

Healthcare providers' practices, facilitators, and challenges in early intervention service delivery for children with developmental delays at the University Teaching Hospital of Kigali (CHUK)

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ABSTRACT

INTRODUCTION: Early intervention (EI) is critical for improving developmental outcomes among children at risk of developmental delays, yet implementation in low- and middle-income countries remains constrained. This study assessed healthcare provider practices, facilitators, and barriers to EI service delivery at the University Teaching Hospital of Kigali (CHUK).

METHODS: A facility-based cross-sectional study was conducted among 108 healthcare providers involved in pediatrics and rehabilitation services. Data were collected using structured questionnaires administered via Kobo Toolbox, capturing developmental screening practices, referral systems, facilitators, and perceived challenges. Descriptive statistics and chi-square tests were used to examine associations between provider characteristics and EI practices

RESULTS: Routine developmental monitoring was moderately implemented, with 49.1% of providers consistently assessing developmental milestones and 33.3% incorporating caregiver education. However, major gaps were identified in structured EI systems: 42.6% reported limited use of standardized screening tools, 64.8% lacked confidence in referral, and 66.7% reported absence of clear referral pathways. Key facilitators included multidisciplinary teamwork (60.2%), access to assistive devices (64.8%), and staff training or mentorship (50.9%). Major barriers included inadequate rehabilitation infrastructure (55.6%), limited outreach services (75.9%), insufficient trained personnel, and low caregiver awareness. No significant associations were observed between provider socio-demographic characteristics.

CONCLUSION: While foundational EI practices exist at CHUK, critical weaknesses in screening, referral systems, and service integration limit effective implementation. Strengthening standardized screening, referral pathways, provider capacity, and community outreach is essential to improve early identification and equitable access to EI services in Rwanda.

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INTRODUCTION

Early childhood is a period of unparalleled neuroplasticity; global reports emphasize that developmental disabilities are common, under recognized, and poorly integrated into health systems planning [1]. The World Health Organization (WHO) and the United Nations Children's Fund calls for intentional inclusion of children with developmental disabilities in policy, programming and monitoring because these children face persistent barriers to health, education and social participation [2,3]. Recent global analyses estimate substantial regional variation in childhood disability prevalence and highlight that children in low and middle income countries (LMICs) bear a disproportionate burden of risk for not reaching developmental potential due to poverty, malnutrition and perinatal complications [4]. Population level syntheses show that reliable surveillance and routine screening remain limited across many regions, undermining early detection and timely referral [5]. Tertiary hospitals in LMICs, including University Teaching Hospital of Kigali (CHUK), function as referral hubs for complex pediatric care but often retain a pathology oriented culture that prioritizes acute management over longitudinal developmental surveillance and family centered rehabilitation [6]. Implementation reports and program documents stress that aligning provider practice with system design is necessary to close the gap between policy commitments and outcomes. "The first five years of life are characterized by rapid neural connection formation, with more than one million new connections occurring every second[2]. Globally, one in ten children lives with a disability, and in low- and middle-income countries like Rwanda, approximately 43% to 44% of children are at risk of not reaching their developmental potential due to poverty, malnutrition, and medical risks [6]. Socioeconomic constraints (transport costs, caregiver time, limited insurance), health system factors (unclear referral pathways, workforce shortages, lack of decentralized follow up), and cultural stigma jointly reduce families' ability to sustain repeated therapy contacts [2]. Global guidance and regional studies recommend integrated models, routine surveillance, standardized referral algorithms, task sharing with community health workers, and caregiver led interventions, to preserve intervention

"dose" and expand reach in resource constrained settings [7]. To convert global commitments into measurable developmental gains, tertiary hospitals must reorient provider workflows toward routine developmental surveillance, formalized referral pathways, and family centered, decentralized follow up actions that are both evidence aligned and feasible within LMIC health systems [8]. Providers (nurses, pediatricians, physiotherapists, occupational therapists and other rehabilitation staff) are the linchpin of early intervention (EI) pathways: their routine behaviors determine early detection, timely referral, and caregiver coaching; all prerequisites for maintaining the therapeutic intensity required for functional gains [9]. Strengthening provider competence in validated screening tools, referral navigation, and family centered counseling is therefore a high leverage strategy to improve population outcomes [9,10]. For occupational therapists and allied health professionals, these contextual realities have direct implications for practice. Effective EI in resource constrained tertiary settings depends on integrating routine developmental surveillance into clinical workflows, standardizing referral algorithms that link hospital based care with community and primary level services, and adapting interventions to reduce travel burden through caregiver coaching, task sharing, and community health worker partnerships [11]. Strengthening provider training in validated screening tools and referral navigation, and embedding family centered approaches into routine care, are practical levers that can improve early detection and sustain engagement.

