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Advantages and challenges of integration: opportunities for integrating early childhood development and nutrition programming

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A growing body of evidence supports the notion that integrated programs addressing nutrition and stimulation provide stronger impacts on nutritional and developmental outcomes than either intervention alone. When translating evidence into practice, several advantages and challenges for integration can be noted. Combined interventions may be more efficient than separate interventions, because they are intended for the same population and make use of the same facilities, transportation, and client contacts. In addition, for families, particularly for those most at risk, combined interventions can also lead to increased access to services. However, in order for integrated nutrition and early childhood development interventions to be successful, a variety of challenges must be addressed. These include workload of staff and supervisors, communication and coordination among different ministries and among staff in different sectors, and common language and measurement. It must be acknowledged at both the national and community levels that comprehensive, integrated care addressing both the physical and developmental needs of the child is key to promoting optimal health, growth, and development for children.

Keywords: nutrition; early childhood development; integrated services

Introduction

From a scientific standpoint, there is a growing body of evidence to support the notion that integrated programs addressing both nutrition and stimulation provide stronger impacts on nutritional and developmental outcomes than either intervention alone.[1] From a programmatic standpoint, there are also many advantages and opportunities for integrating nutrition and early childhood development (ECD). However, several critical challenges must be addressed for integrated programming to be successful. This paper will discuss, from a field perspective, both the advantages and opportunities for integration, and some of the key challenges and considerations, with a focus on programming in resource-poor contexts.

Advantages and opportunities for integration: a programmatic perspective

Despite clear evidence that investment in early health and nutrition programs affects later health outcomes and mounting evidence showing that strategic investment in ECD programs influences school readiness and developmental outcomes, the practice of combining health, nutrition, and ECD interventions for their additive impact is still relatively limited.[2] However, newer data indicate that adding child development activities to conventional health and nutrition programs improves both health and development outcomes. Recent publications[3] and a growing number of international declarations (Association for the Development of Education in Africa (ADEA) ECD Communiqué, 2009;[4] United

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Nations Educational, Scientific, and Cultural Organization (UNESCO) Early Childhood Care and Education (ECCE) Moscow Framework, 2010[5]) have encouraged policymakers and program managers to consider integrated programming in response to the comprehensive and holistic needs of child development, acknowledging the effects of early environment and responsive caregiving on child outcomes.[6–8]

One of the key contributions of civil society organizations like CARE and Save the Children, and studies funded by the United Nations Children's Fund (UNICEF), the World Bank, and the World Health Organization (WHO) is that they allow us to examine promising innovative approaches to addressing the needs of young children. During the past two decades, an increasing number of exploratory integrated health–nutrition–ECD (HNECD) interventions have been piloted and evaluated. For example, the Essential Package,[9] a framework and toolkit to guide integrated programming for young vulnerable children and their caregivers, particularly those living in communities affected by HIV, has been piloted in Zambia, Mozambique, and Malawi, and is currently being implemented in several other African countries.

Today, more studies of HNECD interventions exist and there is a growing body of practice-based evidence that suggests integrated health–nutrition–development programs produce positive results for children.[10] Data from rigorous evaluations are limited, but there are several ongoing evaluations that should provide information on impact as well as factors associated with successful implementation. For example, in Malawi, Save the Children (along with the World Bank and the Government of Malawi) is adding health and nutrition programming to existing community-based child care centers (CBCCs).[11] Community health/nutrition volunteers are recruited and trained to supplement 200 CBCCs with critical health and nutrition messages as well as to ensure children enrolled in CBCCs get nutritious snacks and meals. Impact data on health, nutrition, and cognitive outcomes for children enrolled in the CBCCs are currently being analyzed. In El Salvador, Save the Children is working with Ministry of Health healthcare providers at routine health visits to offer developmental screening and basic guidance to caregivers on giving simple at-home suggestions to scaffold development.[12] In India, CARE works with Government of India Anganwadi centers (i.e., Integrated Child Development Services (ICDS) program) to enhance the quality of integration between health, nutrition, and child stimulation.[12] Child outcome data from these evaluations (i.e., development, nutrition, school readiness) will become available in the near future. In sum, multiple examples of integrated HNECD programming are emerging and each impact evaluation will shed new light on subtle elements within integrated programming that produce effects on child outcomes.

