

# HEALTH IN TRANSITION

Translating developmental origins of health and disease science to improve future health in Africa



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## THE CHALLENGES OF BREASTFEEDING IN POOR URBAN AREAS IN SUB-SAHARAN AFRICA

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Optimal breastfeeding has the potential to prevent more than 800 000 deaths in children younger than five years; 500 000 neonatal deaths; and 20 000 deaths in women every year. Despite these benefits, evidence from Sub-Saharan Africa shows that breastfeeding practices remain sub-optimal with only 25 per cent of children exclusively breastfed for the first six months, while six per cent of infants in these countries are never breastfed. For example, although the proportion of children who were exclusively breastfed in Kenya improved from 32 per cent in 2008 to 61 per cent in 2014, pockets of suboptimal breastfeeding practices are documented in urban slums. Exclusive breastfeeding in some of the urban slums in Kenya is as low as two per cent, with the age of introducing complementary foods being one-month post-delivery, while about a third of children are not breastfed within one hour of delivery as recommended by the World Health Organization (WHO).

Urban slums are faced by unique social and structural factors that hinder optimal breastfeeding including poverty and non-conducive livelihood opportunities, poor living conditions, food insecurity, poor professional and social support to breastfeeding mothers and knowledge deficit coupled with negative cultural beliefs and misconceptions about breastfeeding. This situation calls for macro-level policies and interventions that consider the ecological setting. Promising interventions may include global initiatives such as the Baby-Friendly Hospital Initiative, the Baby-Friendly Community Initiative, Human Milk Banking and the Baby-Friendly Workplace Initiative. However, innovations in their implementation need to take consideration for the contextual complexities.

This chapter explores breastfeeding practices, associated challenges and interventions that could promote breastfeeding in urban slums.

## Introduction

Nutrition is one of the most important factors influencing a child's health, growth and development, especially during the first years of life when neuro-psychomotor development is rapid.<sup>7</sup> Consequently, poor nutrition in the first 1 000 days can cause irreversible long-term health consequences on the child's mental, physical and social development.<sup>8</sup> Despite the remarkable progress in the health care delivery systems all over the world, child malnutrition continues to be one of the

7 Rosales, F.J., Reznick, J.S. & Zeisel, S.H. 2009. Understanding the Role of Nutrition in the Brain & Behavioral Development of Toddlers and Preschool Children: Identifying and Overcoming Methodological Barriers. *Nutritional Neuroscience*, 12(5), October:190-202. [<https://doi.org/10.1179/147683009X423454>].

8 Martorell, R. 1999. The nature of child malnutrition and its long-term implications. *Food and Nutrition Bulletin*, 20(3), January:288-292. [<https://doi.org/10.1177/156482659902000304>].



major public health problems in the low- and middle-income countries.<sup>9</sup> Globally, child malnutrition plays a role in almost half of the reported cases of infant and young child morbidity and mortality. In sub-Saharan Africa, approximately one child in 13 dies before his or her fifth birthday, unlike the world's high-income countries experiencing a mortality ratio of one child in 189.<sup>10</sup>

There are various forms of infant and young child undernutrition such as intrauterine growth restriction, micronutrient deficiencies, protein-energy malnutrition which is associated with stunting, underweight, and wasting. Globally in 2016, the United Nations Children's Fund (UNICEF) estimated that a total of 159 million children younger than five years were stunted (too short for age): a ratio of one in every four children. Approximately 52 million were estimated to be wasted (too thin for height), and 41 million were overweight or obese. The majority (80 per cent) of these malnourished children lived in developing countries.<sup>11</sup> In Kenya, as of 2014, 26 per cent of children younger than five years were stunted with eight per cent severely stunted, 11 per cent underweight and four per cent wasted.<sup>12</sup>

Child undernutrition is estimated to cause annual child mortality of 3.1 million or 45 per cent of all child deaths, 35 per cent of the disease burden among children younger than five years, and 11 per cent of the total global Disability Adjusted Years.<sup>13</sup> Whereas, severe wasting, stunting, and intrauterine growth restriction are estimated to constitute the largest percentage of any risk factors causing global deaths, and Disability-Adjusted Years among children younger than five years.<sup>14</sup> Acute malnutrition is associated with high mortality risk and attributed to causing 14.6 per cent of all child deaths under five years old.<sup>15</sup> Undernutrition

9 United Nations Children's Fund (UNICEF). 2013. *Improving child nutrition: the achievable imperative for global progress*. New York: UNICEF.

