A review and analysis of recent publications on children affected by HIV and AIDS

# What's New in Research?

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## What's New in Research? January 2016

In this issue we look at six substantial reviews of evidence on topics relevant to programming for children affected by HIV and related disadvantages: global health and development in early childhood; measures and indicators for assessing impact of early childhood development programmes; psychological interventions for perinatal depression by non-specialist health workers; caregiver behavior change; the prevalence of child maltreatment across the globe, and the role of mHealth and other media interventions to enhance child survival and development.

Evidence reviews are important because they take stock of what is known across different contexts, using a range of methods in studies of varying quality. There are many different ways of doing evidence reviews, but all try to achieve the following: identify relevant evidence (usually published in peer-reviewed journals, but may include unpublished material); select studies for inclusion in the review; assess the quality of each study; synthesize findings in an unbiased way, and interpret the findings in a balanced way. As such, evidence reviews are helpful because they summarize large bodies of research and enable practitioners and others to ensure that their work is evidence-informed.

Reviewed in this edition:

Aboud, F. & Yousafzai, A. (2015). Global health and development in early childhood. *Annual Review of Psychology*, 66, 433-457.

Frongillo, E., Tofail, F., Hamadani, J., Warren, A. & Mehrin, S. (2014). Measures and indicators for assessing impact of interventions integrating nutrition, health and early childhood development. *Annals of the New York Academy of Sciences*, 1308, 68-88.

Chowdhary, N., Sikander, S., Atif, N., Singh, N. Ahmad, I. …. Patel, V. (2014). The content and delivery of psychological interventions for perinatal depression by non-specialist health workers in low and middle income countries: A systematic review. *Best Practice and Research Clinical Obstetrics and Gynaecology*, 28, 113-133.

Elder, J., Pequegnat, W., Ahmed, S., Bachman, G., Bullock, M. …. Sweat, M. (2014). Caregiver behavior change for child survival in low- and middle-income countries: An examination of the evidence. *Journal of Health Communication*, 19, 25-66.

Stoltenborgh, M., Bakermans-Kranenburg, M., Alink, L. & van IJzendoorn, M. (2015). The prevalence of child maltreatment across the globe: Review of a series of meta-analyses. *Child Abuse Review*, 24, 37-50.

Higgs, E., Goldberg, A., Labrique, A., Cook, S., Schmid, C. … Obregón, R. (2014). Understanding the role of mHealth and other media interventions for behavior change to enhance child survival and development in low- and middle-income countries: An evidence review. *Journal of Health Communication*, 19: Sup 1, 164-189.

**Global Health and Development in Early Childhood**

Aboud, F. & Yousafzai, A. (2015). Global health and development in early childhood. *Annual Review of Psychology*, 66, 433-457.

### *Published Abstract*

Health and nutritional risks co-occur in the lives of children under the age of 2 years who live in developing countries. We review evidence showing how these risks, in addition to inadequate psychosocial stimulation, prevent children from developing expected cognitive and language abilities. A systematic review and meta-analysis of 21 interventions aimed at enhancing stimulation and 18 interventions that provided better nutrition—all conducted since 2000—revealed that stimulation had a medium effect size of 0.42 and 0.47 on cognitive and language development, respectively, whereas nutrition by itself had a small effect size of 0.09. The implementation processes of these interventions are described and compared. A number of unresolved issues are outlined and discussed, including ways to maximize parental health behavior change, assess mediators that account for intervention effects, and expand the assessment of young children's brain functions that underlie language and cognition and are affected by nutrition and stimulation.

