scopus, CINAHL, PsycINFO, and Google Scholar. Search terms included "telemedicine", "dementia care", "Nigeria", "digital health", "telehealth interventions", "video consultations", and "remote monitoring tools". Out of 640 results, 23 articles were selected. Issues like poor digital literacy, internet access, and lack of a cohesive policy were identified.

Results: Out of 23 studies, 10 (43.5%) focused on m(Health) applications, 8 (34.8%) on video consultations, and 5 (21.7%) on remote monitoring tools. These interventions improved caregiver support, medication adherence, and access to specialist care but faced challenges in rural settings.

Conclusions: There is an urgent need for an all-inclusive policy in Nigeria that integrates technological solutions into existing dementia care frameworks. mHealth apps, video consultations, and remote monitoring tools show potential for enhancing healthcare access, improving outcomes, and reducing caregiver burden.

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Original Manuscript

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Conclusions: There is an urgent need for an all-inclusive policy in Nigeria that integrates technological solutions into existing dementia care frameworks. mHealth apps, video consultations, and remote monitoring tools show potential for enhancing healthcare access, improving outcomes, and reducing caregiver burden.

Keywords: Telemedicine; dementia care; Nigeria; mHealth; video consultations; remote monitoring; caregiver support; healthcare accessibility; national telemedicine strategy.

Introduction

Dementia is a neurodegenerative disease characterized by progressive impairment in memory,

cognitive function, and impaired daily living skills, posing a major global health challenges [1]. According to the World Health Organization, over 55 million people are affected worldwide, with nearly 10 million new cases annually. This number is projected to reach 139 million by 2050 [1]. While the social and healthcare burden of dementia has gained global attention, its impact in culturally diverse regions like Nigeria remains underexplored.

Nigeria, Africa's most populous country, has over 150 million ethnic groups and languages, yet its adult literacy rate is only 62%, urban-rural disparities [2]. The education system faces diglossia, with English contrasts with indigenous languages, affecting healthcare communication and dementia care, with early-onset dementias being rare but worsening faster [2]. Clinical presentations of dementia in Nigeria differ from those in developed countries due to cultural interpretations of aging conditions [3]. Behavioral and psychological symptoms are poorly recognized and underreported due to stigma and lack of awareness in rural areas.



Geographical map

highlighting Northeastern Nigeria region for Telemedicine dementia care.

Digital literacy worsens these issues, mobile phone adoption has increased in Nigeria, with over 70% of the populace owning at least one device. [4]. This highlights the needs to address awareness gaps for better telemedicine use in dementia care.

The article evaluates Nigeria's telemedicine adoption for dementia care, examining sociocultural, linguistic, and technological contexts, while identifying gaps to improve outcomes [5].

The Role of Telemedicine in Dementia Care:

Telemedicine enhances dementia care in Nigeria by providing remote clinical services. According to Louis [6] this system includes diagnosis and consultation via mobile phones and computers. [7].

Telemedicine allows patients and caregivers to connect with healthcare professionals, reducing psychological impacts of distancing [8]. During the pandemic, remote consultations, monitoring, and cognitive assessments eased isolation burdens while strengthening relationships with families and healthcare professionals, improving well-being and identify [9][10].

Telemedicine use in Nigeria, increased during COVID-19 highlighting the need for remote care as face-to-face became limited [11]. Restrictions worsened social isolation and reduced healthcare access for individuals living with dementia and caregivers [12]. Telemedicine supports diagnosis, caregiver assistance, and community education [10]. In Nigeria, telemedicine provides a viable means to improve dementia care through remote services using computers and mobile phones [13] [14].

Dementia remains a global health concern [15]. increased awareness has emphasized caregiver support, with telemedicine emerging as a key intervention COVID-19 [15][16].

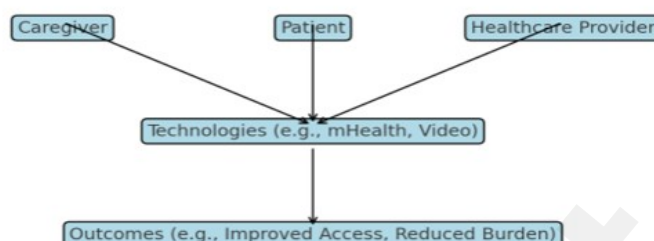
This review discusses telemedicine interventions for dementia care in Nigeria, focusing on effectiveness and challenges it also aims to guide future telemedicine development in resource-poor-settings by assessing current usage [17]. Active interventions like videoconferencing, remote assessment, and mobile apps are prioritized over passive monitoring over passive monitoring. According to [18], research highlights issues like poor internet connectivity and technological inequality. Despite these issues, telemedicine shows promising potential for improving dementia care in Nigeria justifies further studies [19]

Conceptual Framework

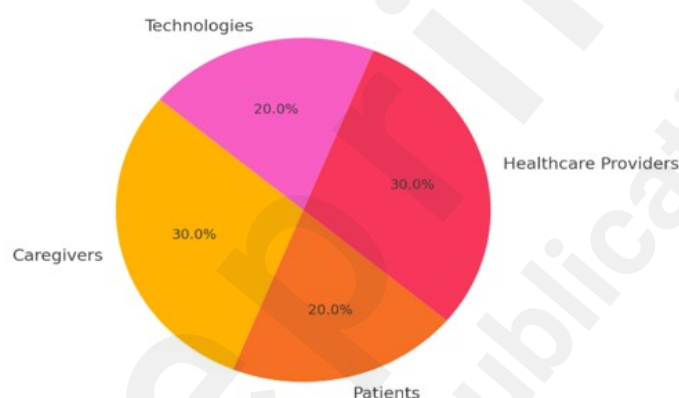
The conceptual framework shows interactions between caregivers, healthcare professionals, individual living with dementia and technologies to enhance care delivery [13]. mHealth apps video consultations and monitoring devices improve access and integrates stakeholders into a unified system [20]. Caregivers use telemedicine tools for management and consultations, while healthcare providers handle diagnosis, treatment, and follow-ups, overcoming geographical barriers [21]. Technologies support caregivers in planning routines and seeking advice [22]. Video consultations address improve specialist access, and monitoring systems track health for timely intervention [23]. This framework improves healthcare delivery, reduced caregiver burden, and an improved quality of [24]. helping stakeholders identify areas needing improvement.