10 UNICEF, World Health Organization (WHO) and World Bank Group. 2014. Joint child malnutrition estimates – Levels and trends. *Global Database on Child Growth and Malnutrition*. [<http://www.who.int/nutgrowthdb/estimates2014/en/>].

11 Ibid.

12 Kenya National Bureau of Statistics (KNBS). 2015. *Kenya demographic and health surveys, 2014: Key indicators*. Nairobi, Kenya: KNBS. 76. [<https://bit.ly/3kh70pf>].

13 Black, R.E., Allen, L.H., Bhutta, Z.A., Caulfield, L.E., De Onis, M., Ezzati, M., Mathers, C. & Rivera, J. 2008. Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet*, 371(9608), January:243-260. [[https://doi.org/10.1016/S0140-6736\(07\)61690-0](https://doi.org/10.1016/S0140-6736(07)61690-0)].

14 Black, R.E., Allen, L.H., Bhutta, Z.A., Caulfield, L.E., De Onis, M., Ezzati, M., Mathers, C. & Rivera, J. 2008. Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet*, 371(9608), January:243-260. [[https://doi.org/10.1016/S0140-6736\(07\)61690-0](https://doi.org/10.1016/S0140-6736(07)61690-0)].

15 Ibid.

is highly correlated with short-term and long-term adverse health effects on the affected children, and increased risk of metabolic diseases and obesity later in their life course.<sup>16</sup>

Inadequate breastfeeding and complementary feeding practices have been widely documented in developing countries. For example, about 37 per cent of infants younger than six months are exclusively breastfed in low- and middle-income countries, which is below the targeted global universal coverage of 90 per cent.<sup>17</sup> In particular, evidence from sub-Saharan Africa shows that breastfeeding practices remain sub-optimal with only 25 per cent exclusively breastfed for the first six months. Additionally, six per cent of infants in these countries are never breastfed.<sup>18</sup> This inadequate infant and young child feeding practices in the first two years of life is highly associated with the high burden of child undernutrition.<sup>19</sup> Particularly, suboptimum breastfeeding and complementary feeding practices, together with high rates of morbidity from infectious diseases such as pneumonia, diarrhoea and malaria, are the immediate causes of malnutrition in this age group.<sup>20</sup> To address these challenges, the WHO recommends optimal breastfeeding and complementary feeding practices, involving early initiation of breastfeeding, beginning from the first hour of life, exclusive breastfeeding of the infant for the first six months and continued breastfeeding up to two years of age in combination with adequate and safe complementary feeding to meet the evolving needs of the growing infant.<sup>21</sup> Evidence shows that scaling up of breastfeeding promotes child