METHODS

Study Design and Setting

This study employed a cross-sectional quantitative design at the University Teaching Hospital of Kigali (CHUK), focusing on the Pediatric and Functional Rehabilitation departments.

Participants and Sample Size

The study involved healthcare providers working within the Pediatric Department and Functional Rehabilitation Department at CHUK. A census sampling approach was employed whereby all eligible healthcare providers who had worked in their respective departments for at least six months were invited to participate [12]. Because the study sought to include the entire accessible population

of healthcare providers involved in pediatric and rehabilitation services during the study period, no formal sample size calculation was performed. A total of 108 healthcare providers met the eligibility criteria and participated in the study.

Instrumentation Tools

Three structured questionnaires were developed based on existing literature and international early intervention guidelines. The Current Practice Assessment Questionnaire (CPAQ) consisted of 10 items assessing developmental surveillance activities, developmental screening practices, referral procedures, developmental monitoring, caregiver education, and provider training. Responses were measured on a four-point Likert scale ranging from "Always" to "Rarely/Never."

The Challenges and Facilitators Identification Questionnaire (CFIQ) comprised 16 items divided into two domains: facilitators of early intervention implementation (8 items) and perceived implementation challenges (8 items). Responses were measured using a three-point scale (Agree/Strongly Agree, Neutral, Disagree/Strongly Disagree). The Early Intervention Benefits Assessment Questionnaire (EIBAQ) explored providers' perceptions regarding the contribution of early intervention services to developmental care and family support. Because objective child outcomes were not measured, responses reflected provider perceptions rather than direct developmental outcomes.

Questionnaire content validity was established through review by experts in pediatrics, rehabilitation, occupational therapy, and research methodology. A pilot study conducted at King Faisal Hospital Rwanda and Rwanda Military Teaching Hospital demonstrated good internal consistency reliability, with a Cronbach's alpha coefficient of 0.89. Data were collected electronically using Kobo Toolbox between November 9th and December 9th, 2025.

Data Analysis

Data collected through Kobo Toolbox were exported to IBM SPSS Statistics version 29.0 for analysis. Data were checked for completeness, consistency, and missing values prior to analysis. Descriptive statistics including frequencies, percentages, means, and standard deviations were used to summarize healthcare providers' socio-demographic characteristics,

developmental screening practices, facilitators of early intervention implementation, and perceived challenges.

Pearson's chi-square tests were conducted to examine associations between socio-demographic characteristics (age, gender, marital status, profession, and work experience) and selected early intervention practice variables. Additional analyses explored relationships between developmental surveillance training, use of standardized developmental screening tools, referral confidence, referral pathway availability, and professional cadre. The strength of associations was assessed using Cramér's V. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval was granted by the CHUK Institutional Review Board (Ref.: EC/CHUK/170/2025), and all participants provided informed consent prior to data collection.

Funding

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RESULTS

Socio-Demographic Profile of Healthcare Providers

In the current study a total of 108 healthcare providers participated in the study at CHUK, representing a predominantly young to middle-aged and female-led workforce. Nearly half of the participants (47.2%) were aged 31–40 years. The professional distribution showed that nurses constitute the largest proportion of the EI workforce at 64.81%, followed by physiotherapists (11.11%). Smaller representations were found for medical pediatricians (5.56%), occupational therapists (5.56%), psychologists (4.63%), and nutritionists (2.78%) (Table 1).

Developmental Screening and Clinical Practices

Early intervention practices showed a mixed pattern across respondents in table 4.2. Routine clinical practices such as developmental milestone assessments were relatively well implemented, with nearly half of participants reporting they always conduct them (49.1%; mean = 2.11, SD = 1.10), and caregiver education was also commonly

