



(REVIEW ARTICLE)



Implementing preventive healthcare strategies in early intervention

Feng-Chen Lin *

Assistant Professor, Department of Early Childhood and Education, Mackay Medicine, Nursing and Management College, Taipei, Taiwan.

World Journal of Advanced Research and Reviews, 2024, 22(02), 1570–1576

Publication history: Received on 09 April 2024; revised on 18 May 2024; accepted on 20 May 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.22.2.1548>

Abstract

In recent years, efforts to promote early intervention for children with developmental delays have been made to prevent further pathological invasion in children. Early rehabilitation through early screening not only enhances treatment effectiveness but also significantly reduces the pain and damage caused by diseases to families. In the concept of preventive healthcare strategies, it can be divided into three stages and five levels: (1) Primary prevention: can be divided into two levels, health promotion, and specific protection. (2) Secondary prevention: providing early treatment through early screening. (3) Tertiary prevention: mainly aimed at restoring the maximum function of disabilities caused by diseases, only causing minimal restrictions on personal function, and can be divided into two levels, limitation of disability, and rehabilitation treatment. In this article, besides exploring the causes of early childhood developmental disorders, the author combines preventive healthcare strategies to propose the differentiated application of early intervention in the three stages of preventive healthcare. This article reviews the current situation and challenges in Taiwan, and proposes possible responses based on scholars' views and personal opinions, aiming to enhance the quality of early intervention services provided by interdisciplinary teams.

Keywords: Preventive Healthcare; Early Intervention; Developmental Delay; Interdisciplinary Teams

1. Introduction

The arrival of a newborn in every family is a sweet burden for parents, and their greatest wish is undoubtedly for their baby to grow up safely and smoothly, not wanting their baby to lag behind at the starting line. However, how to know if one's baby will encounter obstacles or delays in development is not something every parent can discern at first glance. Some developmental delays may even go unnoticed until the baby enters kindergarten and interacts with peers [1][2]. At this time, special education teachers, preschool teachers, or early intervention professionals in kindergartens should quickly provide relevant information and appropriate rehabilitation channels to parents in need.

Developmental delay refers to when a child lags significantly behind in any developmental domain compared to what is expected for their age due to congenital or acquired physiological factors, such as brain dysfunction, metabolic issues, genetic abnormalities, chromosomal abnormalities, unknown reasons, or adverse environmental factors [3][4]. Developmental delays exhibited by children typically include intellectual disability, cerebral palsy, visual or hearing impairments, learning disabilities, autism, or multiple disabilities. If these children with developmental delays can receive early intervention services in a timely manner, they can catch up with their age-appropriate developmental abilities during their critical periods of physical and mental development, thus avoiding insurmountable obstacles in their future lives [5]

Clinically, preventive healthcare not only provides guidance on how to teach parents to avoid having children with developmental delays safely but also urges parents of children with developmental delays to start early childhood physical and mental rehabilitation as soon as possible [6]. Such a concept is even more important for early intervention

* Corresponding author: Feng-Chen Lin

professionals, like clinical nursing staff, early intervention professionals are at the forefront of contact with patients, bridges of communication between children and parents, and important channels for providing relevant medical information to the early intervention team [7]. Therefore, early intervention professionals should possess preventive healthcare strategies to enhance their understanding of the causes of special children's diseases, promote and advocate for appropriate prevention, and early intervention of diseases to prevent learning disabilities caused by diseases, making the learning of special children in inclusive classrooms more adaptive and accepted.

Currently, the implementation of early intervention in Taiwan faces difficulties. Relevant teachers and professional teams should review their coping strategies to enhance the quality of early intervention services provided by interdisciplinary teams.