Visual Aid

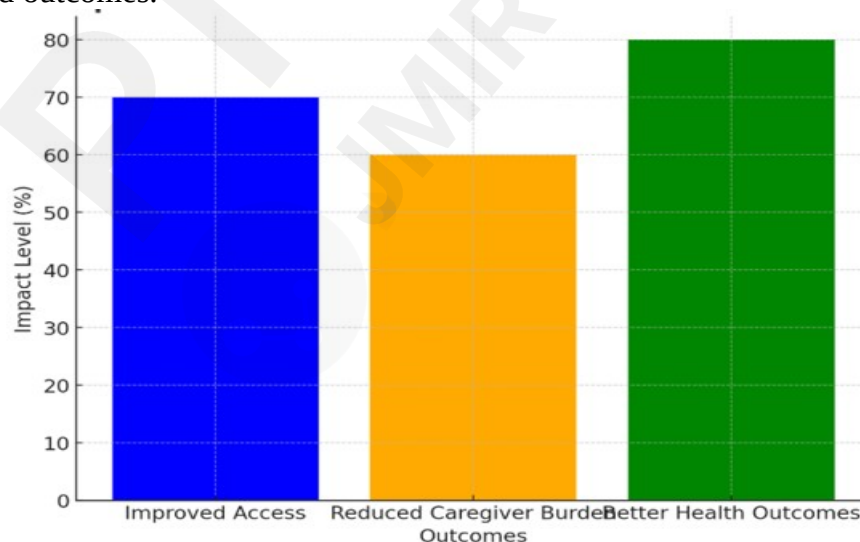
A flowchart is provided that represents these relationships and, thus, the role of the stakeholders and the flow of interaction through telemedicine technologies resulting in better health outcomes.



The figure shows interactions between patients, caregivers, professionals, and telemedicine, improving access, reducing burden, and enhancing outcomes.



The figure shows key stakeholders role in telemedicine adoption, their interactions and impact on care delivery and outcomes.



This figure shows the impact of telemedicine interventions on dementia care outcomes, including reducing caregiver burden, and improved quality of life.

Digital Literacy

Digital literacy is essential for telemedicine adoption, especially in resource-poor countries like Nigeria [25]. It remains a challenge in urban and rural areas, [26]. Mobile phone penetration is 70%, but rural digital literacy is about 30% compared to 62% in urban areas highlighting a digital gap, affecting telemedicine [27]. Urban caregivers benefit from better infrastructure, while rural caregivers face limited access, education, and training [28]. Low literacy in rural areas hinders using telemedicine tools like mHealth or video consultations for specialist care [29][30].

Challenges of Telemedicine Adoption in Nigeria:

Despite the potential benefits, barriers hinder telemedicine use in Nigeria especially in rural areas [31]. Technological challenges include infrastructure, internet services, and digital literacy, while non-technological ones involve ethical concerns and funding issues [32].

This scoping review examines telemedicine use in dementia care in Nigeria, highlighting interventions, challenges, and impact on care quality. It also evaluates telemedicine adoption reviews global evidence to identify best practices, barriers, and facilitators. Findings from other regions will be analysed to propose innovative strategies addressing infrastructural, cultural, and policy challenges in Nigeria.

Methodology

This study uses a scoping review methodology, guided by the PRISMA framework, to assess telemedicine adoption for dementia care in Nigeria. The design identifies existing evidence, research gaps, and key barriers and facilitators. This approach is ethically sound and includes diverse data sources and study designs.

Justification for Time Frame:

This review examines the literature from 2010 to 2024, focusing on recent developments in telemedicine technologies and healthcare policies in Nigeria. It aims to understand the potential of telemedicine in dementia care and identify areas for further exploration

Table 1 outlines the inclusion and exclusion criteria used for selecting studies in the review. The criteria include the study population, intervention type, study design and publication timeline. The table above highlights exclusion criteria, such as studies focusing on diseases other than dementia or those not involving telemedicine interventions.

Inclusion criteria and exclusion criteria for the scoping review

Type of criteria	Inclusion criteria	Exclusion criteria
Population	Individual living with dementia, caregiver or healthcare professionals	Other diseases than dementia
Interventions	Studies that involve telemedicine interventions or telehealth (e.g. mobile health application, video consultation and remote monitoring)	Studies that do not involve telemedicine interventions
Study design	Studies that include Qualitative, quantitative and mixed designs	Studies that are purely theoretical
Outcomes measure	The Effectiveness of telemedicine on dementia care, focused on outcomes such as, caregiver burden, quality of life, healthcare assesses	No outcomes related to the impact of telemedicine on dementia care
Publication date	Studied published from 2010-2024	Studies published before 2010
Language	Studies published in English	Studies published in other language than English

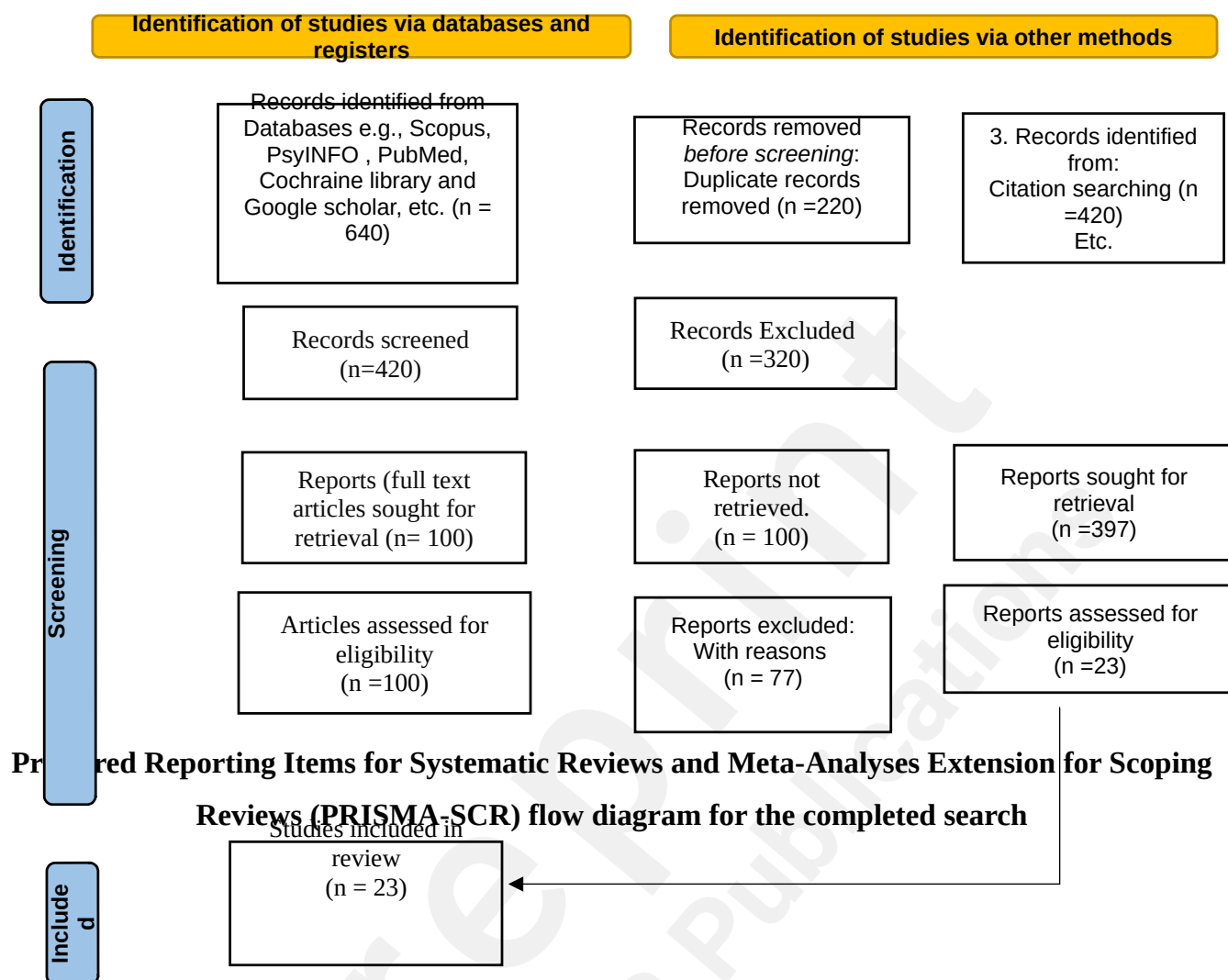
Search strategy:

A thorough review of databases was conducted PRISMA framework for literature reviews [33], Searches were to be done in PubMed, Scopus, CINAHL, Cochrane library, and Google Scholar databases. Search item included telemedicine, dementia care and individuals living with dementia, records published between 2010 and 2024 addressed intervention in Nigeria and sub-Saharan African countries.

Data Extraction and Synthesis:

The study examines telemedicine adoption in dementia care in Nigeria, focusing on study design, demographics, interventions, outcomes, and implementation challenges. It identifies three themes: intervention types, adoption barriers, and facilitators. The aim is to outline existing evidence and identify areas for further research, not to assess study quality.





Results

A database search (PubMed, Scopus, Cochrane, Google Scholar, PsycINFO) returned 640 articles, after removing duplicates 420 remained, screening titles and abstracts excluded 380, leaving 40 for full text review. Finally, 23 articles were included in the review.

Characteristics of Included Studies:

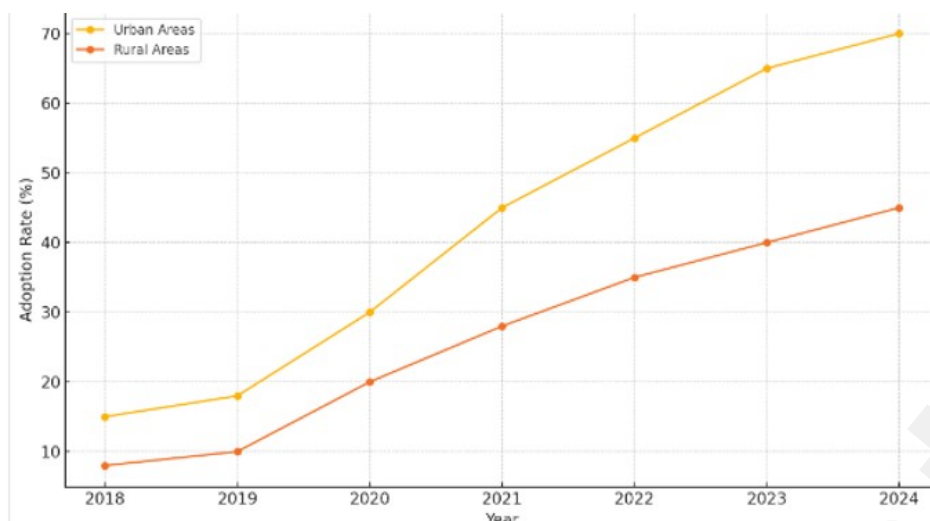
In various regions **the primary** characteristics of the studies are outlined in Table 2. A total of 23 studies were conducted mainly in Nigeria (n= 8), followed by USA (n=5), the UK (n=5), Hongkong (n=2), Greece (n=1), Germany (n=1), and Spain (n=1). Study settings varied, individual's homes (n=6), healthcare institutions (n=10) and mixed environments (n=7).

Telemedicine intervention range from remote monitoring, mobile health applications and video consultations, reflecting differences in healthcare infrastructure across urban and rural Nigeria, the intervention designs were diverse, highlighting the varied nature of telemedicine adoption.

Three studies were randomized controlled trials (RCTs) [34-36]. Five studies used quantitative methods, including observational and pretest-post-test designs [6, 37-40]. Six studies employed qualitative methods focusing on interviews and observational data to explore feasibility, acceptability, and implementation challenges [13, 41-45]. Nine studies used mixed methods, combining quantitative (e.g. surveys) and qualitative (e.g. interviews) data for comprehensive evaluation [44,45,47,40,11,36,9].

Sample sizes varied, the largest study involving 250 participants [46] and the smallest only 11 participants [48]. Three studies reported sample sizes over 100 participants [37,39,46], focusing on qualitative insights and feasibility.

outcome measure varied, caregiver burden was assessed in six studies using self-reported questionnaires [11,49,39,6,46,45]. Four studies used standardized scales to measure quality of life among individuals living with dementia, such as the QoL-AD scale [34,38,39,6]. Studies in rural areas often identified internet access and digital literacy as critical secondary outcomes [42,6]. Two studies addressed behavioural and psychological outcomes, highlighting reductions in agitation and caregiver stress [44,45].



The projected telemedicine growth in Nigeria from (2018-2024) shows increased use of mHealth apps, video consultations, and remote monitoring tools across urban and rural areas.

Studies show mHealth applications are widely used in Nigeria for telemedicine, supporting caregivers in managing care routines monitoring individuals living with dementia's health [50].

Common barriers include poor internet connectivity [51], high-cost platforms, devices and mobile data for healthcare professionals and caregivers [52]. High mobile phone penetration supports mHealth adoption, particularly in urban areas [53]. This study highlights challenges and benefits of telemedicine for dementia care in Nigeria, revealing gaps in infrastructure and cultural adaptation. Table 2 summarizes the studies, detailing locations, study design, sample sizes, interventions, and outcomes.

Characteristics of included studies

S/N	Author, Date	Country published	Method	Types of telemedicine interventions	Sample size (n=)	Measures	Outcome measures	Type of Mobile Health App	Modality of Intervention
1	[49]	Nigeria	Semi-structured interviews	Telemedicine adoption in hospitals	7 clinicians	Implementation issues & adoption	Improved medication adherence, improved caregivers' satisfaction	Internet based	Synchronous
2	[11]	Nigeria	Mixed methods	General telemedicine remote monitoring	-	Barriers & facilitators of telemedicine	Need for national strategy	Internet-based	Asynchronous
3	[37]	Nigeria	(Qualitative) Case Study	Tele psychiatry	-	Feasibility in rural settings	Highlighted infrastructure and literacy barriers	Internet-based	Synchronous
4	[13]	Greece	Narrative review	Remote monitoring	-	Feasibility & care efficiency	Improved quality of care reduced travel burden	Internet based	Asynchronous & Synchronous
6	[46]	USA	Mixed Methods (Survey interviews)	Care planning, video consultations	250	Cognitive status, care planning	Improved dementia care planning and QoL	Internet-based	Synchronous