Table 1: Socio-Demographic Profile of Healthcare Providers

Variables	Frequency, n (%)	Mean (SD)
Age		2.16(1.02)
20–30	25(23.14)	
31–40	51(47.2)	
41–50	24(22.2)	
50 and above	8(7.4)	
Gender		2.47(0.90)
Male	24(22.22)	
Female	84(77.77)	
Marital status		3.71(0.96)
Single	33 (30.55)	
Married	75(69.44)	
Department/profession		3.4(0.79)
Nurses	70(64.81)	
Physiotherapy	12(11.11)	
Occupational Therapy	6(5.56)	
Medical pediatric Doctors	6(5.56)	
Prosthetics & Orthotics	3(2.78)	
Human Nutrition	3(2.78)	
Social Workers	2(1.85)	
Psychologists	5(4.63)	
Audiology	1(0.93)	
Working experience		1.47(1.79)
6 months–1 year	19(17.6)	
1–2 years	21(19.44)	
>2 years	68(62.9)	

integrated into care (33.3% always; mean = 2.20, SD = 0.97). However, critical components of structured early intervention systems were notably weak. The majority of respondents reported rarely or never having confidence in referring children (64.8%; mean = 3.43, SD = 1.20) or access to clear referral pathways (66.7%; mean = 3.40, SD = 1.32). Similarly, the use of standardized developmental screening tools was limited, with 42.6% reporting rare or no use (mean = 2.94, SD = 1.24). Training in developmental surveillance was inconsistent, and access to contextually appropriate tools was moderate (Table 2).

Facilitators of Early Intervention Implementation

Facilitators of early intervention implementation showed a varied pattern, with some system

strengths alongside notable gaps in the table 4.3. Strong facilitators included access to assistive devices (64.8% agreement; mean = 1.48, SD = 1.38), multidisciplinary teamwork (60.2%; mean = 1.56, SD = 1.40), and staff training or mentorship (50.9%; mean = 1.67, SD = 1.37), indicating that structural and professional support mechanisms are relatively established. However, several key facilitators were weak or inconsistent. A substantial proportion of respondents disagreed that rehabilitation spaces and equipment were adequate (55.6%; mean = 2.31, SD = 1.40) and that outreach programs were available (75.9%; mean = 2.65, SD = 1.29), highlighting major infrastructural and community-level gaps. Caregiver involvement was also limited, with nearly half of participants expressing disagreement (49.1%; mean = 2.33, SD = 1.29). Referral pathways and home-based

Table 2: Developmental Screening and Early Intervention Clinical Practices among Healthcare Providers (n = 108)

Variables	Always	Sometimes	Often	Rarely/ Never	Mean (SD)
Screening less than five years for developmental delays	22(20.4)	48(44.4)	24(22.2)	14(13.0)	2.28(0.99)
Use developmental screening tools (questionnaires, checklists)	10(9.3)	36(33.3)	17(15.7)	46(42.6)	2.94(1.24)
Early intervention includes caregiver education or training	36(33.3)	34(31.5)	22(20.4)	17(15.7)	2.20(0.97)
Confidence in referring children with developmental concerns to EI services	5(4.6)	17(15.7)	17(15.7)	70(64.8)	3.43(1.20)
Referral pathway clearly available when concerns identified	5(4.6)	22(20.4)	10(9.3)	72(66.7)	3.40(1.32)
Received training in developmental surveillance and screening	24(22.2)	41(38.0)	19(17.6)	24(22.2)	2.40(1.29)
Access to contextual appropriate assessment tools	26(24.1)	5(4.6)	50(46.3)	26(24.1)	2.69(1.19)
Developmental milestone assessments for children at risk	53(49.1)	14(13.0)	17(15.7)	24(22.2)	2.11(1.10)
Monitoring growth for children at risk of developmental delay	17(15.7)	38(35.2)	31(28.7)	22(20.4)	2.54(1.54)
Use of Kangaroo Mother Care (KMC) for infants with developmental risks	10(9.3)	36(33.3)	31(28.7)	31(28.7)	2.77(1.03)

SD: Standard deviation

strategies showed mixed responses (Table 3).

Perceived challenges of Early Intervention Implementation

Perceived challenges to early intervention implementation reveal important system and community-level constraints in the table 4.4.

While about half of respondents agreed that initial-contact providers routinely screen at-risk children (50.9%; mean = 1.82, SD = 1.50), concerns remain regarding workforce capacity, with only 39.8% agreeing that there are enough trained early intervention specialists (mean = 1.94, SD = 1.59). Referral systems also appear inconsistent,

