

Utilization Community-Based Rehabilitation Methods to Improve Independence and Quality of Life for Patients with Disabilities in Nara Phirom Health Promoting Hospital, Thailand

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Abstract

The disability community activity, Nara Phirom Health Promoting Hospital in Banglen District, Nakhon Pathom, Thailand, collaborated with the Faculty of Physiotherapy, Mahidol University to support the disability community. Using the Community-based rehabilitation (CBR) method, the aim to enhance independence and quality of life. Evaluation includes IADL for independence and WHOQoL Bref-100 for quality of life. Education on health, immobilization, and exercise was provided to patients, families, and caregivers. Therapists taught physical exercises, to be repeated 2-3 times daily by caregivers and family. The 1-month program, supervised by therapists, includes standing and walking for patients with lower extremity strength of 3/5 (measured by manual muscle testing). Rehabilitation involves crafting items like wallets and bags, stamps, and flowers from bottles. Results, patients with low function status (very dependent on other people) decreased by 64.3%, moderate function increased by 116.7% and independence increased by 111.1%. There was a significant improvement in quality of life (WHOQoL) and all domains after CBR program.

Abstrak

Kegiatan komunitas disabilitas di Nara Phirom Health Promoting Hospital, Banglen District, Nakhon Pathom, Thailand kolaborasi Prodi Fisioterapi, Fakultas Ilmu Kesehatan UMS dan Fakultas Fisioterapi, Mahidol University, Thailand bertujuan membantu meningkatkan tingkat kemandirian dan kualitas hidup pasien disabilitas dengan menggunakan metode Community-based rehabilitation (CBR). Kemandirian dievaluasi dengan The Lawton Instrumental Activities of Daily Living Scale (IADL), sedangkan kualitas hidup dievaluasi dengan WHOQoL Bref-100. Pendekatan CBR merupakan edukasi ke pasien, keluarga, care giver dan tenaga kesehatan tentang kesehatan, immobilisasi. Serta dampak immobilisasi pada tubuh dan otak. Latihan fisik diajarkan oleh terapis. Keluarga dan care giver mempunyai kewajiban untuk memberikan latihan kepada pasien 2-3 kali per hari. Program dilaksanakan selama 1 bulan, dalam pengawasan terapis di tempat tersebut. Pasien yang mempunyai kekuatan otot ekstremitas bawah 3/5 dengan manual muscle testing, dianjurkan untuk latihan berdiri dan berjalan setiap harinya. Program rehabilitasi dimodifikasi dengan merajut dompet dan tas, membuat cap kain dan membuat bunga dari botol. Program CBR selama 1 bulan mampu meningkatkan kemandirian pasien disabilitas, pasien dengan status *low function* (sangat tergantung dengan orang lain) menurun 64.3%, *moderate function* meningkat 116.7% dan independent meningkat 111.1%. Terdapat peningkatan yang signifikan pada kualitas hidup (WHOQoL) dan semua domain setelah pemberian program CBR.

1. INTRODUCTION

The definition of disability is very broad. WHO defines disability as including; (1) disorders, namely problems involving the structure and function of the body, (2) activity limitations, namely problems experienced by individuals when trying to carry out an action or task, and (3) limited participation, problems in dealing with life situations (for example, social, vocational) (WHO, 2020a). The term disability does not tend to refer to limitations involving health conditions, but WHO views disability as an interaction between the environment and the person. Disability is not an inevitable part of ageing, but the likelihood of experiencing a disability or living with a disability increases with age (WHO, 2019). It is very rare for disability to occur in people under 65 years of age. But it increases to 50% after age 65 and over, and more than a third live with severe disability. Elderly people aged 80 years and over will experience 75% disability and 60% will be classified as having severe disability. Some disabilities occur due to the ageing process. For example, decreased vision, muscle weakness and degenerative diseases such as arthritis. The problem of reduced vision is common in the elderly. Elderly people aged 80 years will experience decreased vision due to cataracts around 70%, developing into 20% in the form of maculopathy and 7% glaucoma (UNDESA, 2019).