Figure 1 Evidence-based Practice in Early Intervention

2. Three Stages and Five Levels of Preventive Healthcare

In the concept of preventive healthcare, to avoid the invasion of pathogens, prevent the occurrence of diseases, or mitigate the harm caused by diseases, prevention strategies can be divided into three stages and five levels [8][9]. The following are brief introductions:

- **Primary Prevention:** This mainly involves general prevention before the pathogenic factors enter the body and can be further divided into two levels, health promotion, and specific protection [10][11].
- **Secondary Prevention:** This targets the early stages of disease development, namely the asymptomatic stage, and aims to provide appropriate treatment through early screening [12][13]. The goal is to prevent the deterioration of the disease, avoid complications, and shorten the period of disability.
- **Tertiary Prevention:** This stage involves symptomatic stages, where the main focus is on using clinical treatment methods to promote the early recovery of the disease or to restore the maximum function of disabilities caused by the disease, only causing minimal restrictions on personal function. Therefore, it can be further divided into two levels, limitation of disability, and rehabilitation treatment [14].

| Measure |
|---|
| Ages & Stages Questionnaire: Social- Emotional (ASQ-SE) |
| Modified Checklist for Autism in Toddlers (MCHAT) |
| Checklist for Autism in Toddlers (CHAT) |
| Checklist for Autism in Toddlers-23 (CHAT-23) |
| Autism Behavior Checklist (ABC) |
| Pervasive Developmental Disabilities Screening Test II (PDD ST II) |
| Gilliam Autism Rating Scale 2nd Edition (GARS-2) |
| Communication and Symbolic Behavior Scales Developmental Profile Infant/Toddler Checklist (CSBS-DP) |

Figure 2 Validated Screening Tools

These three stages and five levels of prevention are aimed at different stages of disease development, summarizing different preventive strategies [15][16]. Therefore, if prevention can be done in the early stages of disease development, it can achieve significant results with minimal effort. In recent years, efforts to promote early intervention for children

with developmental delays have been made to reduce the likelihood of children being invaded by diseases as much as possible and to improve the effectiveness of treatment, thus alleviating the pain and harm caused by diseases.

| Measure |
|--|
| Childhood Autism Rating Scale (CARS) |
| Autism Diagnostic Observation Schedule (ADOS) |
| Diagnostic and Statistical Manual-IV (DSM-IV) |
| Autism Diagnostic Interview-Revised (ADI-R) |
| International Classification of Diseases-10 (ICD-10) |
| Other* |
| No diagnoses made |

Figure 3 Validated Diagnostic Tools

3. Causes of Developmental Disabilities in Children

The target of early intervention services is children with developmental disabilities. "Developmental disabilities" refer to deviations or delays in the development of infants and young children's abilities in movement, cognition, language, and social adaptation due to congenital or acquired factors, or their development progresses slower than that of children of the same age [17]. The causes of developmental disabilities may be related to the following factors: (a) Genetic abnormalities: Chromosomal abnormalities may affect metabolism and endocrine imbalance, leading to developmental disabilities. (b) Prenatal factors: During pregnancy, factors such as maternal-fetal blood type incompatibility, substance abuse, smoking, or contracting rubella can affect fetal development [18]. (c) Birth process factors: Injuries during childbirth may cause new-borns to suffer from hypoxia in the brain. (d) Postnatal factors: Premature birth, low birth weight, infantile encephalitis, or hypothyroidism in infants can affect their brain function. (e) Environmental factors: Inadequate learning stimulation in the child's growth environment[19] (f) Unknown reasons: Many children with developmental disabilities have normal physiological function checks but still experience developmental delays.

These factors contribute to developmental disabilities in children and highlight the importance of early intervention to address these challenges effectively.

4. Application of Preventive Healthcare Strategies in Early Intervention

Based on the causes of children's developmental disabilities, the concept of disease prevention can be applied to early intervention. Below are the tasks at each stage:

- **Primary Prevention:** The focus is on health promotion and specific protection. Early intervention professionals should strengthen the dissemination of relevant knowledge, such as advocating premarital health checks and avoiding consanguineous marriage during premarital education. Prenatal counselling should focus on preventing premature birth and fetal infections, avoiding smoking, alcohol, and drug abuse. Postnatal care should emphasize disease prevention for children, nutrition status, regular preventive injections, and providing a conducive growth environment with cultural stimuli [20].
- **Secondary Prevention:** The key task is early screening, especially targeting high-risk cases for enhanced screening, early detection, and immediate referral (Kerr & Davis, 2000). Early intervention professionals detect high-risk children and potential physiological defects through environments where high-risk cases may be encountered, such as well-child clinics, kindergarten physical examinations, and home visits [21]. The commonly used screening tool is the Denver Developmental Screening Test (DDST), which is suitable for children aged 0 to 6 years. It helps to understand deviations and delays in children's development through four main areas: gross motor skills, fine motor skills, language, and personal-social skills [22].
- **Tertiary Prevention:** The focus is on limiting disabilities and rehabilitation therapy, aiming to fully realize the potential of delayed children. Through inclusive education, they are understood and accepted by society, leading a normal life [23]. Early intervention professionals should provide parents with adequate psychological support and relevant early intervention information, enabling delayed children to not only receive institutional rehabilitation but also receive more diverse stimulation, such as group music therapy, art therapy, and play therapy. Referring to early intervention case management systems or even providing home-based services allows them to receive education and enjoy life in a natural environment.