In addition to the potential for increased impact on growth and developmental outcomes, integrated programming also provides several advantages from a programmatic and advocacy perspective. Below, we posit two primary advantages in the provision of coordinated and integrated HNECD services across disciplines: increased access to ECD opportunities for young children and promotion of a comprehensive approach to address the whole child.

Increased access to ECD opportunities for young children

Although there has been a rapid recognition that early and smart investment in young children protects children from debilitating environmental factors that affect child development,[13] most policymakers in low- and middle-income countries continue to struggle to find resources to provide sustainable programs that meet the developmental and health needs of young children and their families. One key advantage of offering HNECD services is that more children gain access to health, nutrition, and child development information and resources in an efficient manner. Increased access can occur through several mechanisms, as discussed below.

Cost effectiveness of HNECD programming. A common low-cost (yet strategic) strategy is to map existing resources in a target community (both government and community based) and then identify where a modest enhancement of those existing services can offer children access to child development and health and nutrition services. Portals to providing integrated service delivery will vary depending upon the availability of services. Sometimes health and nutrition interventions will be added in coordination with ECD programs, while in other cases ECD messages are combined with existing health and nutrition programming. For example,

community health workers (coordinated by the Ministry of Health) may receive training on basic child development milestones and receive a "backpack" of simple child development messages to share when conducting growth monitoring and/or home visits. Similarly, teachers in a community-based preschool program (administered by Ministry of Education or Protection) may be trained on deworming and how to share preventive healthcare messages with children enrolled in the preschool classroom and their parents. In each case, the idea is to use the existing community resources to expand the number of children who have access to HNECD care.

There is currently a great interest and need to document the true costs and benefits of integrating interventions for young children across relevant sectors and building on existing community resources. However, at present, few studies have addressed this important element of integrated programming. Behrman *et al.* conducted a cost–benefit analysis of a large-scale home-based ECD and nutrition program in Bolivia (PIDI).[14] They assigned monetary values to higher cognitive test scores and improved anthropometrics by estimating their possible impact on earnings directly and indirectly through schooling. Results suggest that PIDI has high benefit-to-cost ratios, ranging from 1.7 to 3.7. An ongoing multiarm randomized controlled trial to evaluate the cost effectiveness of combined interventions designed to tackle chronic malnutrition in Madagascar is currently being conducted by Fernald and Galasso with support from the World Bank (2012–2015).[15] In addition, the World Bank has a Web site on analyses of costs and benefits for ECD programs, providing guidelines and resources for conducting these types of analyses.[16] Several of the integrated HNECD interventions cited previously (e.g., programs in El Salvador and India[12]) may provide an excellent opportunity for this type of cost/benefit analysis.

Colocation of services. From a parent/caregiver perspective, when health and development services are combined, this makes life much simpler. The colocation of services means a child can access the multidisciplinary services in a one-stop shop rather than travel to a health post in one location and then travel to a child development setting for education and child development resources. Anecdotal evidence suggests the costs of traveling to multiple service delivery venues can be economic (e.g., bus fare) and/or temporal (i.e., the time to get to each venue), creating barriers to access for both health and development services.[17]