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- 16 Lanigan, J. & Singhal, A. 2009. Early nutrition and long-term health: a practical approach. *Proceedings of the Nutrition Society*, 68(4), November:422-429. [<https://doi.org/10.1017/S002966510999019X>]; Victora, C.G., Adair, L., Fall, C., Hallal, P.C., Martorell, R., Richter, L. & Sachdev, H.S. 2008. Human capital. Maternal and Child Undernutrition Study G: Maternal and child undernutrition: consequences for adult health and human capital. *The Lancet*, 371(9609), January:340-357. [[https://doi.org/10.1016/S0140-6736\(07\)61692-4](https://doi.org/10.1016/S0140-6736(07)61692-4)].
- 17 Victora, C.G., Bahl, R., Barros, A.J., Franca, G.V., Horton, S., Krasevec, J., Murch, S., Sankar, M.J., Walker, N., Rollins, N.C. 2016. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *The Lancet*, 387(10017), January:475-490. [[https://doi.org/10.1016/S0140-6736\(15\)01024-7](https://doi.org/10.1016/S0140-6736(15)01024-7)].
- 18 Ogbo, F.A., Nguyen, H., Naz, S., Agho, K.E. 2018. Page A: The association between infant and young child feeding practices and diarrhoea in Tanzanian children. *Tropical Medicine and Health*, 46(1), December:2. [<https://doi.org/10.1186/s41182-018-0084-y>].
- 19 Victora et al., 2016.
- 20 UNICEF, 2013.
- 21 WHO. 2001. *The optimal duration of exclusive breastfeeding*. Report of an Expert Consultation, Geneva, Switzerland, 28-30 March. [<https://bit.ly/3pizGlr>].

survival by preventing an estimated 823 000 child deaths, and it has the potential to prevent 500 000 neonatal deaths annually.<sup>22</sup>

In Kenya, the proportion of exclusively breastfed children improved from 32 per cent in 2008 to 61 per cent in 2014 according to the Kenya Demographic and Health Survey.<sup>23</sup> However, the poor urban populations still present a higher burden of multiple nutrition-related health risks, which have been closely linked to inadequate poor infant and young child feeding practices, primarily including low breastfeeding rates.<sup>24</sup> In Africa, over half of the urban population (61.7 per cent) lives in slums. While in Kenya, 60-80 per cent of its urban population lives in slums. For example, in Nairobi, informal settlements cover just six per cent of the total residential land area, yet accommodates 60 per cent of the city's population.<sup>25</sup> Consequently, there is a need to focus on addressing challenges hindering optimal breastfeeding in vulnerable urban populations.

This chapter explores breastfeeding practices in poor urban settings with an emphasis on Nairobi's urban informal settlements where the African Population and Health Research Center conduct most of their research. The chapter is structured into four sections: In the first section, we discuss the importance of breastfeeding regarding early breastfeeding initiation, exclusive for the first six months and continued breastfeeding. We later discuss breastfeeding practices across sub-Saharan Africa and poor urban settings in sub-Saharan Africa in our second section of the book chapter. The third section explores challenges to optimal breastfeeding in poor urban settings which includes optimal exclusive breastfeeding for the first six months and continued breastfeeding. Most of the challenges discussed in this chapter are based on previous studies conducted by the African Population and Health Research Center in poor urban settlements in Kenya. The last part of this

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22 Victora et al., 2016.

23 KNBS, 2014.

24 Kimani-Murage, E.W., Schofield, L., Wekesah, F.M., Mohamed, S., Mberu, B., Ettarh, R., Egondi, T., Kyobutungi, C. & Ezech, A. 2014. Vulnerability to food insecurity in urban slums: experiences from Nairobi, Kenya. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 91(6), December:1098-1113. [<https://doi.org/10.1007/s11524-014-9894-3>]; Kimani-Murage, E.W., Wekesah, F.M., Wanjohi, M., Kyobutungi, C., Ezech, A.C., Musoke, R.N., Norris, S.A., Madise, N.J. & Griffiths, P. 2015. Factors affecting actualisation of the WHO breastfeeding recommendations in urban poor settings in Kenya. *Maternal & Child Nutrition*, 11(3), July:314-332. [<https://doi.org/10.1111/mcn.12161>].

25 United Nations Human Settlement Programme (UN-Habitat). 2014. *The State of African Cities 2014 – A Framework for Addressing Urban Challenges in Africa*. Nairobi. [<https://bit.ly/3eW9PeA>].

book chapter reflects on interventions to improve exclusive breastfeeding and support breastfeeding mothers.