Disabilities often limit a person from carrying out self-satisfying activities to be happy and carry out daily activities, which results in impaired social participation. Care for seniors with disabilities is not easy, not only financially, but also emotionally. WHO recommends designing programs for people with disabilities that aim to help people with disabilities regain functional abilities and mental health (UNDESA, 2021). The rehabilitation program is an essential part which includes activities to promote good health (promotive), disease prevention (preventive), treatment (curative) and care (palliative care). Care for disabilities includes many methods and principles, including community-based rehabilitation.

Community-based rehabilitation (CBR) was designed as a model for cost-effective community or home-based rehabilitation that could be established in developing countries (Butura et al., 2024). CBR has evolved into a multi-sectoral strategy within community development for the rehabilitation, equalisation of opportunities, and social integration of people with disabilities. It involves the combined efforts of persons with disabilities (PWDs), their families, and communities. The CBR has five key components, known as the CBR matrix: health, education, livelihood, social participation, and empowerment. Health focuses on wellness, disease prevention, medical care, rehabilitation, and assistive devices. Education covers childhood, non-formal, and formal education. Livelihood includes skill development, self-employment, waged employment, financial services, and social protection. Social participation involves personal assistance, relationships, marriage and family, culture, religion, arts, sports, recreation, leisure, and access to justice. Empowerment emphasises social mobilisation, political participation, self-help groups, and disabled people's organizations. (Adaka, Florence, & Ikwem, 2014; Yahya, Surajo, Musa, & Vol, 2018; Rahayu & Ambarwati, 2021).

Independence is the ability of someone for decision-making in their life and the capacity to execute their tasks full of responsibilities without relying on other people's help. The condition of workers with disabilities has an impact on their independence level to do their basic daily activities such as bathing, eating, going to the toilet, preparing meals, shopping, and transferring or walking (Motamed-Jahromi & Kaveh, 2020). While, quality of life is a life condition in the context of the system, values, and culture where they live based on the individual perception and related to the goals, expectations, standards, and interests of each individual's life (Estoque et al., 2019). There are many factors affecting the quality of life; they are the physical, spiritual, and health condition, level of independence, the relationship with the social environment (Daengthern, Thojsampa, Kumpeera, Wannapornsiri, & Boonpracom, 2020).

The Nara Phirom Health Promoting Hospital at Naraphirom, Banglen District, Nakhon Pathom is one of places that has patients with disability. This is the first referral hospital or what is called primary health service. In Indonesia, it is often referred to as Puskesmas. This place is one of the fostered communities of the Faculty of Physical Therapy, Mahidol University of Thailand. The rehabilitation activities are programmed, monitored and evaluated by a team from the Faculty of Physical Therapy, Mahidol University. This community activity carried out are a form of collaboration between the UMS physiotherapy faculty and the Mahidol University Physiotherapy Faculty, to implement the CBR program for people with disabilities who are treated at Nara Phirom hospital.

Patients in The Nara Phirom Health Promoting Hospital at Naraphirom, Banglen District, Nakhon Pathom suffered paraparesis and paraplegia of the lower extremities due to trauma and other diseases such as tumors and tuberculosis in their spine, and also there were patients had paralysis due to stroke accident. They live in that hospitals to get treatments and rehabilitation. These patients could not do daily activities independently, therefore, the hospital employed nurses, caregivers and even involved families to help with patient activities. The observations to these patients found some complications because of their immobilisation, such as ulcus decubitus, decreased muscle strength of lower and upper extremity, decreased cardiovascular and pulmonary function due to limited activity and decreased central nervous system performance which will reduce cognitive abilities.

Observations were also carried out for caregivers and families who took care of patients. They seemed tired because of the patient's dependent condition. The family took turns caring for the patient at the hospital. alternately

coming in the morning and evening. the level of need is relatively high because patients were unable to stand and walk to the bathroom, ultimately the purchase and use of diapers became very high.