7	[41]	Nigeria	Qualitative Study	mHealth apps for caregiver support	30	Caregiver well-being, stress reduction	Improved caregiver support, reduced burden	Smartphone based	Synchronous
8	[43]	Nigeria	Qualitative review	Telepsychiatry, caregiver support platforms	-	Mental health support effectiveness	Increased access to mental health care	Internet-based	Asynchronous
9	[52]	USA	Systematic review	Telemedicine platforms	-	Cognitive function (MoCA), QoL (QoL-AD)	Reduced caregiver burden, improved cognitive scores	Internet-based	Synchronous
11		Germany	Scoping review	mHealth applications	-	Adoption barriers, caregiver stress	High mobile penetration but limited rural uptake	Smart phone based	Asynchronous
12	[9]	Nigeria	Mixed methods	Video consultations	-	Pandemic related care disruption	Sustained access during COVID-19 reduced isolation	Internet-based	Synchronous
13	[6]	Nigeria	Quantitative	Remote monitoring, mHealth	-	Caregiver satisfaction, system usability	Improved usability, lower stress	Smartphone based	Asynchronous

14	[14]	Nigeria	Case report	Telehealth for rural dementia care	-	Infrastructure barriers	Need for policy framework, integration challenges	Internet-based	Synchronous & Asynchronous
15	[34]	Hong Kong	Quantitative	Video conferencing for dementia care	60	Cognitive functioning (MoCA), quality of life (QoL-AD), caregiver burden (ZBI)	Improved resilience, better cognitive scores, reduced caregiver burden	Internet-based	Synchronous
16	[54]	USA	Observational study	Medication adherence through mHealth	120	Compliance metrics	Improved medication adherence, socialization	Smart phone based	Asynchronous
17	[7]	UK	Mixed methods	Video consultations	80	Caregiver feedback	Enhanced caregivers experience access	Internet-based	Synchronous
18	[38]	Italy	Quantitative	Cognitive training through telehealth	90	QoL, cognitive improvement	Improved cognitive function, QoL	Internet-based	Asynchronous
19	[39]	Hongkong	Mixed methods	mHealth video telehealth	70	Caregiver burden, QoL metrics	Reduced stress, higher QoL for caregivers	Smartphone based	Synchronous

20	[48]	USA	Cross Sectional	Video telehealth for veterans	24	Semi-structured interviews	Reduced travel burden for caregivers	Internet-based	Synchronous
21	[1]	Nigeria	Review	Remote consultation, video teleconferencing	-	Cognitive tests, MMSE, HVLT-R, letter fluency	Feasibility of telemedicine for dementia diagnosis and follow-up	Internet-based	Synchronous
22	[49]	Nigeria	Qualitative (In-depth semi-structured interviews)	Mobile phone-based image exchange, remote consultations	8	Clinician perspectives on ease of use, technology availability, organizational support	Adoption framework for telemedicine in Nigeria, clinician readiness, barriers like poor internet and legal concerns	Smartphone-based	Synchronous
24	[55]	Nigeria	Observational study	Remote monitoring tools	50	Health metrics cognitive tracking	Earlier interventions, improved care outcomes	Internet based	Asynchronous
25	[44]	USA	Quantitative	Wearable sensors for dementia monitoring	50	Daily activity tracking, early detection	Improved cognitive monitoring, timely interventions	Wearable sensors	Asynchronous

26	[45]	USA	Qualitative	Remote monitoring tools	-	Caregiver perspectives usability	Increased feasibility, caregiver satisfaction	Internet based	Asynchronous
27	[47]	USA	Qualitative	mHealth for symptoms tracking	40	Behavioural symptoms, medication adherence	Improved monitoring, reduced hospital visits	Smartphone based	Asynchronous & Synchronous

Types of Intervention

Studies (n = 23) are grouped according to the type of telemedicine intervention, including mobile health applications (mHealth, n=10), **video-based interventions** (n = 8), and **remote monitoring interventions** tools (n = 5).

1. m-Health based telemedicine interventions:

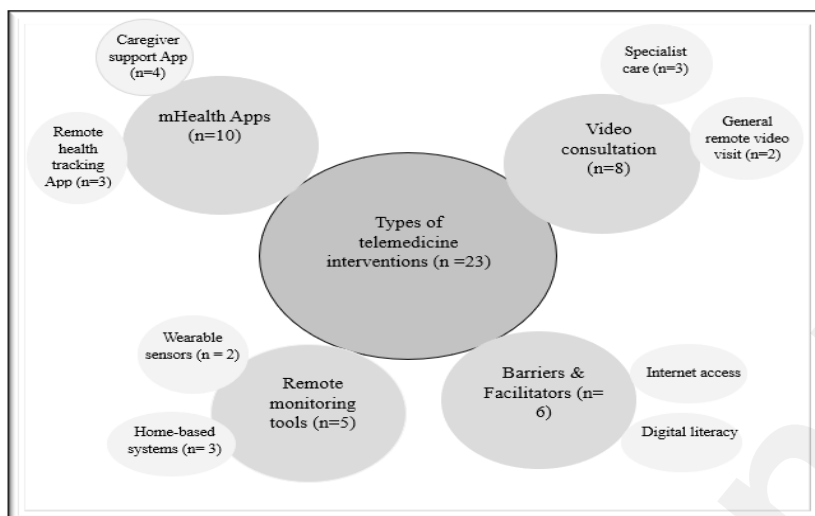
Ten studies focused on mHealth interventions for caregivers or monitoring individuals with dementia. Four studies highlighted apps for communication, medication reminders, and stress management [41,39]. Three studies examined health tracking apps monitoring cognitive decline and behaviour [47,40].

Video consultations

Eight studies assessed video consultation connecting individuals with dementia and their caregivers to healthcare professionals. improving specialist care coordination [34,36,37]. Video consultations were most effective for monitoring and assessments in urban areas [46,9]. Arlebrant [56], reported that video consultations significantly reduced the travel burdens for caregivers and improved access to specialist, though their effectiveness in rural areas was limited by internet challenges.

2. Remote monitoring tools

Five studies examined remote monitoring tools, like wearable sensors and home-based systems, for assessing cognitive function, activity, and sleep patterns [44,45]. However, digital literacy and device costs hinder adoption, especially in rural areas [6]. Figure 7 categorizes telemedicine interventions into mHealth applications, video-based interventions, and remote monitoring tools, showing their distribution and effectiveness across Nigeria.



Illustrative map of telemedicine intervention groups.

Mobile Health Applications (mHealth)

Ten studies focused on mHealth apps supporting caregivers and monitoring of individual living with dementia through mobile technology.

Caregiver Support Apps:

Four studies examined apps aiding caregivers by providing communication and reminders. [41] reported improved management and reduced stress, while [37] noted enhanced caregiver well-being. Apps effectively managed caregiver burnout and supported telehealth. [11] highlighted a national strategy to bridge gaps between patients and caregivers.