Availability: Subscription or pay for access

### *Comment*

This is a really excellent review of both risks to and interventions to enhance the early cognitive and language development of the more than 85% of the world's population of children under 2 years of age who live in low- and middle-income countries. The authors focus on four risks to these children's development, bearing in mind that they tend to co-occur: delivery of the child by an unskilled attendant in the mother's home; infections such as diarrhea and malaria; inadequate nutrition, and inadequate psychosocial stimulation. Twenty one papers were identified that examined the impact of a psychosocial stimulation intervention and 18 with a nutrition intervention, with the majority using strong outcome measures such as the Bayley or the Griffiths Scales. As indicated in the abstract, nutrition interventions had a small and stimulation interventions a medium effect on young children's cognitive and language development. In more specific terms, the psychosocial intervention accounted for 47% of the difference between the children in the intervention and the control group. The authors also examined other differences between the two interventions. For example, psychosocial interventions are labour intensive, with the majority of high-risk children being provided with between 60 and 100 hours of intervention delivery. They also examined potential mechanisms of effect, or how interventions seem to work. For example, nutrition interventions are thought to influence cognitive and language development through the following mechanisms: improved motor development which facilitates better fine and gross motor exploration and learning; bigger children elicit more advanced stimulation from caregivers and, thirdly, better nutrition enables the child's brain to grow structurally and functionally. Stimulation programmes work by providing the young child with materials and opportunities for learning, together with adult language mediation (i.e. the adult describes, explains and elaborates what the child is doing). Lastly, the paper looks at the format of stimulation programmes, which usually occur through home visits, group sessions or health visits, or some combination of the three. Group sessions,

with clinic or home visits are less labour intensive, encourage peer support and potentially help to modify individual caregiving through exposure to group norms.

### *Implications for Policy and Practice*

The paper has important implications for practice. For one, given the relationship between stunting in the first two years of life and adult health and human capital outcomes, it raises the importance of nutrition interventions for young children. The authors quote a study by Imdad et al (2011) which found that the provision of food to young children for 6 months or less, often fortified with extra protein and micronutrients, led to greater gains in length, with an effect size of 0.41 for the 6 studies conducted in food-insecure sites in Africa and South Asia. Secondly, it exposes the absence of explicit tests of theories of change in interventions aiming to improve young children's development by changing parental and family behavior. Examining the studies in more detail, the authors conclude that the use of "small media" (small posters, cards or brochures illustrating stimulation practices and given to parents to parents to keep at home) is one of the most important components of interventions. They hypothesize that these materials served as a means of instruction, particularly for less educated mothers, and served as a reminder at home.

Reference:

Imdad, A., Yakoob, M. & Bhutta, Z. (2011). Impact of maternal education about complementary feeding and provision of complementary foods on child's growth in developing countries. *BMC Public Health*, 11 (Suppl 3): S25. (available at http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-11-S3-S25)

**Measurement of psychosocial stimulation**

Psychosocial stimulation is most frequently measured by the *Home Observation for the Measurement of the Environment* (HOME) developed by Bettye Caldwell and Robert Bradley in the 1980's. The HOME Inventory is used to assess psychosocial stimulation in the home and to measure changes in caregiver behaviours as a result of intervention. Because it is an observational measure, including the infant and toddler version for children under 2 years of age, it is not feasible for use in large populations. In response to the need for a caregiver questionnaire, researchers working with UNICEF used the HOME and UNICEF's model of care for nutrition to develop a 19-item Family Care Indicators (FCI) that could be used in UNICEF's Multi-Indicator Cluster Surveys (MICS). The FCI has been validated in several countries and used in MICS surveys in 28 low- and middle-income countries (Bornstein & Putnick, 2012). The FCI consists of noting items such as reading materials in the home, and sources and variety of play materials and play activities.

Reference:

Bornstein, M. & Plutnick, D. (2012). Cognitive and socioemotional caregiving in developing countries. *Child Development*, 83, 46-61 (available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3270892/).

**Measures and indicators for assessing impact of interventions integrating nutrition, health and early childhood development**

Frongillo, E., Tofail, F., Hamadani, J., Warren, A. & Mehrin, S. (2014). Measures and indicators for assessing impact of interventions integrating nutrition, health and early childhood development. *Annals of the New York Academy of Sciences*, 1308, 68-88. Doi:10.1111/nyas.12319.

### *Published Abstract*

When implementing interventions integrating nutrition, health, and early childhood development, evaluation studies of effectiveness that assess the intermediate and ultimate impacts on the four domains of food and nutrition, family care, health, and child development are needed. Such studies should demonstrate impact, both benefits and potential harms, and understand mechanisms through which impact has been achieved. This article reviews and suggests measures and indicators suitable for use in evaluation studies of effectiveness of integrated interventions for children under 5 years of age. Within each of the four domains, multiple constructs and subconstructs were considered. For each construct and subconstruct, we identified measures and indicators, using several search processes, and reviewed them in relation to validity, responsiveness to intervention inputs and activities, equivalence in constructs and items across contexts with appropriate adaptation, and feasibility for use in effectiveness studies. Suggested measures and indicators for each domain, construct, and subconstruct are tabulated and described. We discuss the strengths and weaknesses of measures and indicators across domains and constructs, further research establishing validity, and guidance on adaptation of measures to particular contexts.