From that observation, the quality of life (QoL) of patients was low because dependent on life with other people. Measures of QOL are important in demonstrating the effectiveness of policies, programmes or treatments (Flanagan, Damery, & Combes, 2017; Lam & measures, 2010). Therefore, this activity provided the Community-Based Rehabilitation approach as solution to help the patients become more independent. However, evidence for the clinical and cost-effectiveness of CBR is limited. Where evaluations exist the focus has primarily been on process-orientated outcomes rather than changes in the health or social status of individuals or community improvements. Thus, the CBR strategy can only be facilitated by empirical evidence of its effectiveness of the CBR strategy. Furthermore, the complete review of CBR evaluations has been difficult because few quality reports on CBR have been published (Chung, 2019; Grandisson, 2015). The lack of reports hinders the understanding of the effectiveness of CBR programmes. The earliest study on the impact of CBR followed up the results in five countries, namely Botswana, India, Mexico, Pakistan and Sri Lanka which was an early indication of the effectiveness of the practice (Association & Organization, 2002; Umunnah, Adegoke, Uchenwoke, Igwesi-Chidobe, & Alom, 2023). However, the impact of CBR on independence and QoL PWDs in Indonesia is not known. Therefore, this activity aimed to determine (1) the effectiveness of the CBR Approach On independence and QoL for people with physical disabilities, (2) increase patient knowledge about the importance of health in people with disability and mobilisation in quality of life, (3) increase family and caregivers knowledge about health in people with disability and mobilisation for their load.

2. METHODS

This community activity was conducted with people with disability in the disability community, Nara Phirom Health Promoting Hospital di Naraphirom, Banglen District, Nakhon Pathom, from April to May 2023. These people were patients in Naraphirom Hospital. Naraphirom Hospital is called Puskesmas or Primary Health Service in Indonesia. These patients stay in the health center for a long period because they receive treatment for the disease they suffer from.

This activity divided into many steps, including (1) an online meeting with the Physiotherapy team from Mahidol University and discussed about the purposes of the program, (2) analyzed the situation in Phirom Health Promoting Hospital, (3) determined program approval with PT Mahidol, (4) prepared schedules and activities, (5) program implementation, (6) measured IADL and WHOQoL before education, (7) education to patients, families, caregivers and health professionals about health, immobilisation and the importance of movement, (8) Provided routine exercises/movements for patients, families and/or caregivers for lower extremities and how to help patients learn to stand and walk for patients with lower extremity muscle strength was more than 3/5 (measured by manual muscle testing), (9) collaborated with other rehabilitation teams to provide skills to patients such as making knitting into wallets, bags and cellphone holders, stamping fabrics and making flowers from used bottles and (10) monitoring and evaluation program including measured IADL and WHOQoL after education. The flow of this activity is described in Figure 1.

The program designed and provided to patients at this hospital was focused on caregivers, family and patients. The family or caregiver is the spearhead of the quality of life of patients with immobilisation because the family or caregiver will move or provide exercises to the patient every day, apart from the therapist or nurse who does it. There are limited therapists or nurses at Naraphirom Hospital, so they can only carry out therapy in the morning. The caregiver and family got education from the team about the importance of movement and how to move patients every day. This program was called Community Based Rehabilitation (CBR). CBR needed can be carried out 2-3 times a day by caregivers or family to patients. The therapist monitored the CR in that hospital. Each patient had a log book that must be filled out about their exercise. The therapist reviewed that logbook in that hospital.

The measuring independence was using Lawton-Browdy instrumental activities of daily living scale. The Lawton Instrumental Activities of Daily Living Scale (IADL) is an easy to administer assessment instrument that provides self-reported information about functional skills necessary to live in the community. Administration time is 10-15 minutes. The instrument is most useful for identifying how a person is functioning at present, and to identify improvement or deterioration over time. The Lawton IADL is an appropriate instrument to assess independent living skills (Lawton & Brody, 1969). These skills are considered more complex than the basic activities of daily living.