Remote Health Tracking Apps:

Three studies [57,47,41] addressed mHealth apps monitoring cognitive decline and quality of life [47]. Evaluated medication adherence and cognitive tracking while [58] showed reduced hospital visits [54] noted improved medication adherence and socialization, while [40] highlighted effective symptom tracking and reduced emergency visits.

Video Based Interventions:

Five studies focused on video consultations for remote care, including specialist consultations (n=3) and general visits (n=2).

Teleconsultations for Specialist Care:

Three studies [48,13,7] found video consultation improved care ccess without in-person-

visits. Ruggiero [59] reported improved quality of life and cognitive scores, especially in Urban areas. Chi & Demis [60], noted reduced stress and better patient outcomes through checkups.

General Remote Video Visits:

Two studies showed routine video consultations addressed caregiver concerns but with mixed results [46]. Mulli [1] noted poor connectivity limits adoption in rural areas, while [34] reported reduced caregiver burden from routine care use.

Remote Monitoring tools:

Four studies [37,13,11,46] examined home-based and wearable sensors. Cote [44] evaluated wearable sensors tracking daily activities, enabling early interventions. [45] highlighted monitoring devices tracking behavioural changes and improving care.

Home-based systems

Home systems monitored daily activities, cognitive health, and behaviours, Cote [44] noted early detection of health declines, while [45] reported reduced caregiver workload, particularly useful in rural areas.

Wearable Sensors

Wearable sensors improved health tracking accuracy and interventions. [61] noted effective monitoring, while Louis [6] emphasized cost challenges but potential for scaling in resource poor settings.

Internet access

Rezigalla [37] and Ojeahere [43] discussed the challenges posed by limited internet connectivity in rural areas, which hindered the implementation of telemedicine tools. These studies suggested infrastructure improvements as a critical step to expanding telemedicine access in such regions.

Digital literacy

Digital literacy was a major barrier noted by [49] and [11]. Many caregivers and healthcare providers lacked the skills to use telemedicine platforms effectively, reducing their uptake. The studies recommended comprehensive training to improve digital competency and telemedicine effectiveness.



Illustrative image of telemedicine technology.

This visual can support the “Telemedicine interventions” by showing a healthcare professionals conducting a video consultation, with remote monitoring devices in the background representing discussed technology.

Challenges and feasibility

Several studies highlighted despite remote monitoring benefits. [6] reported improvements in urban care management, but clinician readiness, poor internet, device costs, and legal concerns hindered rural adoption. Similar barriers were noted in Germany by [1], where lack of training, financial challenges, and inadequate healthcare infrastructure limited remote monitoring effectiveness. [37] noted that low-resource settings faced technical literacy issues, restricting scalability of interventions.

Additional Types of Interventions

Other interventions like telepsychiatry and online support networks were explored. [43] studied telepsychiatry in rural Nigeria, showing potential to address mental health disparities in dementia care. [11] evaluated online support groups, noting reduced stress and caregiver burden through resource sharing and social support.

Telemedicine Platforms and Legal Frameworks:

The scope of telemedicine platforms and regulatory frameworks affecting dementia care in low-resource settings was examined [14]. In rural areas, regulatory barriers to adoption were identified, indicating the need for supportive legal frameworks. [43] reviewed platforms, noting effective ones improved patient satisfaction and outcomes but were hindered by cost and accessibility issues.

Gaps in Research

The review identified several gaps in the current research on telemedicine for dementia care

in Nigeria:

Lack of Large-Scale Studies: Larger studies are needed to assess the long-term impact of telemedicine on dementia care; most studies are small-scale [11].

Minimal Focus on Cultural Adaptation: Limited research addresses adapting telemedicine tools to meet cultural needs of caregivers and healthcare professionals [63].

Absence of Randomized Controlled Trials (RCTs): Few RCTs have been conducted to strengthen evidence for policy and compare telemedicine with traditional care in Nigeria [64].

Discussion

Summary of the Findings

This scoping review examined telemedicine interventions for dementia care in Nigeria, focusing on video consultations, mHealth, and remote monitoring tools. Video consultations effectively improved specialist access and reduced caregiver burden [11]. mHealth applications are the most used intervention due to high mobile phone penetration [64], while remote monitoring tools face challenges in rural areas due to poor internet connectivity and digital literacy gaps [3]. Key barriers include infrastructural limitations, lack of a cohesive strategy, and cultural barriers [4]. Despite challenges, telemedicine shows potential to enhance patient outcome, reduce caregiver burden, and improve healthcare access [43].

Detailed discussion of findings

Video consultations address the shortage of dementia specialists by reducing caregiver travel stress and providing timely healthcare access [23]. However, poor internet access and inconsistent electricity supply hinder implementation in rural areas, like other sub-Saharan nations facing infrastructural challenges [37][5]. The extensive use of mHealth applications help caregivers manage routines and monitor health [4]. High mobile phone penetration supports mHealth adoption, particularly in urban areas, but gaps in digital literacy limit rural use. This issue is consistent with other low-and-middle-income countries facing similar telemedicine challenges [33].

Remote monitoring tools, like wearable sensors and home-based systems support continuous health monitoring and early detection of cognitive decline, reducing hospital visits [57]. However, affordability, digital literacy, and infrastructure challenges limit their use in Nigeria, reflecting similar issues reported globally [39,57]

Cultural and linguistic diversity also impacts telemedicine adoption. Many older adults and caregivers in rural areas are not fluent in English, the primary language of most platforms

[71]. Effective adoption requires multilingual support and culturally appropriate frameworks [70]. This aligns with findings from other multicultural regions emphasizing culturally tailored interventions [71].

Limitations

This review has limitations. The methodological quality of studies varies with many relying on qualitative data, limiting applicability across Nigeria [18]. The review focused on published literature, overlooking relevant grey literature [36]. Few long-term studies evaluate the sustained impact of telemedicine interventions on dementia care outcomes in Nigeria with long-term effects still unknown, despite short-term advantages [13]. Lastly, issues with internet connectivity and digital literacy are commonly noted, but strategies to address them were not comprehensively explored[54].

Conclusion

This review highlights the urgent need for a comprehensive telemedicine policy framework integrating technological solutions within existing dementia care systems. Addressing infrastructural limitations, encouraging caregiver training, and developing culturally adapted tools are essential for broader acceptance. Caregiver-centered solutions with cultural and linguistic considerations can support a sustainable model for dementia care in Nigeria. Policymakers should focus on long-term evaluations, randomized controlled trials, and scalable models to bridge the digital divide. These strategies will enhance the quality of life for individuals with dementia and establish Nigeria as a leader in innovative health solutions for resource-limited settings.

Acknowledgements

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Data Availability

All data generated or analyzed during this study are included in this published article and its supplementary information files. They are made publicly available.