## Importance and benefits of breastfeeding

The WHO describes breastfeeding as the normal way of providing infants with the needed nutrients for healthy growth and development.<sup>26</sup> Human milk is uniquely engineered for human infants and is the biologically ‘natural’ way to feed infants.<sup>27</sup> Optimal breastfeeding encompasses immediate initiation within one hour of birth, followed by exclusive breastfeeding (where no additional foods or liquids, including water, are added to breast milk) for the first six months of life, and after that continued breastfeeding along with appropriate complementary foods for two years or longer.<sup>28</sup> Under normal circumstances, when women are provided with accurate information, and with the support of their family, the health care system and society at large, all mothers may be able to breastfeed.

There are many health benefits and advantages of breastfeeding at all stages of life. Breast milk promotes the survival, healthy growth, and development of the child by offering a source of crucial food, vitamins, minerals, enzymes and antibodies that children require.<sup>29</sup> Additionally, breastfeeding confers benefits to the mother and the society at large.

### Benefits of breastfeeding to the child

Extant research shows that optimal breastfeeding has the potential to prevent more than 800 000 deaths in children younger than age five and 20 000 deaths in women every year in developing countries.<sup>30</sup> Breastfeeding supports healthy brain development, higher educational achievement, and lowers the risk of obesity and other chronic diseases.<sup>31</sup>

26 WHO. 2020. Breastfeeding. *Health Topics*. [<https://bit.ly/3pm0nWm>].

27 Allen, J. & Hector, D. 2005. Benefits of breastfeeding. *New South Wales Public Health Bulletin*, 16(3-4), March-April:42-46. [<https://doi.org/10.1071/nb05011>].

28 WHO, 2020.

29 Busch, D.W., Logan, K. & Wilkinson, A. 2014. Clinical practice breastfeeding recommendations for primary care: applying a tri-core breastfeeding conceptual model. *Journal of Pediatric Health Care*, 28(6), November-December:486-496. [<https://doi.org/10.1016/j.pedhc.2014.02.007>].

30 Victora et al., 2016.

31 WHO. 2018. Taking Action on Childhood Obesity. *World Obesity*. [<https://bit.ly/2JSBFwB>].

Breastfeeding protects against a wide range of immediate and longer-term adverse health outcomes. Breast milk is protective against infectious diseases such as upper and lower respiratory tract infections, gastrointestinal illnesses, and otitis media, during the infant period and beyond.<sup>32</sup> Breastfeeding also enhances intellectual and motor development and protects against sudden infant death syndrome,<sup>33</sup> asthma and atopy.<sup>34</sup>

There exists a link between breastfeeding and lower prevalence of childhood obesity and overweight/obesity later in life.<sup>35</sup> In a Canadian child cohort, breastfeeding was inversely associated with weight gain velocity and body mass index. These associations are dose-dependent, partially diminished when breast milk is fed from a bottle, and substantially weakened by formula supplementation after the neonatal period.<sup>36</sup> Breastfeeding is also a protective effect against type 2 diabetes, particularly among adolescents. Breastfeeding is associated with increased performance in intelligence tests in childhood and adolescence.<sup>37</sup>

### **Benefits of breastfeeding initiation within the first one hour of birth**

Early initiation to breastfeeding is associated with a decrease in neonatal death in infants. Research findings have shown that there is a marked dose-response of increasing risk of neonatal mortality with increasing delay in initiation of