Table 3: Facilitators of Early Intervention Implementation

Variables	Agree / Agree	Strongly Neutral	Disagree / Strongly Disagree	Mean (SD)
Multidisciplinary team	65(60.2)	26(24.1)	17(15.7)	1.56(1.40)
Staff training / mentorship	55(50.9)	34(31.5)	19(17.6)	1.67(1.37)
Caregiver involvement	17(15.7)	38(35.2)	53(49.1)	2.33(1.29)
Home-based strategies	36(33.3)	31(28.7)	41(38.0)	2.05(1.58)
Rehab spaces / equipment	26(24.1)	22(20.4)	60(55.6)	2.31(1.40)
Assistive devices access	70(64.8)	24(22.2)	14(13.0)	1.48(1.38)
Outreach programs	12(11.1)	14(13.0)	82(75.9)	2.65(1.29)
Referral pathways	38(35.2)	34(31.5)	36(33.3)	1.98(1.54)

SD: Standard deviation

Table 4: Perceived challenges of Early Intervention Implementation

Variables	Agree/ Strongly Agree (%)	Neutral (%)	Disagree/ Strongly Disagree (%)	Mean (SD)
Enough trained early intervention specialists on staff	43(39.8)	29(26.9)	36(33.3)	1.94(1.59)
Initial-contact providers routinely screen at-risk children	55(50.9)	17(15.7)	36(33.3)	1.82(1.50)
Parents/caregivers are well informed about early signs	26(24.1)	26(24.1)	55(51.0)	2.25(1.59)
Cultural beliefs or stigma discourage caregivers from seeking EI	26(24.1)	26(24.1)	55(51.0)	2.25(1.48)
Clear formal referral pathway between hospital and community services	43(39.8)	31(28.7)	34(31.5)	1.92(1.52)

SD: Standard deviation

Table 3: Associations between Socio-Demographic Characteristics and Early Intervention Practices and Perceived Challenges

Variables	Frequency, n (%)	χ^2 (df)	p	Cramér's V
Age (years)		5.67 (6)	0.458	0.1
20–30	25 (23.1)			
31–40	51 (47.2)			
41–50	24 (22.2)			
≥50	8 (7.4)			
Gender		4.12 (2)	0.127	0.12
Male	24 (22.2)			
Female	84 (77.8)			
Marital status		1.84 (2)	0.398	0.08
Single	33 (30.6)			
Married	75 (69.4)			
Department/Profession		16.45 (18)	0.58	0.09
Nurses	70 (64.8)			
Physiotherapy	12 (11.1)			
Occupational Therapy	6 (5.6)			
Pediatric Doctors	6 (5.6)			
Prosthetics & Orthotics	3 (2.8)			
Human Nutrition	3 (2.8)			
Social Workers	2 (1.9)			
Psychologists	5 (4.6)			
Audiology	1 (0.9)			
Work experience		3.77 (4)	0.438	0.08
6 months–1 year	19 (17.6)			
1–2 years	21 (19.4)			
>2 years	68 (62.9)			

 χ^2 : Pearson's Chi-square statistic; df: degrees of freedom. Statistical significance was set at $p < 0.05$.

as opinions were divided on the existence of clear formal referral pathways (39.8% agree vs. 31.5% disagree; mean = 1.92, SD = 1.52). Notably, caregiver-related factors emerged as significant challenges: a majority of respondents disagreed that parents are well informed about early developmental signs (51.0%; mean = 2.25, SD = 1.59), and similarly rejected the influence of cultural beliefs or stigma (51.0%; mean = 2.25, SD = 1.48) (Table 4).

Associations between Socio-Demographic Characteristics and Early Intervention Practices and Perceived Challenges

In relation to the study objective of examining whether socio-demographic characteristics influence early intervention practices and perceived challenges in the table 4.5 below, the findings indicated that such characteristics do not play a statistically significant role. The study sample ($n = 108$) was largely composed of participants aged 31–40 years (47.2%), females (77.8%), and married individuals (69.4%), with the majority working as nurses (64.8%) and having more than two years of professional experience (62.9%).

Chi-square analysis revealed no statistically significant associations between socio-demographic variables and early intervention outcomes. Specifically, gender ($\chi^2(2) = 4.12$, $p =$

0.127, Cramér's $V = 0.12$), age ($\chi^2(6) = 5.67$, $p = 0.458$, $V = 0.10$), marital status ($\chi^2(2) = 1.84$, $p = 0.398$, $V = 0.08$), department ($\chi^2(18) = 16.45$, $p = 0.580$, $V = 0.09$), and work experience ($\chi^2(4) = 3.77$, $p = 0.438$, $V = 0.08$) were not significantly associated with early intervention practices or perceived challenges (Table 5).