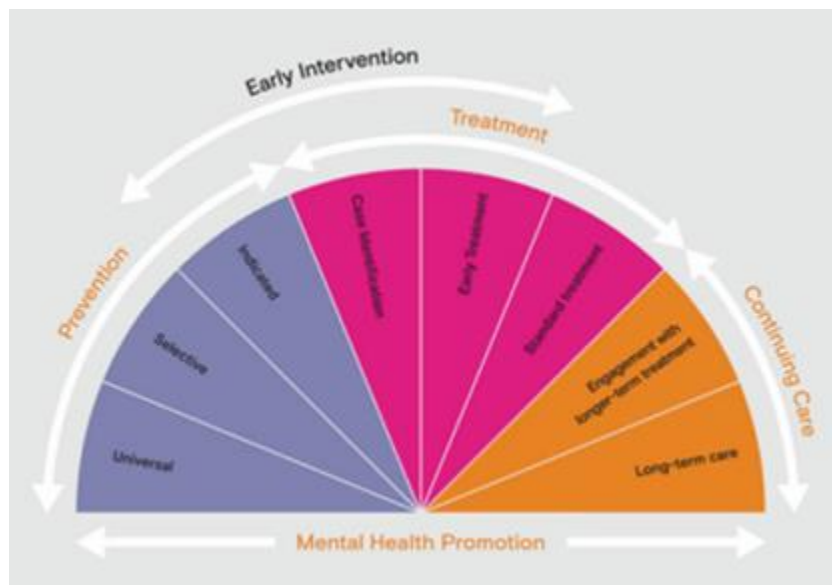


Figure 4 Prevention and Early Intervention are Part of the Spectrum of Mental Health Interventions

5. Improvement in Social Welfare and Education Policies

Currently, the training of early intervention professionals in Taiwan lags far behind that of European and American countries in terms of the social welfare system for children with developmental delays. However, it is hopeful that awareness of early intervention and related issues is gradually awakening. Based on the difficulties faced by early intervention professionals in promoting and implementing early intervention work, combined with suggestions from scholars and personal insights, the following methods for improving social welfare and education policies are proposed:

- Encourage the establishment of early intervention departments and research institutes at universities through the Ministry of Education to actively cultivate professional early intervention personnel.
- Incorporate knowledge related to developmental delays and early intervention into special education and early childhood education teacher training and continuing education, and develop the capacity for early intervention personnel and case management.
- Familiarize and utilize community resources, strengthen public education on the correct concepts of early intervention, and help children with developmental delays and their families reduce obstacles in community life.
- Special education, early childhood education, and early intervention professionals in kindergartens should proactively understand the medical network and the reporting, assessment, referral, and intervention systems of related service agencies, so that they can provide appropriate assistance when identifying high-risk cases.
- Actively participate in early intervention training courses to become integrated service early intervention professionals in the future.
- Use reliable and valid screening tools for developmental delays to assist parents in simple assessments of whether their children are experiencing developmental delays.
- Pay attention to and actively participate in relevant regulations and medical welfare systems.

6. Discussion: Challenges in Promoting and Implementing Early Intervention for Professionals

The implementation of early intervention work in Taiwan indeed faces various challenges, and relevant early intervention team members should review their coping strategies to enhance the quality of interdisciplinary early intervention services.

- **Insufficient Quantity and Quality of Professional Personnel Engaged in Early Intervention:** It is still in the initial stage of cultivating early intervention professionals in Taiwan, and the certification for early intervention professionals is yet to be promoted. Consequently, there is a severe shortage of early intervention professionals and a lack of integration, which hinders the accurate assessment of special needs children and may delay the golden treatment period [24].