Availability: Open access at http://onlinelibrary.wiley.com/doi/10.1111/nyas.12319/epdf

### *Comment*

This very useful overview of measures proceeds from the following principles: 1) Programmes that integrate nutrition, health and early childhood interventions are needed to overcome the detrimental effects of poverty on young children in low- and middle-income countries; 2) To be scalable, these interventions must be incorporated into existing services; 3) Evaluations of these interventions must assess impacts on health and nutrition, family care and child development, and 4) A globally accepted set of measures and indicators is needed that can be adapted for use across countries. While all the measures merit careful consideration, readers are likely to be most interested in measures of *Family Care* and *Child Development*. Under *Family Care*, the authors cover measures for the following constructs: Support for Learning and Stimulating Environment (they recommend the HOME and the Family Care Indicators, reviewed in the paper by Aboud & Yousafzai (2015) above); Setting Limits and Punishments (they recommend relevant HOME items and UNICEF Multi-Indicator Cluster Survey (MICS) items assessing disciplinary behaviours); Alternative Caregivers (no appropriate measures identified); Father Involvement (no appropriate measures identified); Responsiveness (various coding systems for observations); Maternal Depressive Symptoms (The Center for Epidemiological Studies Depression Scale

(CES-D); the WHO Self-Reporting Questionnaire (SRQ), and the Edinburgh Postnatal Depression Scale (EPDS); Parent-Child Interaction (best measured by observation). Under *Child Development*, the authors recommend the WHO milestones for motor development, the Bayley Scales of Infant Development (which require specialized training), the Griffiths Scales of Mental Development, the Denver Developmental Screening Test, the Kaufman Assessment Battery for Children, and the Ages and Stages Questionnaire (ASQ). They ASQ is the most suitable for studies of large numbers of children because it covers multiple domains, is mainly based on parent report, the administration procedures are flexible, and it has already been successfully applied in a number of low- and middle-income countries.

### *Implications for Policy and Practice*

The lack of validation of measures is a serious problem, as illustrated by the MICS items for child development, which have now been administered in about 60 counties, but only validated in Bangladesh. A lot of work is needed in this area, and large implementation programmes could make a useful contribution to the field by careful adaptation and administration of scales, and publication of their results. What is needed to do this is language and context adaptation (e.g. changing the word "hedge" to "fence"; using a picture of a goat rather than a dog and so on), adherence to protocols for training, assessment of reliability, monitoring of testers for accuracy and establishing the accuracy of the measures against reference measures and measures such as growth, nutrition, parent education and socioeconomic conditions.

**Construct equivalence**

Measures are developed to assess a construct or an idea, such as *responsiveness, care, hyperactivity, depression* and so on. These constructs are made up of several manifestations, behaviours and indicators that, together, give an assessment of the construct. Generally, the more items that are used to assess a construct, the more reliably and validly the construct is measured. This is because many items are contributing to the total, making the measure stronger. Usually a long list of items are administered to a large number of people, and the items with the strongest correlations with each other and with the total of the items are retained in the measurement of the construct. However, constructs are abstract notions and, as such vary by culture. For example, what is considered "punitive" towards children in Switzerland may be very different from what is seen as "punitive" in India. Establishing construct equivalence is the process of determining whether the construct being measured holds the same meaning and value in different societies and cultures. Both qualitative and quantitative methods are used to establish construct equivalence; for example, focus groups to tap into local understanding of ideas, as well as translation into the local language and back-translation into the reference language, such as English to establish whether the original meaning is retained. Quantitative methods involve statistical techniques such as correlations and factor analyses.

**The content and delivery of psychological interventions for perinatal depression by non-specialist health workers in low and middle income countries: A systematic review**

Chowdhary, N., Sikander, S., Atif, N., Singh, N. Ahmad, I. …. Patel, V. (2014). The content and delivery of psychological interventions for perinatal depression by non-specialist health workers in low and middle income countries: A systematic review. *Best Practice and Research Clinical Obstetrics and Gynaecology*, 28, 113-133.