Further, the QoL was identified by the WHOQoL Bref-100 scale. It is internationally and easily scaled to measure QoL for all conditions. It has 26 items and 4 domains (physical, psychological, social and environment), with a 5-point Likert interval scale designed and tested to reflect intensity, capacity, frequency and evaluation, and one of these was attached to each item (WHO, 2020b). This scale also has an Indonesian form.

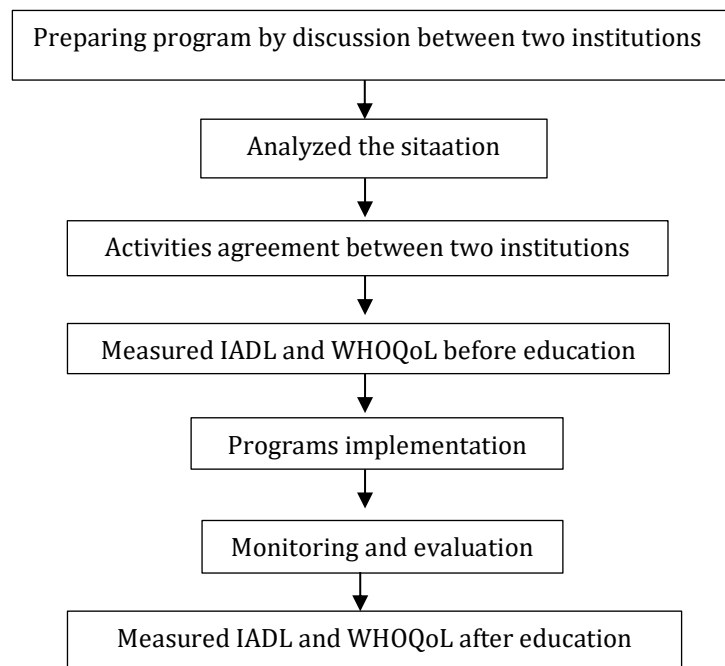


Figure 1. The flow of the activity

3. RESULTS AND DISCUSSION

Results

This division was attended by 9 workers who served in the rehabilitation services section for the community around the puskesmas and patients who lived in the rehabilitation center of the puskesmas. There are 17 patients currently in the service program with paraplegia from various causes. 10 patients are in home care and 7 patients are in the rehabilitation program at the community health center. 9 workers work alternately to serve patients. The results obtained after the workers received education or guidance from the team stated that the number of dependent patients had decreased. Complete data shows in table 3.

Table1. Characteristics respondents

Variable	N(%)	Mean±SD
Gender		
Men	26 (52%)	
Women	24 (48%)	
Age		35.9±6.9
Marital status		
Single	4 (8%)	
Maried	33 (66%)	
Widowed	13 (26%)	
Types of disability		
Hands	18 (36%)	
Fingers	7 (14%)	
Arms	8 (16%)	
eyes	0 (0%)	
Feet	5 (10%)	
Body	12 (24%)	
Head	0 (0%)	
Kinds of disability		
Disability in anatomical structure	29 (58%)	
Functional disability	21 (42%)	

Table 1 shows that almost the same number between men and women, married status was dominant in this activity and mostly the patients had disability in their hands caused by anatomical structure

Table 2 List of progress in measuring variables after providing education to patients by IADL scale at Primary Health Care Naraphirom, Banglen District, Nakhon Pathom

Variabel ukur	Pre education (pasien)	Post education (pasien)
Low function, dependent	14	9
Moderate function, moderate dependent	18	21
High function, Independent	18	20
Total	50	50

Table 2 describes the improvement of education for patients with disability at Primary Health Care Naraphirom, Banglen District, Nakhon Pathom showed an increasing number of people with moderate function from 18 to 21.

