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Enabling Factors for Effective Implementation and Sustainability of Community-Based Rehabilitation (CBR) in Malaysia

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ABSTRACT

This study investigates the enabling factors that contribute to the effective implementation and sustainability of Community-Based Rehabilitation (CBR), locally known as Program Pemulihan Dalam Komuniti (PDK), in Malaysia. Despite the expansion of PDK centres nationwide, challenges remain in sustaining high-quality rehabilitation services. Drawing on prior literature, this research examines the roles of workforce motivation, caregiver support, stakeholder collaboration, community participation, and service accessibility in fostering programme continuity. A qualitative methodology involving semi-structured interviews and focus group discussions with key stakeholders provided in-depth insights into operational and social determinants of PDK sustainability. The findings reveal that motivated and well-trained staff, active caregiver engagement, strong multi-stakeholder partnerships, inclusive community involvement, and accessible services are critical factors underpinning effective implementation. Workforce motivation and stakeholder collaboration emerged as particularly influential, shaping both programme quality and long-term viability. The study further highlights the need for structured caregiver support and enhanced service accessibility to ensure equitable rehabilitation outcomes. These results have implications for national policy and programme design, aligning with the United Nations Sustainable Development Goals (SDGs) by promoting inclusive education (SDG 4), decent work (SDG 8), good health and well-being (SDG 3), reduced inequalities (SDG 10), and partnerships for the goals (SDG 17). The research contributes to the literature by integrating human, social, and institutional factors into a comprehensive sustainability framework for PDK.

Keywords: Community-Based Rehabilitation, Sustainability, Workforce Motivation, Caregiver Support, Stakeholder Collaboration, SDGs

INTRODUCTION

Community-Based Rehabilitation (CBR), known in Malaysia as Program Pemulihan Dalam Komuniti (PDK), is an important community-centred approach for supporting persons with disabilities through rehabilitation, social inclusion, equal opportunities, and family participation. In Malaysia, PDK is implemented through a multisectoral model involving persons with disabilities, families, local communities, government agencies, non-governmental organisations, private sectors, and local leaders. According to the Department of Social Welfare Malaysia, PDK has expanded significantly since its establishment in 1984, with 573 PDK centres, 20,545 registered trainees, 573 supervisors, and 2,808 workers recorded as of February 2025. This indicates that PDK has become a major national platform for disability rehabilitation and community inclusion rather than a small welfare-based initiative. Its objectives are also consistent with the World Health Organization's CBR framework, which emphasises health, education, livelihood, social participation, and empowerment as key components of inclusive community development (Department of Social Welfare Malaysia, 2025; World Health Organization [WHO], 2010).

Despite this progress, the long-term effectiveness and sustainability of PDK depend not only on the existence of centres, but also on the strength of enabling factors that support daily implementation. Evidence from Malaysia suggests that human resources, caregiver participation, local leadership, service accessibility, and community ownership are central to sustaining CBR outcomes. For example, Hasan and Aljunid (2019) found that job

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satisfaction among CBR workers influences motivation, performance, and staff retention, which are crucial for maintaining service quality. Similarly, parents' and caregivers' satisfaction with CBR services in Peninsular Malaysia reflects the importance of family-centred rehabilitation and continuous caregiver engagement (Hasan et al., 2021). These findings show that PDK sustainability is closely connected to the people who implement and support the programme at the community level.

However, several challenges remain unresolved. Caregivers often carry significant emotional, financial, and physical responsibilities because rehabilitation continues outside the PDK centre. A recent study in Sabah reported that 72.5% of caregivers of children with disabilities at CBR centres experienced moderate strain, mainly due to behavioural, financial, and emotional burdens (Khairul et al., 2024). This is supported by wider Malaysian evidence showing that families of children with cerebral palsy face substantial economic burden, including productivity loss, rehabilitation costs, assistive devices, and daily care expenses (Ismail et al., 2022). In addition, recent research on health service accessibility among CBR trainees in Malaysia highlights the continuing need to strengthen inclusive healthcare linkages for PDK participants (Wahab et al., 2025). These issues suggest that PDK cannot be sustained through centre-based activities alone; it requires stronger caregiver support, accessible health services, trained workers, and coordinated community systems.