- **Inadequate Cognitive Abilities of Early Intervention Professionals:** Existing special education, early childhood education, and early intervention professionals need to enhance their knowledge of early intervention and screening assessment capabilities. Moreover, they have insufficient awareness of community resources and lack experience in case management, resulting in inadequate education and advocacy for the general public and case parents, failing to popularize the correct concepts of early intervention.
- **Lack of a Comprehensive Reporting, Assessment, Referral, and Intervention System:** The resource network is not fully connected and integrated, leading to insufficient communication between the education system, medical professionals, and placement institutions [25].
- **Standardization of Assessment Tools for Identifying Children with Developmental Delays:** Currently, the selection of identification or assessment tools varies depending on the conditions of individual cases and the autonomy of professionals. Therefore, the standardization of assessment tools needs to be integrated, and consideration should be given to localizing assessment scales introduced from abroad [26].
- **Need for Improvement in Social Welfare Systems:** According to surveys, up to 46% of families with disabled members are living below the poverty line, and approximately 30% of parents of children with developmental delays have not applied for subsidies [27]. Moreover, institutions charge high fees for group or individual intervention for families without subsidies, indicating the need for the government to promote, review, and implement welfare policies for families of children with delays.

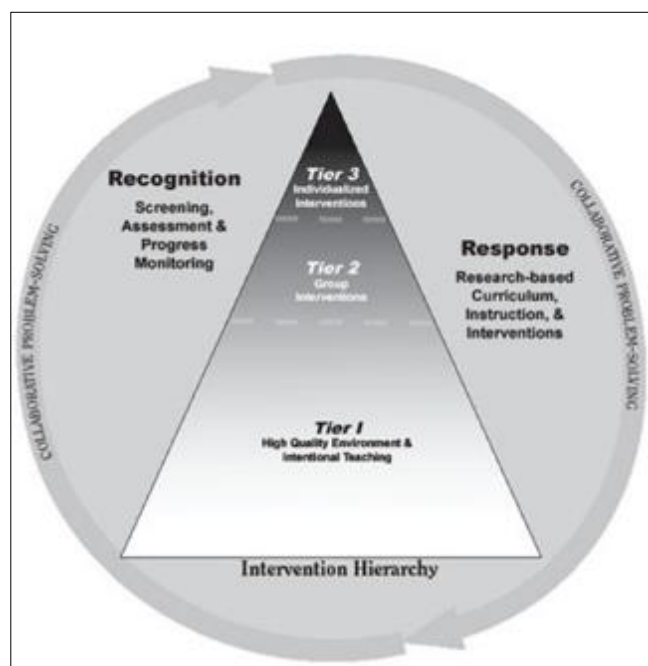


Figure 5 Recognition and Response System for Early Intervention

7. Conclusion

Developmental delays or disabilities are not incurable diseases; they simply require someone to detect them early in the child's growth process and provide special care and attention to facilitate early intervention. It is hoped that through government-planned training for early intervention professionals and the transmission of correct knowledge to them, society can be awakened to the importance of these children with developmental delays and to an understanding of early intervention. Furthermore, it is hoped that relevant intervention units can fully implement professional teamwork in early intervention, integrating educational, medical, and social resources, so that children with developmental delays can truly enjoy the joy of growth. Ultimately, they can achieve self-care and affirm their own value. Along this long journey of early intervention, accompanying the growth process will no longer be just the sighs of parents of delayed children; the silent dedication of professional teams will also witness the realization of hope and dreams in society.

References

- [1] Barr, Gilgunn, Kane et al., (2009). Health screening for people with learning disabilities by a community learning disability nursing service in Northern Ireland. *Journal of Advanced Nursing* 29, 1482-1491.