Colocation of services may be especially important in the context of emergencies when insecure conditions may make travel to service delivery venues even more difficult. For example, after the Haiti earthquake in 2010, local facilitators trained in ECD, hygiene promotion, breastfeeding, and good nutrition ran baby groups in "baby tents" set up in earthquake-affected areas. The tents provided a safe, clean space for mothers and babies attending a nutritional support program to play together and learn about good nutrition and infant stimulation.[18] Simple messages or demonstration activities that address both ECD and infant and young child feeding (IYCF) might also be delivered to larger groups at sites where some mothers receive more comprehensive services and at sites where caregivers and families with young children congregate and can wait for long periods of time—for example, in reception centers, at mobile clinics, and during general food distribution.[18]

Coordinated messaging. Communicating consolidated, coordinated, and developmentally appropriate information to caregivers with limited and/or poor schooling increases the chances that the messages will be heard. When both health and educational frontline service providers have a common understanding at various levels about child development and health/nutrition, parents of young children begin to hear a simple, clear, and concrete message. Repetition of common HNECD messages effectively provides an increase in the dosage a parent/caregiver receives and can result in an increase in caregiver knowledge and practice. In our current work with the Essential Package in Asia, Central America, and Africa, a common theme throughout has been how to best prioritize messages and the reinforcement of best practices in a way that is simple, coordinated, and easily heard by caregivers and those delivering the messages. Looking for areas of synergy and how these areas of health, nutrition, and development are interconnected and reinforce one another provides a concise and meaningful way to promote best practices in these areas.

Promotion of a comprehensive approach to address the whole child

Parents do not think of their children as divided up into separate areas of health, nutrition, and

psychosocial stimulation. They want their children to be happy, healthy, and able to learn well. The second key advantage of HNECD services is that they address the holistic and comprehensive needs of young children. Research on child development has been summarized into developmental domains whereby each domain influences the other areas.[19] These programs protect and promote children's growth and development across multiple domains (e.g., cognitive, social, emotional, physical). Integrated HNECD programs acknowledge the inherent interdisciplinary nature of human development and are able to promote comprehensive care to address the multiple needs of the child, thereby promoting optimal growth and development. They acknowledge the synergies among health, nutrition, and a positive caregiving environment and the need to address all three simultaneously in order to truly positively affect a child's growth and development.[20]

Integrating activities addressing IYCF practices, promoting positive health and hygiene behaviors, and sharing ways to provide psychosocial stimulation and learning opportunities for children reinforces for parents the need to address the whole child and can provide positive experiences that reinforce these behaviors. In addition, successfully integrated HNECD services can reinforce the message and importance of addressing a child's needs holistically, not just for parents, but for communities, providers, and government stakeholders. Data from impact and cost effectiveness evaluations can provide compelling evidence to influence local, state, and national stakeholders about the importance of an integrated approach to ECD and of reaching vulnerable children and families during the early years.

Key challenges and considerations for integrating nutrition and ECD programming in the field

Despite progress in the field, few examples of sustainable integrated HNECD models exist and even fewer have been rigorously studied.[21] The lack of integrated HNECD models stems from two primary reasons. First, funding sources are distinct. Health/nutrition funders historically respond to health/nutrition indicators, while ECD programs target education and developmental outcomes. Rarely are both addressed in the same project design. Second, in the "real world" of implementing programs to serve young children and their families, ministries function independently. Ministries of Health, Education, and Social Welfare are distinct departments with responsibility for administering discrete programs. Rarely do they work together to offer coordinated services. Ministries have separate staff, accreditation, training, platforms, and programs. This sectoral division flows down to the community level as well, with community health promoters or nutrition counselors often not interacting with ECD staff.

In addition to funding sources and ministries that function independently, several other challenges need to be considered when implementing integrated nutrition, health, and ECD programs. These include defining the approach to integration and understanding of, and agreement on, terminology and activities, current workload of staff delivering the intervention, supervisory responsibilities, and appropriate tools for monitoring and evaluation.