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- 32 Heinig, M.J. & Dewey, K.G. 1996. Health advantages of breast feeding for infants: a critical review. *Nutrition Research Reviews*, 9(1), January:89-110. [<https://doi.org/10.1079/NRR19960007>].
- 33 McVea, K.L., Turner, P.D. & Pepler, D.K. 2000. The role of breastfeeding in sudden infant death syndrome. *Journal of Human Lactation*, 16(1), February:13-20. [<https://doi.org/10.1177/089033440001600104>].
- 34 Eigenmann, P. 2004. Breastfeeding and atopic eczema dermatitis syndrome: protective or harmful? *Allergy*, 59(Supplement 78), August:42-44. [<https://doi.org/10.1111/j.1398-9995.2004.00564.x>]; Kemp, A. & Kakakios, A. 2004. Asthma prevention: Breast is best? *Journal of Paediatrics and Child Health*, 40(7), July:337-339. [<https://doi.org/10.1111/j.1440-1754.2004.00397.x>].
- 35 Arenz, S., R ckerl, R., Koletzko, B. & Von Kries, R. 2004. Breast-feeding and childhood obesity: a systematic review. *International Journal of Obesity*, 28(10), October:1247. [<https://doi.org/10.1038/sj.ijo.0802758>]; WHO, 2018.
- 36 Azad, M.B., Vehling, L., Chan, D., Klopp, A., Nickel, N.C., McGavock, J.M., Becker, A.B., Mandhane, P.J., Turvey, S.E., Moraes, T.J, Taylor, M., Lefebvre, D.L., Sears, M.R., Subbarao, & CHILd Study Investigators. 2018. Infant Feeding and Weight Gain: Separating Breast Milk From Breastfeeding and Formula From Food. *Pediatrics*, 142(4), October. [<https://doi.org/10.1542/peds.2018-1092>].
- 37 Horta, B.L., Bahl, R., Mart n s, J.C., Victora, C.G. & WHO 2007. Evidence on the long-term effects of breastfeeding. *WHO Systematic Reviews and Meta-Analyses*. [<https://bit.ly/3klRI2z>].



breastfeeding from the first hour to the seventh day; with overall late initiation (after day one) being associated with a two-fold increase in risk.<sup>38</sup>

### **Benefits of exclusive breastfeeding**

Results from a Cochrane review to assess the effects of exclusive breastfeeding for six months on child health, growth, and development showed that breastfeeding, both in duration or exclusivity, played a role in reducing infant morbidity and mortality.<sup>39</sup> Infants that were exclusively breastfed for six months experienced less morbidity from gastrointestinal infections compared to those who were partially breastfed.<sup>40</sup> Evidence suggests that exclusively breastfed children are less susceptible to diarrhoea and pneumonia and are more likely to survive than non-breastfed children.<sup>41</sup>

### **Benefits of breastfeeding to the mother**

Mothers that breastfeed their infants are less likely to experience postpartum haemorrhage and are at a reduced risk of premenopausal breast and ovarian cancers.<sup>42</sup> Hormonal changes associated with breastfeeding help recovery after childbirth and suppress maternal fertility.<sup>43</sup>

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- 38 Edmond, K.M., Zandoh, C., Quigley, M.A., Amenga-Etego, S., Owusu-Agyei, S. & Kirkwood, B.R. 2006. Delayed Breastfeeding Initiation Increases Risk of Neonatal Mortality. *Pediatrics*, 117(3), March:e380. [<https://doi.org/10.1542/peds.2005-1496>].
- 39 Kramer, M.S. & Kakuma, R. 2012. Optimal duration of exclusive breastfeeding. *Cochrane Database of Systematic Reviews (CDoSr)*, 8, August:CD003517. [<https://doi.org/10.1002/14651858.CD003517.pub2>].
- 40 Ibid.
- 41 Black, R.E., Victora, C.G., Walker, S.P., Bhutta, Z.A., Christian, P., De Onis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., Uauy, R. & Maternal and Child Nutrition Study Group. 2013. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*, 382(9890), August:427-451. [[https://doi.org/10.1016/S0140-6736\(13\)60937-X](https://doi.org/10.1016/S0140-6736(13)60937-X)].
- 42 Collaborative Group on Hormonal Factors in Breast Cancer. 2002. Breast cancer and breastfeeding: collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50 302 women with breast cancer and 96 973 women without the disease. *The Lancet*, 360(9328), July:187-195. [[https://doi.org/10.1016/S0140-6736\(02\)09454-0](https://doi.org/10.1016/S0140-6736(02)09454-0)]; León-Cava, N., Lutter, C., Ross, J. & Martin, L. 2002. *Quantifying the benefits of breastfeeding: a summary of the evidence*. Pan American Health Organization, LINKAGES Project & Academy for Educational Development. [<https://bit.ly/3510hXl>]; Tung, K., Goodman, M.T., Wu, A.H., McDuffie, K., Wilkens, L.R., Kolonel, L.N., Nomura, A.M., Terada, K.Y., Carney, M.E. & Sobin, L.H. 2003. Reproductive factors and epithelial ovarian cancer risk by histologic type: a multiethnic case-control study. *American Journal of Epidemiology*, 158(7), October:629-638. [<https://doi.org/10.1093/aje/kwg177>].
- 43 Rea, M.F. 2004. Benefits of breastfeeding and women's health. *Journal de Pediatria* 2004,