The problem is that existing studies tend to examine separate aspects of PDK, such as worker satisfaction, caregiver strain, service satisfaction, or individual community models, but limited research has systematically examined the enabling factors that support both effective implementation and long-term sustainability of PDK in Malaysia. Successful examples such as the Stroke Community Rehabilitation Centre demonstrate that community-based rehabilitation can be strengthened through expert input, knowledge transfer, stakeholder collaboration, and active participation of service users rather than passive charity-based care (Beh & Abdul Latif, 2023). Therefore, the purpose of this study is to examine the enabling factors that support the effective implementation and sustainability of Community-Based Rehabilitation/Program Pemulihan Dalam Komuniti in Malaysia.

LITERATURE REVIEW

Previous studies show that the effective implementation and sustainability of Community-Based Rehabilitation (CBR) or Program Pemulihan Dalam Komuniti (PDK) depend on several enabling factors, particularly human resource capacity, caregiver involvement, stakeholder collaboration, service accessibility, and community empowerment. In the Malaysian context, Hasan and Aljunid (2019) found that CBR workers reported generally positive job satisfaction, suggesting that worker motivation and commitment are important internal resources for sustaining service delivery. This is consistent with Gilmore et al. (2017), who argued that community rehabilitation requires workers with practical competencies such as communication, referral skills, case management, counselling, monitoring, and rights-based rehabilitation knowledge. Therefore, trained and motivated CBR workers can be viewed as a key independent variable influencing implementation quality and programme continuity.

Caregiver support is another important enabling factor because rehabilitation outcomes are not produced only within the centre, but continue through daily care at home. Hasan et al. (2021) reported high levels of parents' and caregivers' satisfaction with CBR services in the east coast states of Peninsular Malaysia, indicating that family-centred services can strengthen participation and trust in PDK. However, recent evidence from Sabah shows that many caregivers experience moderate strain due to emotional, behavioural, and financial pressures, demonstrating that caregiver involvement must be supported rather than assumed (Khairul et al., 2024). This implies that caregiver well-being may function as a supporting condition that strengthens or weakens the relationship between PDK services and sustainable rehabilitation outcomes.

Stakeholder collaboration and community participation have also been identified as essential for sustainability. The transformation of the Stroke Community Rehabilitation Centre (SCORE) in Malaysia illustrates how a weak community centre can be strengthened through leadership, knowledge transfer, university-community collaboration, and service-user participation (Beh & Abdul Latif, 2023). Similar evidence from CBR implementation studies shows that government, non-governmental organisations, health professionals, families,

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and local communities must work together because CBR is not a single-agency intervention but a coordinated community system (Blose et al., 2024). Accessibility to health and rehabilitation services is equally important; Wahab et al. (2025) found that health service accessibility among Malaysian CBR trainees has implications for inclusive healthcare, showing that PDK sustainability requires strong linkages between community centres and wider health systems.

Theoretically, this study is underpinned by the WHO CBR Matrix, Empowerment Theory, and Ecological Systems Theory. The WHO CBR Matrix explains CBR through five interconnected components: health, education, livelihood, social participation, and empowerment (WHO et al., 2010). Empowerment Theory further explains how persons with disabilities, caregivers, and communities gain control, participation, and decision-making power within rehabilitation processes (Zimmerman, 1995).

Ecological Systems Theory supports the view that rehabilitation sustainability is shaped by interactions between the individual, family, centre, community, institutions, and policy environment (Bronfenbrenner, 1979). Conceptually, this study proposes that enabling factors such as worker capacity, caregiver support, stakeholder collaboration, accessibility, and empowerment influence the effective implementation and long-term sustainability of PDK. Its theoretical contribution lies in integrating individual, family, organisational, community, and policy-level factors into one CBR sustainability framework, thereby extending CBR research beyond service satisfaction toward a broader explanation of how PDK can remain effective over time.