Defining integration

Before implementing an integrated approach to NHECD programs, it is important to consider what approach to integration best fits the context and the infrastructure available in the field. Several approaches to integration have been described.[22] First, a program may offer a set of largely predetermined inputs and services aimed at achieving impacts within a single domain (e.g., set of nutrition-focused interlinked activities; Essential Nutrition Actions). Second, programs can promote a menu of inputs and services framed by a cross-sectoral conceptual framework, seeking outcomes across a range of sectors (e.g., health, nutrition, education). This second approach allows for flexibility across a menu of inputs and allows for potential synergies to emerge where multiple innovations are adopted in one location. A third approach, the most complex approach, would be to ensure that minimum (essential) packages are provided in each sector, with gains from each achieved in every community that is targeted, achieving compounded benefits. How comprehensive an approach should be depends on the local context and what already exists that can be built on, the priority domains that need to be addressed, what can be effectively tackled through multisectoral programming, and the existing points of service delivery and service providers.[22] Clarity on how integration is defined and understood by the multiple stakeholders involved is critical, as is clarity

on the level at which integration can be carried out within a program and how integration may achieve outcomes beyond those of individual programs.

Identifying common language and activities

The manner in which ECD and nutrition communities talk about opportunities for integration may also differ: the ECD community refers to "ages and stages" of the child, with a progression of different developmental milestones and age-appropriate activities (e.g., Centers for Disease Control and Prevention's (CDC) Milestone Moments;[23] Ages & Stages Questionnaire[24]). Recommended infant and child feeding practices are age-dependent as well; however, the IYCF community often refers to providing IYCF support in different services (e.g., antenatal care, delivery, postnatal, growth-monitoring programs, immunization, community management of acute malnutrition (CMAM), and other community services or programs), at different contact points within programs (e.g., within CMAM: community mobilization and sensitization, admission, weekly or bi-weekly follow-up, discharge, follow-up in the home and community), and provides IYCF support through different activities, such as individual counseling, IYCF support groups, and action-oriented groups. ECD also refers to various contact points for service delivery (e.g., home visits, ECD centers, community groups). Mutual understanding of each program's activities can lead to identification of additional opportunities for integration and ways in which activities can reinforce one another.

Staff workload

The current workload of nutrition counselors, community health workers, ECD center staff, and volunteers delivering interventions is often already quite high. A key consideration for integrated interventions is how to adequately build in additional information so that nutrition, health, and ECD are being addressed effectively without staff becoming overwhelmed. Lessons can be learned from recent work in the field of HIV/AIDS on task shifting. In response to a shortage of well-trained health workers, particularly in low- and middle-income countries, the WHO and others have promoted task shifting or when appropriate, moving tasks away from more specialized health professionals often in short supply (e.g., doctors, nurses, midwives) to less specialized health workers, such as community health workers.[25] Advantages of task shifting include expanding the human resource pool rapidly, building bridges between health facilities and the community, and creating local jobs.[25] However, studies of the effectiveness of community health worker programs in sub-Saharan Africa to address HIV/AIDS have shown a mixed picture, exhibiting the ability to improve access and coverage for communities but experiencing problems that affect sustainability and quality of the services they provide.[26] Issues, such as incentivizing community health workers; providing strong initial training, simple guidelines, and standardized protocols; ongoing support and supervision; and relationships with formal health services, have all been noted as critical to promoting successful community-based health systems.[26]

Integrating nutrition and ECD programming may produce some of the same challenges related to task shifting. Multiple responsibilities may be added to community staff without being cognizant of their current workload and without any training in prioritization or problem solving. This may actually lead to diluted messages and services, poorer quality of the intervention received, and to potential community staff burnout and poor retention. In addition, families may also be at risk of receiving too much information at one time, not knowing how to prioritize or digest all of the information received when both nutrition and ECD messages are being delivered. The UNICEF *Community IYCF Counseling Package*[27] and programs, such as Speak for the Child[28] and Care for Development,[29] emphasize the importance of building skills in dialogue and problem solving among staff so they can prioritize the information they select to discuss with a mother at a particular contact point—based on the child's age and the situation at hand (e.g., mother or child's health, home resources, other difficulties the mother may face in caring for her child). Professionals in ECD, nutrition, and health must have a thorough understanding of the interventions in each area to look for ways to integrate activities and harmonize messages, both during training and delivery. Cross-training or capacity building in nutrition, ECD, and health for staff is needed. Clear job descriptions delineating staff roles and responsibilities for integrated programming are needed and must be revisited periodically to assess workload. In

addition, ongoing supportive supervision and local incentives should be considered to maintain the quality of service provision and staff motivation.