Initiation of breastfeeding immediately after delivery stimulates the release of oxytocin, a hormone that helps to contract the uterus, expel the placenta, and reduce postpartum bleeding.<sup>44</sup> Exclusive breastfeeding through six months was associated with delayed resumption of menses and more rapid postpartum weight loss in the mother in studies conducted in Honduras, Bangladesh and Senegal.<sup>45</sup> Breastfeeding also allows women to space their pregnancies better.<sup>46</sup> Mothers who exclusively breastfed for six months had prolonged lactational amenorrhea, and consequently decreased exposure to the maternal health risks associated with short birth intervals.<sup>47</sup>

Breastfeeding has also been linked with decreases in maternal depression and improves mother-infant bonding.<sup>48</sup>

### **Economic benefits of improved breastfeeding**

Breast milk is safe (being the right temperature, requires no preparation, and is available even in environments with poor sanitation), and healthier, and also inexpensive. One can argue that breast milk is universally available, low-tech, of high impact in child survival and development. A novel analysis on the contribution of breastfeeding to the economy in Australia showed that breast milk yielded a net economic benefit (after adjustment for a small increase in maternal food consumption) of a minimum of 2.2 billion dollars each year.<sup>49</sup> With respect to the protective nature of breast milk, there are potential cost savings associated with the

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80(Supplement 5), November:142-146. [<https://doi.org/10.2223/1247>]; Labbok, M.H. 2001. Effects of breastfeeding on the mother. *Pediatric Clinics of North America*, 48(1), February:143-158. [[https://doi.org/10.1016/s0031-3955\(05\)70290-x](https://doi.org/10.1016/s0031-3955(05)70290-x)].

44 Kantrowitz-Gordon, I. 2005. The Oxytocin Factor: Tapping the Hormone of Calm, Love and Healing: Kerstin Uvnäs Moberg, MD, PhD. *Journal of Midwifery & Women's Health*, 50(1), December:e6-e6. [<https://doi.org/10.1016/j.jmwh.2004.07.002>].

45 Kramer et al., 2012.

46 UNICEF. 2018. Improving breastfeeding, complementary foods and feeding practices. *Nutrition*. [[https://www.unicef.org/nutrition/index\\_breastfeeding.html](https://www.unicef.org/nutrition/index_breastfeeding.html)].

47 Kramer et al., 2012.

48 Mezzacappa, E.S. 2004. Breastfeeding and maternal stress response and health. *Nutrition Reviews*, 62(7, Part 1), July:261-268. [<https://doi.org/10.1111/j.1753-4887.2004.tb00050.x>]; Hart, S., Boylan, L.M., Carroll, S., Musick, Y.A. & Lampe, R.M. 2003. Brief report: breast-fed one-week-olds demonstrate superior neurobehavioral organization. *Journal of Pediatric Psychology*, 28(8), December:529-534. [<https://doi.org/10.1093/jpepsy/jsg043>].