### *Published Abstract*

Psychological interventions delivered by non-specialist health workers are effective for the treatment of perinatal depression in low- and middle-income countries. In this systematic review, we describe the content and delivery of such interventions. Nine studies were identified. The interventions shared a number of key features, such as delivery provided within the context of routine maternal and child health care beginning in the antenatal period and extending postnatally; focus of the intervention beyond the mother to include the child and involving other family members; and attention to social problems and a focus on empowerment of women. All the interventions were adapted for contextual and cultural relevance; for example, in domains of language, metaphors and content. Although the competence and quality of non-specialist health workers delivered interventions was expected to be achieved through structured training and ongoing supervision, empirical evaluations of these were scarce. Scalability of these interventions also remains a challenge and needs further attention.

Availability: Open access at http://dx.doi.org/10.1016/j.bpobgyn.2013.08.013

### *Comment*

Perinatal depression, broadly interpreted as depression in pregnant women and women with young children is a serious public health problem, causing suffering among women and threatening the health and wellbeing of their children. Rates of depression are higher among women in low- and middle-income countries (LMICs) than among their high-income country counterparts, and higher among women subject to gender-based violence and other socioeconomic risks. This review follows an earlier meta-analysis (Rahman et al, 2013) of 13 studies of interventions for perinatal depression, all but one of which was implemented by non-specialist health workers (NSHW). The pooled interventions benefitted mothers and children (increased immunization, reduced diarrheal episodes, better cognitive development) as well as mother-child interaction. The mean prevalence of maternal depression in LMICs ranges from 16 to 20%. In this review, the authors focus on implementation features of interventions, such as the content of the interventions, training, setting, duration and the like. In terms of content, some studies have adapted evidence-based psychological treatments such as cognitive-behaviour therapy (CBT), while others adapted other interventions or developed a new intervention. Interventions were directed at either the mother, the mother-child relationship, or the family. Interventions directed at the mother generally attempted to change the way she thought about herself and her circumstances, through psycho-education, cognitive re-structuring, problem solving and behavioural activation, and by providing her with support. Mother-child interventions focused on educating parents on children's

health, child nutrition and care seeking. Family interventions aimed at activating social networks, addressing interpersonal issues and promoting adherence and women's empowerment. Most of the interventions were integrated into existing health programmes and most were delivered at home. Frequency and duration varied widely, from 3-20 sessions, and delivered weekly to monthly over 6 weeks to 20 months. All studies incorporated mechanisms to promote fidelity, mainly in the form of manuals, careful recruitment of NSHWs, training, regular supervision and assessment of quality of delivery, and structured frequency and duration. All studies reported weekly or monthly supervision.

### *Implications for Policy and Practice*

As with many OVC programmes, the key components of the maternal depression interventions were information giving and skill building. However, OVC programmes have a lot to learn from carefully designed intervention studies that achieve positive effects, especially in terms of structure, selection and training of staff, regular supervision to ensure quality service delivery, and sufficient intensity of intervention (frequency and duration) to achieve positive impacts.

Reference:

Rahman, A., Fisher, J., Bower, P., Luchters, S., Tran, T., Yasamy, M. T., ... & Waheed, W. (2013). Interventions for common perinatal mental disorders in women in low-and middle-income countries: a systematic review and meta-analysis. *Bulletin of the World Health Organization*, *91*(8), 593-601I. Available at http://www.scielosp.org/scielo.php?pid=S0042-96862013000800593&script=sci_arttext&tlng=pt

## Caregiver behavior change for child survival in low- and middle-income countries: An examination of the evidence

Elder, J., Pequegnat, W., Ahmed, S., Bachman, G., Bullock, M. …. Sweat, M. (2014). Caregiver behavior change for child survival in low- and middle-income countries: An examination of the evidence. *Journal of Health Communication*, 19, 25-66.