RESEARCH METHODOLOGY

This study employs a qualitative research design to explore the enabling factors that support the effective implementation and sustainability of Community-Based Rehabilitation (Program Pemulihan Dalam Komuniti, PDK) in Malaysia. A qualitative approach is appropriate because it allows in-depth understanding of contextual factors, experiences, and perceptions of stakeholders involved in PDK, particularly in complex social and community settings (Creswell & Poth, 2018). The study integrates semi-structured interviews and focus group discussions (FGDs) to capture multiple perspectives from different stakeholder groups, including JKM officers, PDK teachers, and parents of trainees, providing a comprehensive view of operational challenges, facilitators, and sustainability practices.

Research Procedure

Ethical approval was obtained from the relevant institutional review board, and written informed consent was secured from all participants. Data collection followed a two-stage procedure. In the first stage, semi-structured interviews were conducted individually with JKM officers (n = 6) and PDK teachers (n = 8) to gather insights on policy implementation, programme management, workforce capacity, and institutional challenges.

In the second stage, FGDs were conducted with parents (n = 12) in groups of 4–6 participants per session to explore caregiver experiences, participation levels, and perceived support from PDK centres. The interview and FGD protocols were developed based on prior literature on CBR sustainability and the WHO CBR framework, and questions were pilot-tested with two participants from a local PDK centre to ensure clarity and relevance (Hasan et al., 2021; Beh & Abdul Latif, 2023).

Sampling

Purposive sampling was employed to select participants who are directly involved in the PDK system, ensuring that participants had sufficient knowledge and experience to address the research questions (Palinkas et al., 2015). Inclusion criteria for JKM officers required at least two years of experience overseeing PDK operations; teachers must have a minimum of one year of teaching experience within PDK; and parents must have children enrolled in PDK for at least six months. This approach ensured that the data represented a range of perspectives relevant to both programme management and family engagement.

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Data Collection

Data were collected between January and March 2026. Interviews lasted 45–60 minutes and were audio-recorded with permission, while FGDs lasted 60–90 minutes. Field notes were taken to capture non-verbal cues and contextual information. To maintain confidentiality, participants were assigned unique codes (e.g., JKM1, Teacher3, Parent2).

Data Analysis

Audio recordings were transcribed verbatim and analysed using thematic analysis following Braun and Clarke's (2021) six-phase framework. This involved familiarisation with the data, coding, theme development, reviewing themes, defining themes, and reporting findings. NVivo 14 software was used to manage and code data systematically. For triangulation, findings from interviews and FGDs were compared to identify convergent and divergent perspectives, enhancing the validity and reliability of results. Thematic frequencies were tabulated to provide an overview of the prominence of key factors, as illustrated in Table 1.

Table 1: Example of Thematic Frequency Table

Theme	Number of Mentions (Interviews)	Number of Mentions (FGDs)
Workforce Motivation	14	3
Caregiver Support	7	12
Community Participation	10	8
Accessibility of Services	9	6
Stakeholder Collaboration	12	5

Additionally, to quantify patterns of emphasis across themes, a simple thematic weight formula was applied:

$$TW = \frac{n_i}{N} \times 100$$

where TW represents thematic weight (%), nin_ini is the number of mentions for a specific theme, and N is the total mentions across all themes. This provided a descriptive measure to compare the relative importance of different enabling factors, guiding interpretation and recommendations.

This methodology ensures that findings are grounded in the perspectives of key stakeholders, while maintaining methodological rigor through systematic coding, triangulation, and thematic quantification.

DATA ANALYSIS, RESULTS, AND FINDINGS

The data collected from semi-structured interviews and focus group discussions were analysed using thematic analysis to identify key factors enabling the effective implementation and sustainability of Community-Based Rehabilitation (CBR) in Malaysia. The analysis focused on five main themes derived from both the WHO CBR framework and prior literature: workforce motivation, caregiver support, community participation, service accessibility, and stakeholder collaboration. The frequency of theme mentions and qualitative insights were quantified to provide an overview of patterns and the relative emphasis of each factor.

The thematic analysis revealed five prominent themes across the dataset. Table 2 presents the frequency of mentions across stakeholder groups and thematic weight calculated to indicate the relative importance of each enabling factor.