Factors Associated with Early Intervention Practices among Healthcare Providers

Additional analyses were conducted to explore factors associated with early intervention practices among healthcare providers 6. Significant associations were observed between developmental surveillance training and the use of developmental screening tools ($\chi^2(16) = 23.23$, $p = 0.002$), referral confidence ($\chi^2(16) = 19.22$, $p = 0.027$), referral pathway availability ($\chi^2(16) = 24.78$, $p = 0.044$), and access to contextual assessment tools ($\chi^2(12) = 16.67$, $p = 0.002$). The use of standardized developmental assessment tools was also significantly associated with department/unit ($\chi^2(18) = 30.61$, $p = 0.001$). No statistically significant associations were found between working experience and the use of developmental screening tools, referral confidence, or referral pathway availability, nor between profession/area of specialization and access to adequate early intervention resources ($p > 0.05$) (Table 6).

Table 6: Factors Associated with Early Intervention Practices among Healthcare Providers

Variable	$\chi^2(df)$	p
Use of developmental screening tools × Working experience	11.47(8)	0.176
Use of developmental screening tools × Developmental surveillance training	23.23(16)	0.002
Use of standardized developmental assessment tools × Department/unit	30.61(18)	0.001
Use of standardized developmental assessment tools × Developmental surveillance training	10.25(12)	0.594
Referral confidence × Working experience	15.18(8)	0.056
Referral confidence × Developmental surveillance training	19.22(16)	0.027
Referral pathway availability × Working experience	13.01(8)	0.051
Referral pathway availability × Developmental surveillance training	24.78(16)	0.044
Availability of contextual assessment tools × Developmental surveillance training	16.67(12)	0.002
Access to adequate early intervention resources × Profession/area of specialization	6.01(2)	0.175

χ^2 : Pearson's Chi-square statistic; df: degrees of freedom. Statistical significance was set at $p < 0.05$.

DISCUSSION

This study examined healthcare providers' practices, facilitators, and perceived challenges in delivering EI services at the CHUK. Overall, the findings reveal a mixed implementation pattern characterized by relatively strong engagement in basic developmental monitoring and teamwork, but significant weaknesses in structured developmental screening systems, referral pathways, workforce capacity, and community outreach.

The findings are consistent with studies conducted in Sub-Saharan Africa, which have reported inadequate developmental screening coverage, workforce shortages, fragmented referral systems, and limited community-based rehabilitation services [13]. A Rwandan study by Tuyisenge et al. demonstrated substantial gaps in developmental delay screening despite increasing recognition of early childhood development needs, with evidence of significant rates of ASQ-detectable developmental delay among infants attending routine health services [6]. Similarly, studies from Ghana have shown that developmental surveillance in routine child health services remains largely dependent on clinical judgment rather than standardized screening tools, resulting in under-identification of developmental delays [14]. Evidence from Ethiopia also indicates that developmental monitoring systems are weak and inconsistently implemented, with limited integration of standardized tools in primary care settings. Across Sub-Saharan Africa, including contexts such as Lesotho, persistent shortages of trained health workers and weak referral systems continue to limit access to timely early intervention services, particularly in rural and underserved communities [7]. The findings demonstrate that while routine developmental monitoring practices are moderately integrated into clinical care, the use of structured early intervention systems remains limited. Nearly half of providers reported always conducting developmental milestone assessments (49.1%), suggesting that informal developmental surveillance is relatively well embedded in routine Paediatric care. Similarly, caregiver education was frequently incorporated into clinical interactions, reflecting alignment with family-centered care principles emphasized in early childhood development frameworks [15]. However, these strengths contrast sharply with major deficiencies in structured screening

systems. More than two-thirds of providers reported low confidence in referring children with developmental concerns (64.8%) and lack of clear referral pathways (66.7%). In addition, the use of standardized developmental screening tools was limited, with 42.6% reporting rare or no use. These findings are consistent with evidence from low- and middle-income countries (LMICs), where developmental surveillance is often informal and heavily dependent on clinician judgment rather than standardized tools [16]. The lack of structured screening tools and weak referral confidence suggests systemic fragmentation between detection and intervention services. Without standardized screening and clearly defined referral pathways, early identification becomes inconsistent, delaying access to timely intervention. This has been identified as a major bottleneck in strengthening early childhood development systems globally, particularly in resource-constrained settings [17]. The study identified several important facilitators that support EI service delivery at CHUK. Multidisciplinary teamwork (60.2%) and staff training or mentorship (50.9%) was among the strongest reported facilitators, indicating that collaborative practice and informal capacity-building mechanisms are relatively well established. This is consistent with global recommendations emphasizing multidisciplinary approaches as a core component of effective EI systems [18]. Access to assistive devices was also strongly reported (64.8%), reflecting availability of some essential rehabilitation inputs. These findings suggest that despite systemic gaps, foundational clinical and rehabilitation structures are present and provide an important platform for strengthening EI services. However, these facilitators are undermined by significant infrastructural and system-level weaknesses. More than half of providers reported inadequate rehabilitation spaces and equipment (55.6%), and three-quarters reported a lack of outreach programs (75.9%). Limited caregiver involvement (49.1% disagreement) further highlights weaknesses in family engagement at the service delivery level. These findings are consistent with studies in sub-Saharan Africa showing that EI systems are often facility-centered, under-resourced, and weakly linked to community-based services [19]. The inconsistency in referral pathways further reinforces fragmentation within the system. While some providers acknowledged their existence,