### *Published Abstract*

In June of 2012, representatives from more than 80 countries promulgated a Child Survival Call to Action, which called for reducing child mortality to 20 or fewer child deaths per 1,000 live births in every country by 2035. To address the problem of ending preventable child deaths, the U.S. Agency for International Development and the United Nations Children's Fund convened, on June 3–4, 2013, an Evidence Summit on Enhancing Child Survival and Development in Lower- and Middle-Income Countries by Achieving Population-Level Behavior Change. Six evidence review teams were established on different topics related to child survival and healthy development to identify the relevant evidence-based interventions and to prepare reports. This article was developed by the evidence review team responsible for identifying the research literature on caregiver change for child survival and development. This article is organized into childhood developmental periods and cross-cutting issues that affect child survival and healthy early development across all these periods. On the basis of this review, the authors present evidence-based recommendations for programs focused on caregivers to

increase child survival and promote healthy development. Last, promising directions for future research to change caregivers' behaviors are given.

Availability: Open access at http://www.tandfonline.com/doi/full/10.1080/10810730.2014.940477

### *Comment and implications for Policy and Practice*

The question addressed by this review is "What are the effective and sustainable interventions to promote and support behavior changes required for and by families, mothers and other caregivers to accelerate reductions in under-5 mortality and optimize healthy and protective child development to age 5?" The review emphasizes the critical role of parents and caregivers and argues that Fishbein and Azjen's *theory of reasoned action* provides a helpful conceptual model for thinking about interventions. Applying this framework, caregivers must have knowledge, and must understand the causal link between their behavior and the survival and development of their children; secondly, caregivers must know what the risks to children are in their family and community; thirdly, the caregiver must have the knowledge and skills to feel confident that they can engage in behaviours that will ensure their child's survival and development; and lastly, there must be supports for parents to overcome environmental and other constraints to engaging in practices that promote children's survival and development. The review is organized by time period, from conception to age 5 years, starting with *Perinatal Survival*. Under this section the authors review interventions to promote the healthy timing and spacing of pregnancy (to at least age 18 and waiting 24 months after a birth before attempting another pregnancy). Under *Childbirth and Neonatal Survival*, the authors review studies on safe delivery, breastfeeding, Kangaroo Mother Care, appropriate care-seeking and diarrhea prevention and treatment. In the section on *Infant/Toddler Survival and Development*, breastfeeding, feeding and stimulation, parenting and caretaking skills and conditional cash transfer programmes are reviewed. All studies of home visiting programmes to improve parenting they reviewed reported beneficial effects, though some were small. Available data indicates that home visits should be at least twice monthly to achieve benefits, making this a high-intensity intervention that is difficult to scale up in low-resource settings. More research is needed on how parenting interventions can be provided in groups and through visits to community health facilities, such as the WHO/UNICEF Care for Development package. Cross-cutting interventions identified include handwashing, use of insecticide treated nets for malaria prevention, oral rehydration solutions and symptom identification and care seeking. The authors conclude this comprehensive review by saying that " Our assessment is that we do not lack effective behavior change tools, but that these tools have not been widely enough used and prioritized within global health" (p. 51). In terms of future research directions, the paper points to the fact that there are no comparative effectiveness trials, comparing one approach with another; there are also few cost-effectiveness studies and little in the way of implementation science research to assist with scale up."In addition", say the authors, "studies reviewed in this article tend to assess one intervention for caregivers at a time. Research is needed on combination interventions that can be delivered by caregivers and target multiple outcomes in young children" (p. 52). Also needed, is the development of user-friendly manuals to help structure interventions and provide standards for quality and fidelity, as well as studies that identify optimal frequency of contact and duration of intervention on child outcomes, so that the most cost-effective programmes can be identified for scale-up.

**WHO/UNICEF Care for Development**

Care for Child Development (CCD) was developed by WHO and UNICEF as a component of the Integrated Management of Childhood Illness (IMCI), mainly in response to calls to go beyond child survival and to promote the development of children who survive. A milestone publication in this respect was Robert Myers 1992 book *The Twelve Who Survive.* In response, WHO adapted the IMCI counselling guidelines to include learning activities to support child development. The intervention, which is highly flexible and adaptable, promotes play and communication between caregivers and young children to help caregivers become sensitive to their young child's level of functioning, interests and reactions, and to help caregivers respond to the child in ways which facilitate the child's exploration and learning. It is a very simple intervention with clear guidelines and manual for training. To date, it has been adapted and implemented in many countries, and several studies attest to its benefits, most recently Aisha Yousafzai's work in Pakistan.