Table 3 Quality of Life Before and After Education identified by WHOQoL-Bref Scale

Variable	Before Education	After Education
	Mean± SD	Mean± SD
Total WHOQoL	64±6.7	75±4.4
Physical	18.9 ± 1.9	23.1 ± 2.2
Psychological	17.2 ± 1.9	19.4 ± 1.0
Social	9.3 ± 1.6	10.6 ± 1.0
Environment	18.6 ± 2.3	22.3 ± 1.8

Table 3 informs the significant effect of the community-based rehabilitation approach on raising the QoL of patients with disability at Primary Health Care Naraphirom, Banglen District, Nakhon Pathom. The total score of WHOQoL and all domains

(physical, psychological, social and environmental) were better properly after education.

Discussion

This activity has done very well in the disability community, Nara Phirom Health Promoting Hospital di Naraphirom, Banglen District, Nakhon Pathom. the number of women and men was almost the same and single status was dominant as well. The type of disability in the hand has the highest number, then followed by body disability part. Disability in the hand is more common than in other parts of the body for several reasons. The hand's complex structure and function, comprising numerous bones, joints, tendons, and nerves, make it susceptible to injuries and conditions leading to disability. High usage of hands in daily activities increases the likelihood of repetitive strain injuries, accidents, and wear and tear over time. Many occupations involve manual labour or tasks that stress the hands, resulting in higher rates of work-related injuries. Hands are often the first body parts to encounter hazards, making them prone to cuts, fractures, and other injuries. Medical conditions such as arthritis, carpal tunnel syndrome, and tendinitis frequently affect the hands, leading to disability. Additionally, as people age, the cumulative impact of using their hands throughout their lives can result in conditions that impair hand function (Barr, Barbe, & Clark, 2004).



Figure 2. Activity agreement with the director and PT's of disability community, Nara Phirom Health



Figure 3. Balance exercise to improve stability and independence

The level of IADL shows improvement after giving education. The sum of people with high function increased by 1.1%, while people with low function decreased from 14 to 9 people. Furthermore, the total score of WHOQoL increased by 11 points. All domains in WHOQoL improved also very well. In fact, the CBR program in this activity succeeded in improving the IADL and QoL conditions of disabled people in the disability community, Nara Phirom Health Promoting Hospital di Naraphirom, Banglen District, Nakhon Pathom.

Community-based rehabilitation approaches by giving education to all sides (family, caregivers and patients) are significant useful in improving the quality of life of patients with disabilities. Patient independence also appears to increase. From an economic perspective, this approach is very helpful in reducing the burden on patients and families.

The importance of providing health education to people with disabilities cannot be overstated. People with disabilities often face unique challenges in understanding and accessing health information, which can impact their overall well-being. Health education tailored to their needs and conditions can not only help increase understanding of the health conditions they may experience, but also provide the knowledge and skills necessary to manage health conditions, prevent disease, and achieve optimal health. Additionally, with a better understanding of health, people with disabilities can become more active partners in decisions regarding their own health care, promoting autonomy and independence in their daily self-care efforts (Gréaux et al., 2023).

Rehabilitation is indispensable for individuals with disabilities as it serves as a pivotal pathway to reclaiming independence, functionality, and overall well-being. Through tailored rehabilitation programs, individuals can learn adaptive strategies to navigate daily life, regain lost skills, and cultivate resilience in facing physical, cognitive, or sensory limitations. Moreover, rehabilitation fosters a sense of empowerment by enabling individuals to actively engage in their recovery journey, enhancing their self-confidence and autonomy. By addressing specific impairments and promoting physical strength, mobility, and cognitive function, rehabilitation not only enhances the quality of life but also facilitates social integration and participation in meaningful activities, ultimately paving the way for a more inclusive and fulfilling future (Bongo, Dziruni, & Muzenda-Mudavanhu, 2018).