- [2] Barnett K. (2002). Building Powerful Partnerships: The Role of Hospitals in Community-based Public Health. *Community-based Public Health Policy & Practice*, 3, 1-4.
- [3] Carvill S. (2001) Senory impairments, intellectual disability and psychiatry. *Journal of Intellectual Disability Research* 45, 467-483.
- [4] Chriatianson A. L., Zwane M. E., Manga P., Rosen E., Venter A. Africa: prevalence and associated disability. *Journal of Intellectual*, 15, 69-85
- [5] Downs D. & Kromberg J. G. R. (2002) Children with intellectual disability in rural South *Disability Research* 46, 179-186.
- [6] Emerson E. (2003) Prevalence of psychiatric disorders in children and adolescents with and without intellectual disability. *Journal of Intellectual Disability Research* 47, 51-58.
- [7] Chen Shurong, Huang Meizhi (2001). Family-centered care - attitudes and coping behaviors of parents of children with developmental delays. *Nursing Journal of the Veterans General Hospital*, 16(3), 254-263.
- [8] Diana L. Kerr, Ronald M. Davis (2000). The Guide to Community Preventive Services: Managed Care/ Clinical Practice Commentary. *American Journal of Preventive healthcare*, 18, 5-6.
- [9] Guo Huangzong (1996). Early intervention for children with developmental delays. *Pediatric Medical Journal*, 37A, pp. 19-27.
- [10] Hong Meiwen (2007). Evaluation research on "community mental health care work". *Public Health*, 24(2), 109-128.
- [11] Lin Xingjun (2000). Introduction and sharing of the service model for case management of children with developmental delays: Social work intervention content and role functions. *Proceedings of the National Forum on Early Intervention Related Services for Children with Developmental Delays*, 15-30.
- [12] Lin Huifang (1998). Early intervention case management services for children with developmental delays. *Social Welfare*, 134, 62-64.
- [13] Liu Wenjun (2000). Introduction to community medicine. *NTU Community Medical Communication*, 5, 1-2.
- [14] Liu Bangfu (2002). Overview of the promotion of early intervention work for children with developmental delays in our country. *Early Intervention Results Presentation*, 6-11.
- [15] Luoto JE, Lopez Garcia I, Aboud FE, et al. (2019) Testing means to scale early childhood development interventions in rural Kenya: the Msingi Bora cluster randomized controlled trial study design and protocol. *BMC Public Health* 19: 143–164.
- [16] Ministry of the Interior Statistics Information Service Network <http://www.moi.gov.tw/w3/stat/home>.
- [17] Jorien Bakx, Christina Dietscher, Adriaan Visser. (2001). Editorial Health promoting hospitals. *Patient Education and Counseling*, 45. 237-238.
- [18] Jurgen M. Pelikan, Karl Krajic, Christina Dietscher (2001). The Health Promoting Hospital (HPH): Concept and Development. *Patient Education and Counseling*, 45. 239-243.
- [19] Snyder, P. A., Hemmeter, M. L., Fox, L., Crowe Bishop, C., & Miller, D. M. (2013). Developing and gathering psychometric evidence for a fidelity instrument: The Teaching Pyramid Observation Tool–Pilot version. *Journal of Early Intervention*, 35, 150-172.
- [20] Steed, E., Noh, J., & Heo, K. (2014). A cross-cultural comparison of positive behavioral interventions and supports in early childhood classrooms in the U.S. and South Korea. *Infants & Young Children*, 27, 30-42.
- [21] Shah R, Gustafson E, Dhaded S, et al. (2020) Integrating an Adapted, Low-Intensity Program to Promote Early Childhood Development in Routine Health Visits in Rural India: A Feasibility Study. *J Dev Behav Pediatr* 41:281–288.
- [22] Trivette, C. M., Dunst, C. J., Hamby, D. W., & Meter, D. (2012). Relationship between early childhood practitioner beliefs and the adoption of innovative and recommended practices (Research Brief, Vol. 6, pp. 1-12). *Tots 'n Tech Research Institute*, Arizona State University, Tempe, AZ.
- [23] Wang Zhenglun (2000). *Community preventive healthcare*. Taipei: Jiuzhou.

- [24] Wan Yuwei, Zhuang Huangru (1995). Planning of early intervention system for children with developmental delays from the perspective of medical and welfare integration. *Community Development Technical Journal*, 18, 72-80.
- [25] Wang Tianmiao (1996). Study on the supply and demand of early intervention services for children with intellectual developmental disabilities in Taiwan and related issues. *Journal of Special Education Research*, 14, 21-44.
- [26] Zhou Yueqing, Xu Zhaoyu (2002). Early intervention medical model and social model perspective - a case study of early intervention case management for children with developmental delays. *Proceedings of the Long-Term Care System Symposium*, 261-288.
- [27] Zhang Cihui, Huang Xiuli (2000). Clinical application of quality of life assessment. *Taiwan Medical Journal*, 4(1), 86-90.