More information about Care for Child Development and all supporting documents
http://www.who.int/maternal_child_adolescent/documents/care_child_development/en/

Reference:
Yousafzai, A. K., Rasheed, M. A., Rizvi, A., Armstrong, R., & Bhutta, Z. A. (2014). Effect of integrated responsive stimulation and nutrition interventions in the Lady Health Worker programme in Pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. *The Lancet*, *384*(9950), 1282-1293.
Available at http://scholar.google.co.za/scholar?q=Yousafzai+Lancet&btnG=&hl=en&as_sdt=0%2C5

**The prevalence of child maltreatment across the globe: Review of a series of meta-analyses**

Stoltenborgh, M., Bakermans-Kranenburg, M., Alink, L. & van IJzendoorn, M. (2015). The prevalence of child maltreatment across the globe: Review of a series of meta-analyses. *Child Abuse Review*, 24, 37-50.

***Published Abstract***

In this review, we combine and compare the results of a series of meta-analyses on the prevalence of child sexual, physical and emotional abuse and physical and emotional neglect, including 244 publications and 551 prevalence rates for the various types of maltreatment. Child maltreatment research seems to be dominated by research on sexual abuse, studies in developed parts of the world and research using self-report measures. The overall estimated prevalence rates for self-report studies (mainly assessing maltreatment ever during childhood) were 127/1000 for sexual abuse (76/1000 among boys and 180/1000 among girls), 226/1000 for physical abuse, 363/1000 for emotional abuse, 163/1000 for physical neglect and 184/1000 for emotional neglect. The overall estimated prevalence rates for studies using informants (mainly assessing the 1-year prevalence of maltreatment) were four

per 1000 for sexual abuse and three per 1000, respectively, for physical abuse and emotional abuse. We conclude that child maltreatment is a widespread, global phenomenon affecting the lives of millions of children all over the world, which is in sharp contrast with the United Nation's Convention on the Rights of the Child.

Availability: Open access at https://www.researchgate.net/profile/Marinus_Van_IJzendoorn/publication/267103498_The_Prevalence_of_Child_Maltreatment_across_the_Globe_Review_of_a_Series_of_Meta-Analyses/links/54494a210cf2ea6541308d7e.pdf

### *Comment and implications for Policy and Practice*

The authors tackle the methodologically very difficult topic of the global prevalence of child abuse. They take their definition of the different forms of child abuse from the 1999 WHO *Report of the Consultation on Child Abuse Prevention* (available at http://apps.who.int/iris/handle/10665/65900). The authors exclude double counting arising from multiple publications from one study, and distinguish between informant reports (agencies and police reports) and self-reports. This is important because informant reports (the minority of studies) represent only the tip of the iceberg of self-reports of prevalence (at least five times less), but self-reports have been found to be unreliable over time. The difference also arises because informant reports usually refer to the prevalence during a particular year, while self-reports typically cover longer periods, even the whole of childhood. In fact, very little is known about the chronicity of child abuse because the continuity of experiences, or the duration over time, has been the subject of very few investigations. The availability of prevalence data is also highly variable across continents, with the vast majority of information coming from the United States and Europe. The results of the meta-analysis indicate that sexual abuse is much more frequently investigated than physical abuse, with very little being known about emotional abuse and neglect. The reasons for the predominance of sexual abuse studies include the fact that it is often considered to have the most severe effects on children that investigations are less threatening to families because it frequently involves a person outside of the intimate family environment, and it is more discrete and easier to define. In terms of results, bar sexual abuse, prevalence rates for different types of maltreatment were comparable across continents. For girls, the combined prevalence rates for sexual abuse in Australia, Africa and North America (at about 20%) were higher than those in Europe and Asia (about 12%), while for boys, the rates in Africa (19%) were higher than in North America, Europe and Asia (about 7%). Physical abuse varied between 14% (in Australia) to 24% in North America, and emotional abuse between 11% in Australia, to 47% in Africa.