Authors' Contributions

All the authors contributed equally to the writing, review and editing.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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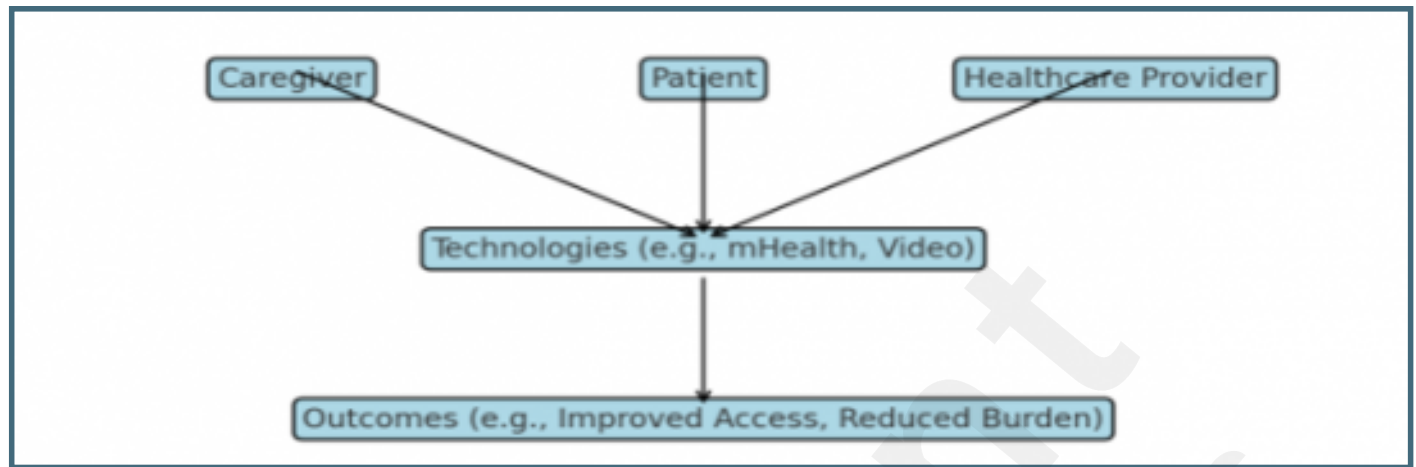
Supplementary Files

Figures

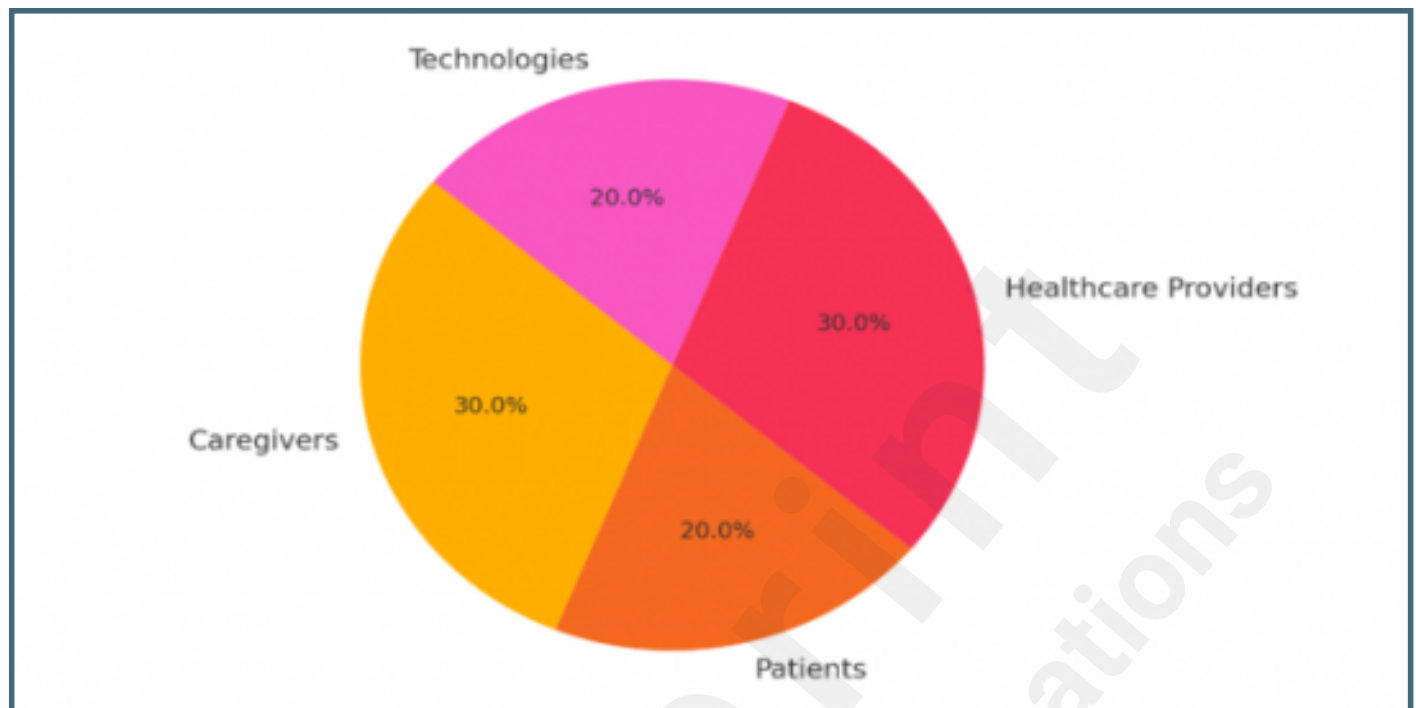
Geographical map highlighting Northeastern Nigeria region for telemedicine dementia care.