Independence holds significant importance for people with disabilities as it directly contributes to their sense of dignity, autonomy, and overall well-being. By fostering independence, individuals with disabilities gain greater control over their lives, decisions, and actions, allowing them to participate more fully in society and pursue their goals and aspirations (Wehmeyer & Health, 2020). Independence enables individuals with disabilities to engage in daily activities without constant reliance on others, thereby promoting self-confidence and self-esteem (Sandjojo et al., 2019). Moreover, independence fosters social inclusion and integration by reducing barriers to participation in community life. When individuals with disabilities have the skills and resources to live independently, they are better equipped to access education, employment, recreational activities, and social networks, thereby reducing isolation and promoting a sense of belonging (Castillo et al., 2020), hence need an approach to promote social life to fulfil the quality of human beings (Sandjojo et al., 2019).

The CBR is highly recommended for people with disabilities due to its holistic approach, which addresses the multifaceted needs of individuals within their communities. Unlike traditional rehabilitation settings, CBR focuses on leveraging local resources and fostering community support networks to promote inclusion, accessibility, and empowerment (Barker et al., 2021). By integrating rehabilitation services into the fabric of community life, CBR ensures that individuals with disabilities have access to a wide range of support systems, including healthcare, education, vocational training, and social services, tailored to their unique needs and circumstances. This approach not only enhances the effectiveness of rehabilitation interventions but also promotes social inclusion and reduces

stigma by fostering greater understanding and acceptance within the community (Keen et al., 2019). Furthermore, CBR empowers individuals to actively participate in their own rehabilitation process, promoting independence, self-determination, and a sense of belonging within their community. Overall, community-based rehabilitation offers a comprehensive and sustainable framework for promoting the full participation and inclusion of people with disabilities in all aspects of society (Butura et al., 2024).

The CBR requires collaboration with other professions for several reasons. First and foremost, the diverse needs of individuals with disabilities often extend beyond the expertise of a single profession. Collaborating with professionals from various fields such as healthcare, education, social work, and vocational training allows for a comprehensive and holistic approach to addressing these needs. Each profession brings unique insights, skills, and resources to the table, enabling a more tailored and effective rehabilitation process (WHO, 2010). Additionally, collaboration among different professions fosters interdisciplinary teamwork, which enhances the quality and efficiency of rehabilitation services. By working together, professionals can share knowledge, exchange ideas, and develop innovative solutions to complex challenges faced by individuals with disabilities. This interdisciplinary approach ensures that rehabilitation interventions are evidence-based, culturally sensitive, and responsive to the diverse needs of the community (Morgan, Barroso, Bateman, Dixson, & Brown, 2020).

Furthermore, collaboration with other professions facilitates continuity of care and seamless transitions between different stages of the rehabilitation process. For example, a person with a disability may require medical care, followed by physical therapy, assistive device provision, and vocational training. By collaborating closely with professionals from each of these areas, CBR programs can ensure a coordinated and integrated approach to meeting the individual's needs at every step of their rehabilitation journey (Witt Sherman et al., 2020). Overall, collaboration with other professions is essential for the success of community-based rehabilitation programs, enabling comprehensive, person-centered care that maximizes the potential for individuals with disabilities to achieve optimal independence, participation, and quality of life (Witt Sherman et al., 2020).

4. CONCLUSION

CBR is highly recommended for people with disabilities for several compelling reasons. Firstly, CBR operates within the community context, making it more accessible and relevant to individuals with disabilities. By bringing rehabilitation services directly to their communities, CBR eliminates many of the barriers that might prevent people with disabilities. Secondly, CBR takes a holistic approach to rehabilitation, addressing not only the physical impairments of individuals with disabilities but also their social, economic, and environmental needs. People with disabilities have limitations due to the limited function of their body parts. thus, need other people to help with their daily activities. Therefore, knowledge about independence and quality of life is very important for people with disabilities. Family and caregivers are the main agents who can help increase the patient's independence. Therefore, the patient's exercise monitoring program by the family or caregivers must still be carried out so that the patient's independence and quality of life is maintained.