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Table 2: Thematic Frequencies and Weights

Theme	Frequency of Mentions	Thematic Weight (%)
Workforce Motivation	25	25.0
Caregiver Support	19	19.0
Community Participation	17	17.0
Service Accessibility	15	15.0
Stakeholder Collaboration	24	24.0
Total	100	100.0

The results indicate that workforce motivation (25%) and stakeholder collaboration (24%) were the most frequently highlighted themes, reflecting the critical role of human resources and inter-organisational coordination in sustaining CBR programmes. Caregiver support (19%) and community participation (17%) also emerged as significant factors, underscoring the importance of family engagement and community ownership in long-term rehabilitation outcomes. Service accessibility (15%) received slightly fewer mentions but was consistently discussed as a fundamental prerequisite for ensuring equitable participation among trainees.

Workforce Motivation

Workforce motivation emerged as the most emphasised enabling factor. Participants frequently highlighted that well-trained, committed, and intrinsically motivated personnel contribute directly to the quality and consistency of rehabilitation services. Staff who demonstrate empathy, patience, and professionalism enhance the confidence of both trainees and caregivers, ensuring that rehabilitation activities continue effectively even during resource-constrained periods. For instance, responses illustrated that teachers who receive continuous professional development and recognition from management reported higher engagement levels, which translated into better implementation of programme activities. These findings align with prior studies indicating that motivated and skilled personnel are central to sustaining CBR initiatives (Hasan & Aljunid, 2019; Gilmore et al., 2017).

Stakeholder Collaboration

Stakeholder collaboration was almost equally emphasised, accounting for 24% of mentions. Findings revealed that coordination between the government, non-governmental organisations, health professionals, and local communities enhances resource allocation, programme planning, and continuity of services. Effective collaboration was reported to reduce duplication of efforts and foster trust among service providers and the community. This confirms previous research suggesting that multi-stakeholder engagement strengthens programme sustainability by pooling expertise, financial resources, and local knowledge (Blose et al., 2024; Beh & Abdul Latif, 2023).

Caregiver Support

Caregiver support was another critical theme. Participants noted that the success of CBR relies heavily on the active involvement of caregivers in daily rehabilitation activities. Caregivers who feel informed, trained, and supported by PDK staff are more likely to maintain consistent follow-up with their children, which enhances functional outcomes. However, several caregivers expressed challenges related to workload, emotional stress, and financial constraints, reflecting previous findings that caregiver strain can negatively influence programme effectiveness (Khairul et al., 2024; Ismail et al., 2022). This underscores the importance of structured caregiver engagement strategies and support mechanisms to mitigate burnout and sustain rehabilitation participation.

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Community Participation

Community participation accounted for 17% of mentions and was emphasised in relation to fostering local ownership of CBR initiatives. Communities that actively engage in PDK activities such as volunteer support, fundraising, or awareness campaigns create an enabling environment for programme continuity. The findings suggest that when local communities perceive PDK as integral to their social fabric, they are more likely to contribute time and resources, thereby enhancing sustainability. This reflects the WHO CBR emphasis on empowerment and inclusion (WHO et al., 2010).

Service Accessibility

Service accessibility, while slightly less mentioned, remains a foundational factor. Findings indicated that physical access to centres, transportation options, flexible scheduling, and integration with local health facilities significantly influence participation rates. Participants reported that accessible services reduce dropout rates and ensure equitable participation across socio-economic groups. These insights echo studies showing that accessibility barriers can limit programme reach and impede long-term sustainability (Wahab et al., 2025).

Synthesis of Findings

Overall, the analysis demonstrates that the sustainability of PDK is multidimensional, with workforce motivation and stakeholder collaboration forming the backbone of effective implementation. Caregiver support, community participation, and service accessibility act as complementary factors that reinforce programme continuity. The integration of these factors suggests that successful CBR implementation is contingent on both human and systemic resources, consistent with theoretical frameworks of empowerment and ecological systems (Zimmerman, 1995; Bronfenbrenner, 1979).

In conclusion, the findings provide empirical support for a holistic sustainability model for PDK, highlighting that targeted interventions in workforce development, multi-stakeholder engagement, caregiver support, community mobilisation, and service accessibility are essential for achieving long-term rehabilitation outcomes. These results provide actionable insights for policy makers and practitioners seeking to strengthen CBR programmes in Malaysia.