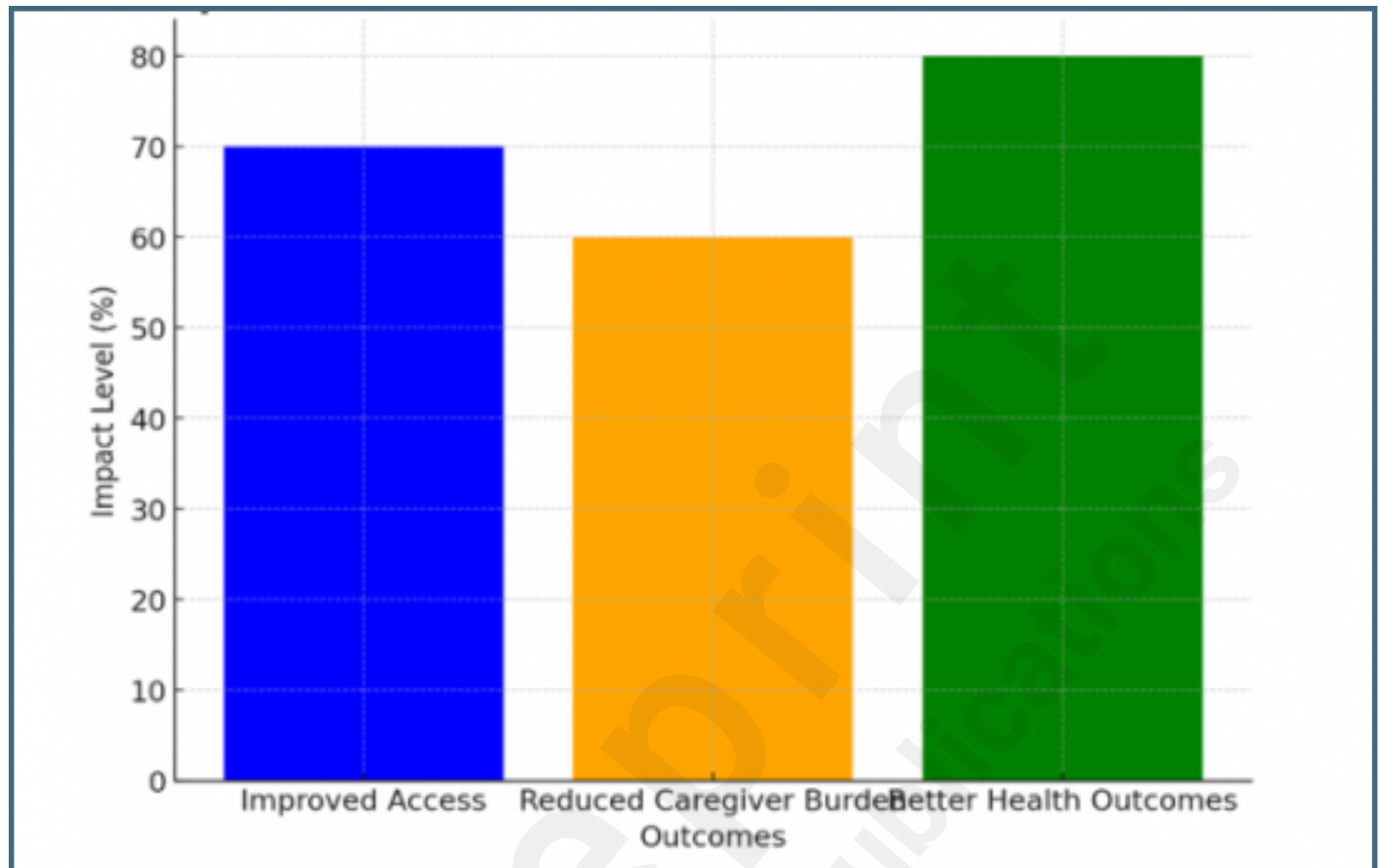
Shows interactions between patients, caregivers, professionals, and telemedicine, improving access, reducing burden, and enhancing outcomes.



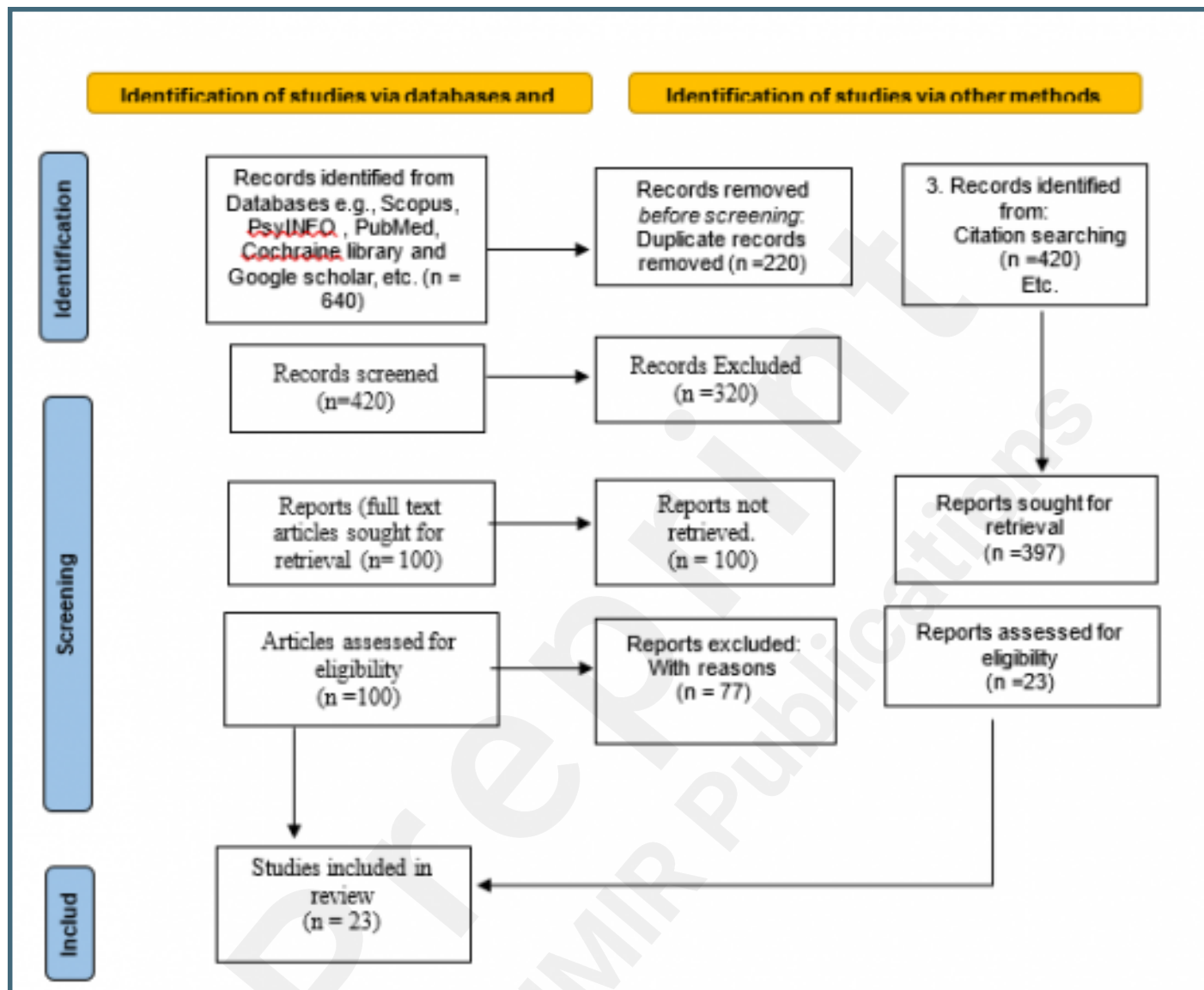
Key stakeholders role in telemedicine adoption, their interactions and impact on care delivery and outcomes.