49 Smith, J. & Ingham, L.H. 2001. Breastfeeding and the measurement of economic progress. *Journal of Australian Political Economy*, 47, January:51. [<https://bit.ly/2Uhk6Zc>].

treatment of three childhood illnesses: otitis media, gastroenteritis, and necrotising enterocolitis which are observed among non-breastfed children.<sup>50</sup>

### **Breastfeeding practices across sub-Saharan Africa countries**

As previously mentioned, the WHO recommends that optimal breastfeeding practices should include early initiation of breastfeeding within one hour of life, exclusive breastfeeding for infants aged younger than six months, and continued breastfeeding for up to two years of age in combination with adequate complementary feeding. In sub-Saharan Africa, evidence shows that breastfeeding practices remain sub-optimal across the continent despite the benefits that breastfeeding would have in reducing early childhood malnutrition, and associated morbidity and mortality.<sup>51</sup> Closely, varying patterns and trends of sub-optimal breastfeeding do exist between and within sub-Saharan Africa countries, with the poorest populations facing greater challenges.

Multiple publications using national demographic surveys, for instance, Roberts, Carnahan and Gakidou, have indeed found that very few sub-Saharan Africa countries have made noticeable improvements in breastfeeding practices, while many others have lagged.<sup>52</sup> They looked at breastfeeding patterns and shifts from 1990-2010 in 137 developing countries and reported that exclusive breastfeeding increased by 47 per cent in Ghana as opposed to two per cent in Côte d'Ivoire across the studied period. The same authors reported additional disparities in 2010: prevalence of exclusive breastfeeding, for instance, was as low as 3.5 per cent in Djibouti while being as high as 77.3 per cent in Rwanda. Rates for early initiation of breastfeeding also had wide ranges, with the lowest recorded at a little above six per cent in Malawi and the highest close to 60 per cent in Chad. Prevalence of continued breastfeeding was generally seen quite high in multiple sub-Saharan Africa countries, with the highest prevalence reported closely to 95 per cent in the Gambia among children aged six to 11 months and in Burundi among children

50 Weimer, J.P. 2001. The economic benefits of breastfeeding: A review and analysis. *Food Assistance and Nutrition Research*, 13. United States Department of Agriculture: Economic Research Service. [[https://www.aeped.es/sites/default/files/6-economic\\_benefits.pdf](https://www.aeped.es/sites/default/files/6-economic_benefits.pdf)].

51 Ogbo, F.A., Agho, K., Ogeleka, P., Woolfenden, S., Page, A. & Eastwood, J. 2017. Infant feeding practices and diarrhoea in sub-Saharan African countries with high diarrhoea mortality. *PLoS One*, 12(2), February:e0171792. [<https://doi.org/10.1371/journal.pone.0171792>]; Black et al., 2008.

52 Roberts, T.J., Carnahan, E. & Gakidou, E. 2013. Can breastfeeding promote child health equity? A comprehensive analysis of breastfeeding patterns across the developing world and what we can learn from them. *BMC Medicine*, 11(1), December:254. [<https://bmcmmedicine.biomedcentral.com/articles/10.1186/1741-7015-11-254>].

aged 12-23 months. Recent studies still found that some countries have indeed made better progress than others (Issaka, Agho and Renzaho, 2017).<sup>53</sup>

Health Surveys conducted in 29 sub-Saharan countries from 2010-2015,<sup>54</sup> found again that Ghana was among the few countries that have seen remarkable optimisation of breastfeeding practices, with the prevalence of early initiation of breastfeeding and exclusive breastfeeding both a little over 50 per cent. The authors also found Rwanda to have the highest prevalence for exclusive breastfeeding, which impressively neared 90 per cent from data reported in 2014-2015. Recent research has specifically included Kenya among the few countries on target to attain the WHO or UNICEF objective of having at least 50 per cent of infants under six months old being exclusively breastfed.<sup>55</sup> The country has seen considerable progress with exclusive breastfeeding switching from 31 per cent in 2008 to 61 per cent in 2015. A previous publication by Madise, Matthews and Margetts had interestingly found that the prevalence of exclusive breastfeeding was worrisome across all sub-Saharan Africa countries, with prevalence ranging from two per cent in Nigeria to 34 per cent in Tanzania.<sup>56</sup> Thus, disparities in breastfeeding practices consistently reported have certainly widened in the last few years across nations. In turn, these differences have heightened further among the poorest communities.