**Understanding the role of mHealth and other media interventions for behavior change to enhance child survival and development in low- and middle-income countries: An evidence review. *Journal of Health Communication***

Higgs, E., Goldberg, A., Labrique, A., Cook, S., Schmid, C. … Obregón, R. (2014). Understanding the role of mHealth and other media interventions for behavior change to enhance child survival and development in low- and middle-income countries: An evidence review. *Journal of Health Communication*, 19:Sup 1, 164-189.

### *Published Abstract*

Given the high morbidity and mortality among children in low- and middle-income countries as a result of preventable causes, the U.S. government and the United Nations Children's Fund convened an Evidence Summit on Enhancing Child Survival and Development in Lower- and Middle-Income Countries by Achieving Population-Level Behavior Change on June 3–4, 2013, in Washington, D.C. This article summarizes evidence for technological advances associated with population-level behavior changes necessary to advance child survival and healthy development in children under 5 years of age in low- and middle-income countries. After a rigorous evidence selection process, the authors assessed science, technology, and innovation papers that used mHealth, social/transmedia, multiplatform media, health literacy, and devices for behavior changes supporting child survival and development. Because of an insufficient number of studies on health literacy and devices that supported causal attribution of interventions to outcomes, the review focused on mHealth, social/transmedia, and multiplatform media. Overall, this review found that some mHealth interventions have sufficient evidence to make topic-specific recommendations for broader implementation, scaling, and next research steps (e.g., adherence to HIV/AIDS antiretroviral therapy, uptake and demand of maternal health service, and compliance with malaria treatment guidelines). While some media evidence demonstrates effectiveness in changing cognitive abilities, knowledge, and attitudes, evidence is minimal on behavioral endpoints linked to child survival. Population level behavior change is necessary to end preventable child deaths. Donors and low- and middle-income countries are encouraged to implement recommendations for informing practice, policy, and research decisions to fully maximize the impact potential of mHealth and multimedia for child survival and development.

Availability: Open access at
http://www.tandfonline.com/doi/full/10.1080/10810730.2014.929763?mobileUi=0

### *Comment and implications for Policy and Practice*

This is the second paper from the USAID-led evidence reviews concerning children, the first being the Elder et al paper (2014). While communication and media platforms have long been used to promote healthy behaviours, this review covers 26 studies that conform to criteria of good evidence. As the authors note, strong evidence of effectiveness is often the product of randomized control trials (RCTs), which usually contribute less to evidence about sustainability. The paper makes a distinction between mHealth interventions (largely SMS-based) and social or transmedia interventions. Transmedia

interventions refer to one or more media forms or platforms, including radio, TV, dramas, street theatre as well as SMS and social media. For example, a transmedia intervention might consist of television and print media, SMS messages and group discussions through social media. The aim of the review was to identify evidence on mHealth interventions that supported behaviours to reduce under-5 mortality, and to optimize health and child development. Fifteen mHealth interventions were identified, all using text messages, that attempted to improve the quality of health worker services (compliance with protocols), adherence to treatment (mostly antiretrovirals), improve maternal health and mental health, patient compliance with health care appointments, and demand for health services (e.g. use of skilled birth attendants). Ten transmedia interventions were identified that addressed, amongst others, healthy practices such as handwashing, use of bed nets, complementary feeding, and vaccinations. Although difficult to assess, media interventions to improve children's learning for school readiness and healthy behaviours, such as *Sesame Street*, and its local adaptations such as *Kilimani Sesame* in Tanzania and *Takalani Sesame* in South Africa, show beneficial results on a range of children's behaviours. The authors conclude that, despite the limited number of rigorous studies, mHealth and transmedia interventions show strong promise and rapid developments in this area are likely to occur in the next few years. The paper ends with important policy recommendations and recommendations for future research. These include: 1. The need for government stewardship to ensure that (a) mobile and internet content about health is accurate, (b) the privacy of participants in mHealth and media interventions is protected, and (c) an integrated and coordinated approach is achieved given that interventions to date have evolved in an ad hoc fashion, driven by commercial interests, with disease-specific foci. 2. Increase mobile phone ownership and access by women. Currently, globally, women are 20% less likely to own a mobile phone than men. 3. Ensure that the most marginalized populations are reached, which means increasing the range and access to media and mobile phones. 4. Enhance the capacity to conduct mHealth and transmedia research, and 5. Ensure that studies examine mechanisms of change so that interventions can be adapted and enhanced to improve impact.