Supervisory responsibilities

Strong, continuous, and supportive supervision is a critical factor in successful implementation of interventions.[30] In integrated programs, challenges may relate to expanding the supervisory role for supervisors, who already have multiple responsibilities, including (1) monitoring compliance with policies, procedures, and action plans to track activities accomplished and coverage achieved; and (2) mentoring and building worker skills to deliver high-quality programming. Where supervisors assume responsibility for an integrated program, their supervision responsibilities are likely to be expanded. Cross-training of supervisors to ensure their familiarity with program activities in nutrition, health, and ECD will be warranted. If program activities in nutrition and ECD are carried out by different agencies, this may also increase the complexity of supervision, depending on how supervision and reporting are structured. Similar to addressing staff workload issues, attention must be paid to the workload and complexity of supervisory responsibilities in integrated programs.

Integrated tools for monitoring and evaluation

A key to successful programming is a successful system for monitoring program progress and quality and evaluating impact on key outcomes. Integrated programs will need to adapt current monitoring tools from the nutrition and ECD fields to develop a system and train staff on a set of minimal but key indicators. For example, in addition to monitoring height and weight of children to assess nutritional status, key indicators on age-appropriate developmental milestones should also be assessed. Behaviors related to infant feeding along with responsiveness of the caregivers and positive interactions between the child and mother can be monitored and measured.

India's ICDS program is an example of a promising program aimed at addressing children's nutrition and development through the country's ECD (Anganwadi) centers, but which has also been plagued with several of the challenges noted above.[31] Despite being one of the largest national development programs in the world, ICDS has not met its objectives, particularly with regard to malnutrition in India.[32] Challenges have included inadequate worker skills, overburdened community workers, shortage of equipment, ineffective supervision, and weak monitoring and evaluation. Because of the emphasis on food supplementation and preschool education, most children under 3 years were not targeted during this critical period for their growth and development.[31,32]

Recommendations to address these challenges include strengthening referral to the health system with emphasis on prevention and control of common child diseases, including acute malnutrition; involving communities in the implementation and monitoring of ICDS to mobilize additional resources for the Anganwadi centers, improving the quality of service delivery, and increasing accountability in the system; increasing training and appropriate incentives for Anganwadi workers; and strengthening monitoring and evaluation activities through the collection of timely, relevant, accessible, high-quality information to inform decisions, improve performance quality, and increase accountability.[31,32]

Bringing disparate activities and services into a coherent system requires well-resourced communication. The WHO[33] defines health services integration as "bringing together common functions within and between organizations to solve common problems, developing commitment to a shared vision and goals and using common technologies and resources to achieve these goals." Successfully engaging in integrated programming will require a paradigm shift that promotes a holistic view of the child and encourages communication and collaboration among different sectors. To promote sustainable integrated interventions, advocacy for integration should commence with the relevant ministries at both national and district levels, and should involve the local communities as well. Also required is community mobilization and training that encourages the involvement of members from various relevant sectors and emphasizes the relationships among nutrition, health, and child development.

In both the fields of nutrition and ECD, there remain important questions regarding how to best integrate and scale up what we know to be evidence-based practices.[1] Issues, such as when (and perhaps with which workers) to message and when to use other approaches to address the real problems a

mother may experience, how best to mix the different nutrition and ECD activities to make the most efficient and effective use of the resources available within the system, and how to best address issues of staff and supervisory workload, need to be systematically addressed and examined within different contexts.