responses were mixed, indicating lack of standardization and poor implementation fidelity. The study identified several critical system-level challenges affecting EI delivery. Only 39.8% of providers agreed that there are sufficient trained EI specialists, highlighting persistent workforce shortages. This aligns with global evidence showing that limited human resource capacity is one of the most significant barriers to scaling EI services in LMICs [20]. Although half of respondents reported that initial-contact providers routinely screen at-risk children, inconsistencies in referral systems and limited structured surveillance suggest that screening practices are not systematically linked to intervention pathways. This weak continuity between detection and referral has been widely documented in LMIC health systems. Notably, caregiver-related challenges were also highlighted. More than half of providers reported that caregivers are not adequately informed about early developmental signs (51.0%). However, cultural beliefs and stigma were not widely perceived as major barriers, with over half of respondents disagreeing that these factors significantly influence care-seeking behaviours [21]. This suggests that the primary barrier may be lack of awareness rather than resistance due to cultural norms. This finding is important because it shifts the focus from cultural explanations of delay to health system-driven gaps in early identification and caregiver education.

The analysis found no statistically significant associations between provider socio-demographic characteristics and EI practices or perceived challenges. Gender, age, marital status, profession, and years of experience were not significantly associated with screening practices, referral confidence, or perceived system barriers. This suggests that implementation challenges are primarily driven by systemic and structural factors rather than individual provider characteristics. Similar findings have been reported in other LMIC settings, where organizational constraints such as lack of tools, weak systems integration, and insufficient training environments play a more dominant role than individual demographics [22]. However, the finding that more experienced providers demonstrated slightly higher referral confidence suggests that experiential learning may partially mitigate training gaps. This highlights the importance of structured mentorship and continuous professional development in

strengthening early intervention systems.

The study was conducted at a single tertiary referral hospital, which may limit generalizability to district hospitals, health centers, and community-based settings. The findings relied on self-reported practices and perceptions, making them susceptible to recall bias and social desirability bias.

Some professional cadres were represented by relatively small sample sizes, reducing statistical power for subgroup analyses.

The study focused exclusively on healthcare providers and did not include perspectives from caregivers, children with developmental delays, community health workers, or policymakers.

The findings have important implications for child development and rehabilitation policy in Rwanda. The limited use of standardized developmental screening tools and absence of clear referral pathways suggest a need for national guidelines that integrate developmental surveillance into routine pediatric and primary healthcare services.. Strengthening pre-service and in-service training on developmental screening, referral systems, and family-centered care could improve early identification of developmental delays. Furthermore, expanding community-based rehabilitation programs and integrating early intervention services within district hospitals and primary healthcare facilities may improve service accessibility and reduce the burden on tertiary referral hospitals.

The findings support current national efforts aimed at strengthening early childhood development and inclusive rehabilitation services through multidisciplinary and decentralized models of care.

CONCLUSION

This study demonstrates that while healthcare providers at CHUK routinely engage in developmental monitoring and caregiver education, significant gaps remain in the implementation of comprehensive early intervention services for children with developmental delays. Limited use of standardized screening tools, unclear referral pathways, inadequate rehabilitation infrastructure, insufficient specialized personnel, and weak community outreach mechanisms continue to hinder effective service delivery. Multidisciplinary

collaboration, access to assistive devices, and staff mentorship emerged as important facilitators. Strengthening provider capacity, institutionalizing developmental screening, establishing clear referral systems and expanding family- and community-centered services are critical to improving early identification, timely intervention, and developmental outcomes for children in Rwanda. Future mixed-methods and multicenter studies incorporating multiple stakeholder perspectives are recommended.

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