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REFERENCES

- Adaka, A., Florence, O., & Ikwem, E. J. I. J. T. I. E. (2014). Implementation of community-based rehabilitation in Nigeria: the role of family of people with disabilities. *1*(2), 420-425.
- Association, S. O. o. D. P. I. A., & Organization, W. H. (2002). *Community-based rehabilitation as we have experienced it: voices of persons with disabilities in Ghana, Guyana and Nepal. Part 2, Country reports*: World Health Organization.
- Barker, K. L., Room, J., Knight, R., Dutton, S., Toyne, F., Leal, J., . . . Beard, D. J. B. o. (2021). Home-based rehabilitation programme compared with traditional physiotherapy for patients at risk of poor outcome after knee arthroplasty: the CORKA randomised controlled trial. *11*(8), e052598.

- Barr, A. E., Barbe, M. F., & Clark, B. D. (2004). Work-related musculoskeletal disorders of the hand and wrist: epidemiology, pathophysiology, and sensorimotor changes. *J Orthop Sports Phys Ther*, *34*(10), 610-627. doi:10.2519/jospt.2004.34.10.610
- Bongo, P. P., Dziruni, G., & Muzenda-Mudavanhu, C. (2018). The effectiveness of community-based rehabilitation as a strategy for improving quality of life and disaster resilience for children with disability in rural Zimbabwe. *Jamba*, *10*(1), 442. doi:10.4102/jamba.v10i1.442
- Butura, A. M., Ryan, G. K., Shakespeare, T., Ogunmola, O., Omobowale, O., Greenley, R., & Eaton, J. (2024). Community-based rehabilitation for people with psychosocial disabilities in low- and middle-income countries: a systematic review of the grey literature. *Int J Ment Health Syst*, *18*(1), 13. doi:10.1186/s13033-024-00630-0
- Castillo, E. G., Ijadi-Maghsoodi, R., Shadravan, S., Moore, E., Mensah, M. O., 3rd, Docherty, M., . . . Wells, K. B. (2020). Community Interventions to Promote Mental Health and Social Equity. *Focus (Am Psychiatr Publ)*, *18*(1), 60-70. doi:10.1176/appi.focus.18102
- Chung, E. Y. (2019). Identifying evidence to define community-based rehabilitation practice in China using a case study approach with multiple embedded case study design. *BMC Health Serv Res*, *19*(1), 6. doi:10.1186/s12913-018-3838-7
- Daengthorn, L., Thojsampa, S., Kumpeera, K., Wannapornsiri, C., & Boonpracom, R. (2020). Factors Affecting Quality of Life and Longevity in the Elderly People in Phrae City, Thailand. *Asian Pac Isl Nurs J*, *5*(2), 48-54. doi:10.31372/20200502.1081
- Estoque, R. C., Togawa, T., Ooba, M., Gomi, K., Nakamura, S., Hijioka, Y., & Kameyama, Y. (2019). A review of quality of life (QOL) assessments and indicators: Towards a "QOL-Climate" assessment framework. *Ambio*, *48*(6), 619-638. doi:10.1007/s13280-018-1090-3
- Flanagan, S., Damery, S., & Combes, G. (2017). The effectiveness of integrated care interventions in improving patient quality of life (QoL) for patients with chronic conditions. An overview of the systematic review evidence. *Health Qual Life Outcomes*, *15*(1), 188. doi:10.1186/s12955-017-0765-y
- Grandisson, M. (2015). *Developing Guidelines for Program Evaluation in Community-Based Rehabilitation*. Université d'Ottawa/University of Ottawa,
- Gréaux, M., Moro, M. F., Kamenov, K., Russell, A. M., Barrett, D., & Cieza, A. (2023). Health equity for persons with disabilities: a global scoping review on barriers and interventions in healthcare services. *Int J Equity Health*, *22*(1), 236. doi:10.1186/s12939-023-02035-w
- Keen, C., Hashmi-Greenwood, M., York, J., Armstrong, I. J., Sage, K., & Kiely, D. J. P. c. (2019). Exploring a physiotherapy well-being review to deliver community-based rehabilitation in patients with pulmonary hypertension. *9*(4), 2045894019885356.
- Lam, C. J. H. o. d. b., & measures, q. o. l. (2010). Subjective quality of life measures—general principles and concepts.
- Lawton, M. P., & Brody, E. M. (1969). Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist*, *9*(3), 179-186.
- Morgan, K. H., Barroso, C. S., Bateman, S., Dixson, M., & Brown, K. C. (2020). Patients' Experiences of Interprofessional Collaborative Practice in Primary Care: A Scoping Review of the Literature. *J Patient Exp*, *7*(6), 1466-1475. doi:10.1177/2374373520925725
- Motamed-Jahromi, M., & Kaveh, M. H. (2020). Effective Interventions on Improving Elderly's Independence in Activity of Daily Living: A Systematic Review and Logic Model. *Front Public Health*, *8*, 516151. doi:10.3389/fpubh.2020.516151
- Rahayu, U. B., & Ambarwati, A. (2021). PKM Edukasi dan Neurorestorasi pada Pasien Pasca Stroke di Praktik Fisioterapi Mj_9 Fisioterapi Center. *Warta LPM*, *24*(1), 1-10.
- Sandjojo, J., Gebhardt, W. A., Zedlitz, A. M., Hoekman, J., den Haan, J. A., Evers, A. W. J. J. o. P., & Disabilities, P. i. I. (2019). Promoting independence of people with intellectual disabilities: A focus group study perspectives from people with intellectual disabilities, legal representatives, and support staff. *16*(1), 37-52.
- Umunnah, J., Adegoke, B., Uchenwoke, C., Igwesi-Chidobe, C., & Alom, G. J. G. H. J. (2023). Impact of community-based rehabilitation on quality of life and self-esteem of persons with physical disabilities and their family members.