Summary and conclusions

Combined interventions may be more efficient than separate interventions, because they are intended for the same population and make use of the same facilities, transportation, and client contacts. In addition, for families, particularly for those most at risk, combined interventions can also lead to increased access to services. However, in order for integrated nutrition, health, and ECD interventions to be successful, a variety of challenges must be addressed, including workload of staff and supervisors, communication and coordination among different ministries and among staff in different sectors, and an acknowledgement at the national and community levels that comprehensive, integrated care addressing both the physical and developmental needs of the child is key to promoting optimal health, growth, and development for children.

Conflicts of interest

The authors declare no conflict of interest.

References

1. Engle, P.L., L.C.H. Fernald, H. Alderman, *et al.* 2011. Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *Lancet* **378:** 1339–1353.
2. Engle, P., S. Grantham-McGregor, M. Black, *et al.* 2007. How to avoid the loss of potential in over 200 million young children in the developing world. *Child Health Educ.* **1:** 68–87.
3. Grantham-McGregor, S., B.Y. Cheung, S. Cueto, *et al.* 2007. Developmental potential in the first 5 years for children in developing countries. *Lancet* **369:** 60–70.
4. Association for the Development of Education in Africa (ADEA). 2009. *The 4th African International Conference on Early Childhood Development Calls on Countries to Take Action and Advocates for the African Union Heads of State to Hold a Special Summit on Childhood.* Accessed March 4, 2013. http://appablog.wordpress.com/2009/11/20/the-4th-african-international-conference-on-early-childhood-development-calls-on-countries-to-take-action-and-advocates-for-the-african-union-heads-of-state-to-hold-a-special-summit-on-childhood/.
5. United Nations Educational, Scientific and Cultural Organization (UNESCO). 2010. Moscow framework for action and cooperation: harnessing the wealth of nations. *World Conference on Early Childhood Care and Education Building the Wealth of Nations.* Accessed March 4, 2013. http://unesdoc.unesco.org/images/0018/001898/189882e.pdf.
6. Shonkoff, J. & D. Phillips. 2000. *From Neurons to Neighborhoods: The Science of Child Development.* Washington, DC: National Academy Press.
7. Heckman, J. & D. Masterov. 2007. The productivity argument for investing in young children. Accessed March 4, 2013. http://jenni.uchicago.edu/human-inequality/papers/Heckman_final_all_wp_2007-03-22c_jsb.pdf.
8. Walker, S., T. Wachs, S. Grantham-McGregor, *et al.* 2011. Inequality in early childhood: risk and protective factors for early child development. *Lancet* **378:** 1325–1338.
9. Inter-Agency Taskforce on HIV and ECD. 2012. The essential package: holistically addressing the needs of young vulnerable children and their caregivers affected by HIV and AIDS. Accessed January 14, 2014. http://ecdgroup.com/pdfs/EPBrochure%20Final.pdf.
10. Engle, P. *et al.* 2011. Care for development in three central Asian countries. Accessed October 13, 2013. http://www.unicef.org/ceecis/Care_for_ChDev_in_3_Central_Asian_Countries.pdf.
11. World Bank. 2010. Protecting Early Childhood Development (PECD) in Malawi- Rapid Social Response (RSR). World Bank, Project ID: P121496.
12. CARE, Save the Children. 2012. Bridging health and education programs for young children. Annual Report for Merck & Company, Inc., Unpublished report.
13. The International Bank for Reconstruction and Development, the World Bank World Bank. 2011. Learning for all: investing in people's knowledge and skills to promote development. World Bank Group Education Strategy 2020. Accessed March 6, 2013. http://siteresources.worldbank.org/EDUCATION/Resources/ESSU/Education_Strategy_4_12_2011.pdf
14. Behrman, J.R., Y. Cheng & P. Todd. 2000. *The Impact of the Bolivian Integrated 'PIDI' Preschool Program.* Philadelphia: University of Pennsylvania.
15. Fernald, L.C.H. & E. Galasso. Addressing malnutrition in Madagascar. *Project funded by SIEF—Strategic Impact Evaluation Fund*, World Bank (2012–2015).
16. World Bank. 2011. Early child development-analyses of costs and benefits. Cited October 2013. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTCY/EXTECD/0,,contentMDK:20259111~menuPK:524452~pagePK:148956~piPK:216618~theSitePK:344939,00.html.
17. Personal Communication: Save the Children ECD program managers, Malawi and El Salvador.
18. UNICEF, World Health Organization. 2012. *Integrating Early Childhood Development (ECD) activities into Nutrition Programmes in Emergencies. Why, What and How.* Guidance note for integrating ECD activities into nutrition programmes in emergencies. New York: United Nations Children's Fund and World Health Organization.
19. National Association for the Education of Young Children. 1997. *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8.* Washington, DC: National Association for the Education of Young Children.