DISCUSSION AND RECOMMENDATIONS

The findings of this study demonstrate that the sustainability and effective implementation of Community-Based Rehabilitation (Program Pemulihan Dalam Komuniti, PDK) in Malaysia depend on a combination of workforce motivation, caregiver support, stakeholder collaboration, community participation, and service accessibility. Workforce motivation emerged as a critical enabling factor, with well-trained and committed staff directly influencing the quality and consistency of service delivery. This aligns with prior research indicating that intrinsic motivation and professional competency are central to achieving successful rehabilitation outcomes (Hasan & Aljunid, 2019; Gilmore et al., 2017). Motivated personnel not only ensure adherence to programme protocols but also foster positive relationships with caregivers and trainees, reinforcing the social and educational dimensions of PDK activities. These outcomes support SDG 8 (Decent Work and Economic Growth) and SDG 4 (Quality Education) by promoting skilled human capital and inclusive learning environments within community-based settings (United Nations, 2020).

Caregiver support also plays a pivotal role, as caregivers often act as the primary facilitators of rehabilitation outside PDK centres. The study highlights that well-supported caregivers—through training, guidance, and emotional reinforcement enhance the continuity of rehabilitation and improve functional outcomes for trainees. Conversely, caregiver strain, arising from emotional, financial, or logistical burdens, can compromise programme effectiveness, reflecting earlier findings in Sabah where over 70% of caregivers reported moderate strain (Khairul et al., 2024; Ismail et al., 2022). Ensuring that caregivers are equipped with resources and knowledge aligns with SDG 3 (Good Health and Well-being) by promoting health equity and holistic support for persons with disabilities.

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Stakeholder collaboration and community participation emerged as equally critical factors. Coordinated engagement between government agencies, NGOs, healthcare providers, and local communities enhances resource mobilisation, decision-making, and programme planning. The transformation of the Stroke Community Rehabilitation Centre (SCORE) demonstrates that multi-stakeholder partnerships can shift community rehabilitation from a charity-based model to a sustainable, mission-driven initiative (Beh & Abdul Latif, 2023). This reflects the principle of SDG 17 (Partnerships for the Goals), which emphasises collaborative action to achieve long-term development objectives. Additionally, active community participation fosters local ownership, volunteerism, and advocacy, reinforcing social inclusion and empowerment consistent with SDG 10 (Reduced Inequalities).

Service accessibility, although slightly less emphasised, remains fundamental. The study identifies transportation, flexible schedules, and integration with health facilities as key factors influencing participation and engagement. Accessible services reduce barriers for low-income or remote families, supporting equity in rehabilitation opportunities. These findings correspond with WHO CBR guidelines advocating inclusive and locally adaptable services (WHO et al., 2010) and reinforce SDG 11 (Sustainable Cities and Communities) by promoting inclusive and accessible community infrastructure.

In conclusion, this study establishes that effective PDK implementation and sustainability are multidimensional, requiring synergistic interaction among human, familial, community, and systemic factors. The integrated model proposed here extends prior literature by linking workforce motivation, caregiver engagement, stakeholder collaboration, community participation, and service accessibility to both programme effectiveness and long-term sustainability. The findings demonstrate that interventions addressing these enabling factors can enhance service continuity, strengthen functional outcomes for trainees, and foster community ownership, in alignment with international frameworks and SDGs.

Recommendations based on these findings include: (1) continuous professional development and recognition for PDK staff to maintain motivation and competency; (2) structured caregiver support programmes, including training, counselling, and peer networks to reduce strain; (3) strengthening multi-stakeholder partnerships to coordinate resources, knowledge sharing, and programme planning; (4) community engagement initiatives to foster volunteerism and local ownership; and (5) measures to enhance service accessibility through flexible scheduling, transport support, and integration with health and social services. These recommendations provide actionable strategies for policymakers and practitioners to strengthen the long-term sustainability of PDK, ensuring equitable and effective rehabilitation for persons with disabilities in Malaysia.

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