- UNDESA. (2019). World Population Ageing 2019. <https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Highlights.pdf>
- UNDESA. (2021). Disability and Social Inclusion. <https://www.un.org/development/desa/disabilities/disability-and-social-inclusion.html>
- Wehmeyer, M. L. J. I. J. o. E. R., & Health, P. (2020). The importance of self-determination to the quality of life of people with intellectual disability: A perspective. *17*(19), 7121.
- WHO. (2010). WHO Guidelines Approved by the Guidelines Review Committee. In C. Khasnabis, K. Heinicke Motsch, K. Achu, K. Al Jubah, S. Brodtkorb, P. Chervin, P. Coleridge, M. Davies, S. Deepak, K. Eklindh, A. Goerd, C. Greer, K. Heinicke-Motsch, D. Hooper, V. B. Ilagan, N. Jessup, C. Khasnabis, D. Mulligan, B. Murray, A. Officer, F. Ortali, B. Ransom, A. Robert, S. Stubbs, M. Thomas, V. Balakrishna, R. Wabuge-Mwangi, N. Mattock, & T. Lander (Eds.), *Community-Based Rehabilitation: CBR Guidelines*. Geneva: World Health Organization
- Copyright © World Health Organization 2010.
- WHO. (2019). Disability and Health: Features. <https://www.cdc.gov/ncbddd/disabilityandhealth/features/disability-impacts-all.html>
- WHO. (2020a). Disability: People with disability vs persons with disabilities. *People with disability” vs “persons with disabilities*.
- WHO. (2020b). WHOQOL: Measuring Quality of Life. *Indonesian_WHOQOL-BREF*. <https://www.who.int/tools/whoqol/whoqol-bref/docs/default-source/publishing-policies/whoqol-bref/indonesian-whoqol-bref>
- Witt Sherman, D., Flowers, M., Alfano, A. R., Alfonso, F., De Los Santos, M., Evans, H., . . . Walsh, S. (2020). An Integrative Review of Interprofessional Collaboration in Health Care: Building the Case for University Support and Resources and Faculty Engagement. *Healthcare (Basel)*, *8*(4). doi:10.3390/healthcare8040418
- Yahya, A. T., Surajo, A. Z., Musa, J. J. J. o. R. T., & Vol, E. D. (2018). Community-based rehabilitation programmes in Kano State, Nigeria: an inclusive and integrated approach for sustainable national development. *1*(1).