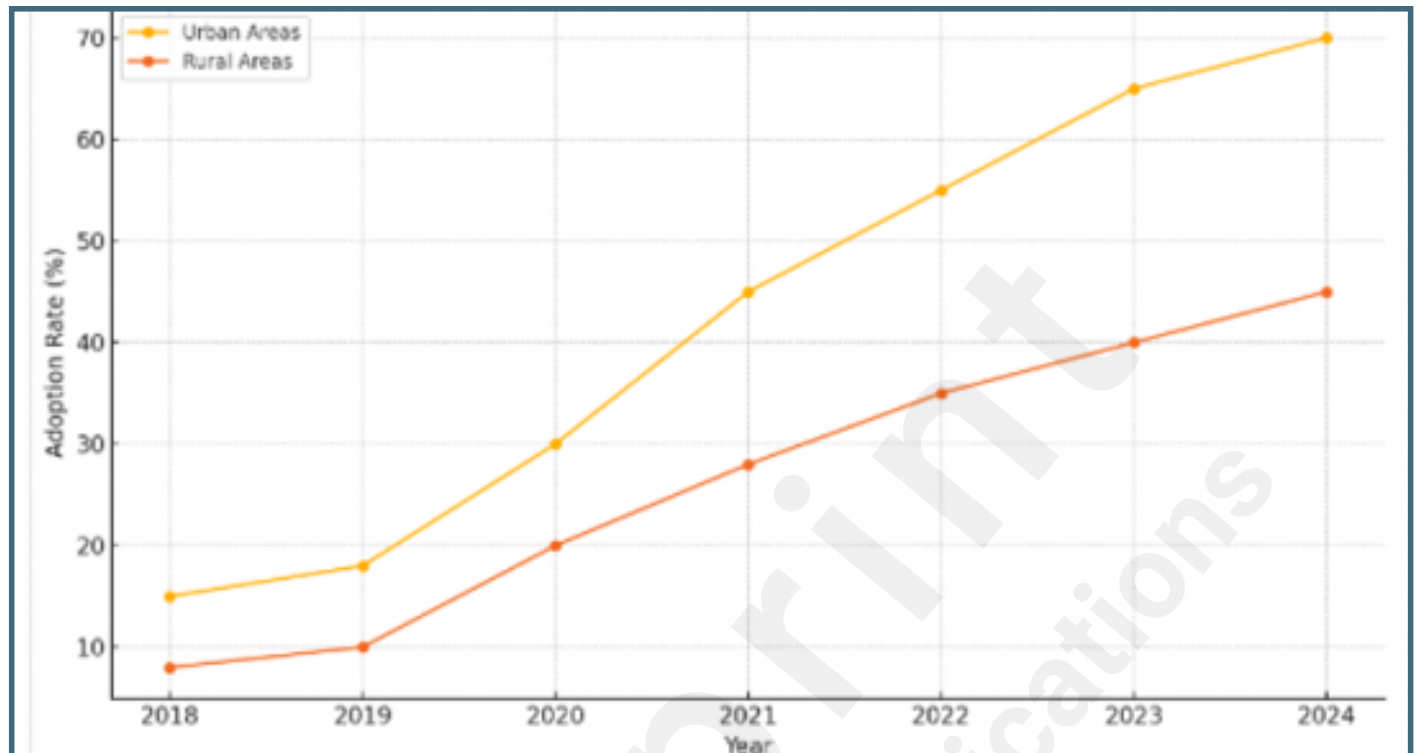
The impact of telemedicine interventions on dementia care outcomes, including reducing caregiver burden, and improving quality of life.



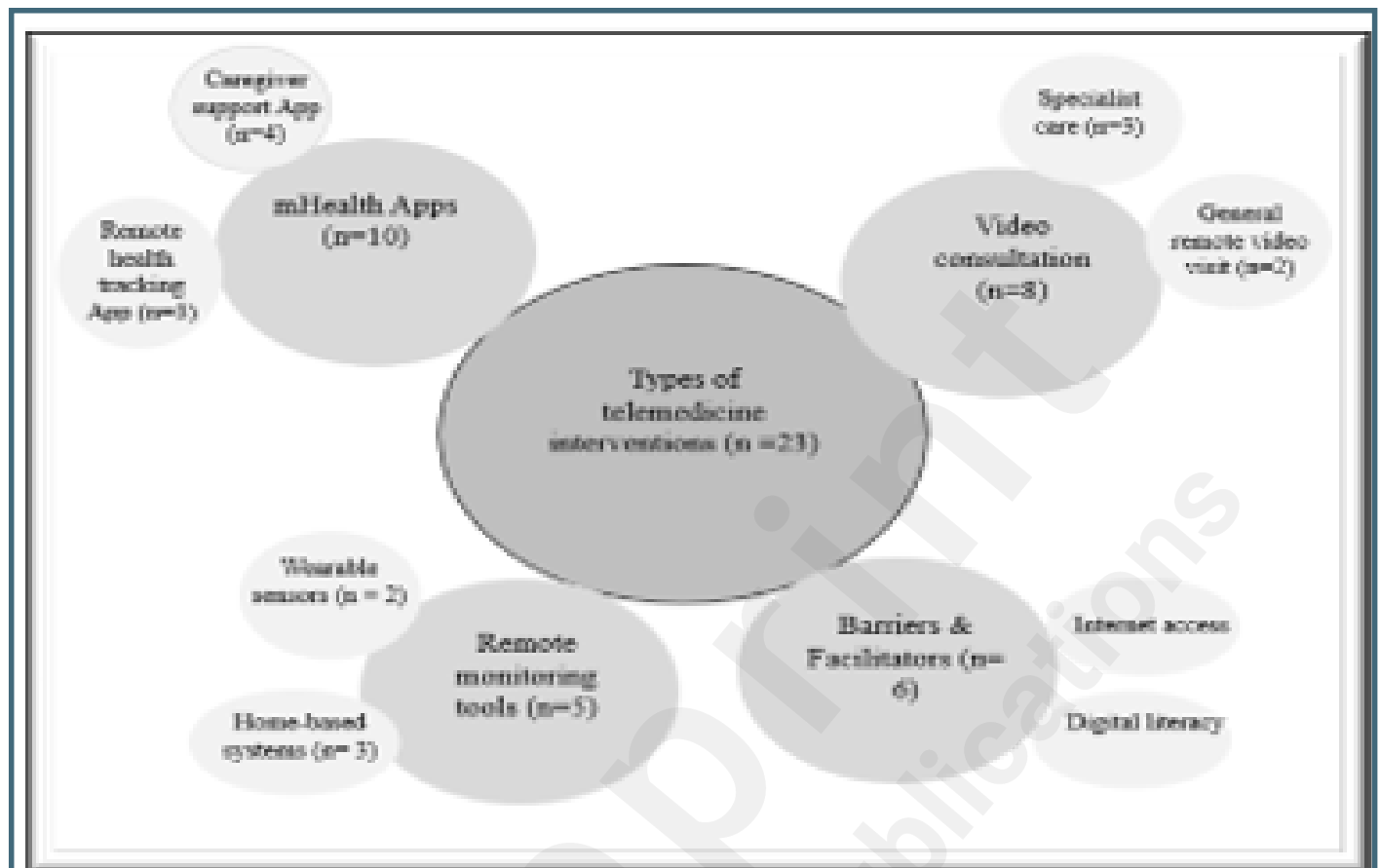
Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-SCR) flow diagram for the completed search.



The projected telemedicine growth in Nigeria from (2018-2024) shows increased use of mHealth apps, video consultations, and remote monitoring tools across urban and rural areas.



Illustrative map of telemedicine intervention groups.



Illustrative image of telemedicine technology.



Multimedia Appendixes

Characteristics of included studies.

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