20. Engle, P.L., L. Lhotska & H. Armstrong. 1997. *The Care Initiative: Guidelines for Analysis, Assessment, and Action to Improve Nutrition.* New York: UNICEF.
21. Pelto, G., K. Dickin & P. Engle. 1999. *A Critical Link: Interventions for Physical Growth and Psychological Development.* Geneva: Department of Child and Adolescent Health and Development, WHO.
22. Webb, P. 2011. *Achieving Food and Nutrition Security: Lessons Learned from the Integrated Food Security Programme (IFSP), Mulanje, Malawi.* Feinstein International Center, Friedman School of Nutrition, Somerville.
23. Centers for Disease Control and Prevention. 2012. Milestone Moments. Cited May 2013. http://www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/milestonemomentseng508.pdf.
24. Squires, J., E. Twombly, D. Bricker & L. Potter. 2009. *ASQ-3, Ages and Stages Questionnaires.* Third Edition. Baltimore: Paul H. Brookes Publishing Co., Inc.
25. World Health Organization. 2007. Task shifting to tackle health worker shortages. Accessed February 27, 2013. http://www.who.int/healthsystems/task_shifting_booklet.pdf.
26. Hermann, K., W. Van Damme, W.G. Pariyo, *et al.* 2009. Community health workers for ART in sub-Saharan Africa: learning from experience-capitalizing n new opportunities. *Human Resources for Health* **7:** 31.
27. UNICEF. 2012. *UNICEF Community Infant and Young Child Feeding Counseling Package.* 2nd ed. New York: United Nations Children's Fund.
28. Academy for Educational Development, USAID. 2002. *Speak for the Child: A Program Guide with Tools.* Washington, D.C.: Academy for Educational Development and U.S. Agency for International Development.
29. World Health Organization, UNICEF. 2012. *Care for Child Development: Improving the Care for Young Children.* New York: World Health Organization and United Nations Children's Fund.
30. Management Sciences for Health. 2006. Supportive supervision to improve integrated primary health care. Occasional Papers, No 2.
31. The Mother and Child Health and Education Trust. 2013. India's primary policy response: the Integrated Child Development Services (ICDS) Program. Accessed February 27, 2013. http://motherchildnutrition.org/india/challenges-and-way-forward.html.
32. Awofeso, N. & A. Rammohan. 2011. Three decades of the Integrated Child Development Services Program in India: progress and problems. *Health Management—Different Approaches and Solutions.* Dr. Krzysztof Smigorski, Ed., ISBN: 978-953-307-296-8, InTech. Available from: http://www.intechopen.com/books/health-management-different-approaches-and-solutions/three-decades-of-the-integrated-child-development-services-program-in-india-progress-and-problems.
33. World Health Organization. 1996. *Integration of health care delivery. Report of a WHO study group. Technical Report.* World Health Organization, Geneva.