## Breastfeeding practices among sub-Saharan Africa poor urban communities

Health and nutrition inequities within countries have been widely linked to poverty.<sup>57</sup> In other words, the poorest populations have been found to have more

53 Issaka, A.I., Agho, K.E. & Renzaho, A.M. 2017. Prevalence of key breastfeeding indicators in 29 sub-Saharan African countries: a meta-analysis of demographic and health surveys (2010-2015). *BMJ Open*, 7(10), October:e014145. [<https://doi.org/10.1136/bmjopen-2016-014145>].

54 Issaka AI, Agho KE, Renzaho AM: Prevalence of key breastfeeding indicators in 29 sub-Saharan African countries: a meta-analysis of demographic and health surveys (2010-2015). *BMJ Open* 2017, 7(10):e014145.

55 Wanjohi, M., Griffiths, P., Wekesah, F.M, Muriuki, P., Muhia, N., Musoke, R.N., Fouts, H.N., Madise, N.J. & Kimani-Murage, E.W. 2016. Sociocultural factors influencing breastfeeding practices in two slums in Nairobi, Kenya. *International Breastfeeding Journal*, 12:5. [<https://doi.org/10.1186%2Fs13006-016-0092-7>].

56 Madise, N.J., Matthews, Z. & Margetts, B. 1999. Heterogeneity of Child Nutritional Status between Households: A Comparison of Six Sub-Saharan African Countries. *Population Studies*, 53(3):331-343. [<https://doi.org/10.1080/00324720308092>].

57 Fotso, J. 2006. Child health inequities in developing countries: differences across urban and rural areas. *International Journal for Equity in Health*, 5(1):9.

limited access to health and social services, and subsequently present greater burdens of health and nutritional issues. The poorest populations comprise immensely urban communities that live in informal settlements. As a result, it becomes even more challenging for these communities to practice optimal health and nutrition care, especially among mothers, infants, and children.<sup>58</sup> In parallel, breastfeeding practices have been reported to be more problematic among urban sub-Saharan Africa poor communities. Kimani-Murage and colleagues (Madise, Fotso, Kyobutungi, Mutua, Gitau and Yatich, 2011) indeed found exclusive breastfeeding in Nairobi slums to be less than two per cent even though universal breastfeeding was high at 99 per cent and 85 per cent at 11 months old.<sup>59</sup> The authors reported that 37 per cent of children were not breastfed within one hour of delivery despite well-evidenced highly nutritious components and health benefits of colostrum (breast milk produced in the first hours after delivery). In addition, 40% of infants were fed something else than breast milk within 3 days after delivery, with a mean of introducing complementary feeding being one month after delivery." Introduction of complementary feeding within one month of birth is not recommended - it is the practice - which is an untoward practice. Briefly, reasons for such poor practices included, among others, unfounded beliefs of low production of breast milk due to food insecurity; and other cultural beliefs such as that colostrum is 'dirty'.

Unfounded beliefs of not having enough breast milk were again said to be the main reason for giving newborns other fluids before breast milk. Similarly, Engebretsen and colleagues (Wamani, Karamagi, Semiyaga, Tumwine and Tylleskär, 2007) found a high prevalence, 99 per cent, of breastfeeding among low-income households living in the Ugandan urban area.<sup>60</sup> However, exclusive breastfeeding was low, being practised in seven per cent and zero per cent of infants by three and six months of age, respectively. Predominant breastfeeding was also very sub-

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[<https://doi.org/10.1186%2F1475-9276-5-9>]; Ziraba, A.K., Fotso, J.C. & Ochako, R. 2009. Overweight and obesity in urban Africa: a problem of the rich or the poor? *BMC Public Health*, 9(1), December:465. [<https://doi.org/10.1186/1471-2458-9-465>].

58 Black et al., 2008.

59 Kimani-Murage, E.W., Madise, N.J., Fotso, J., Kyobutungi, C., Mutua, M.K., Gitau, T.M. & Yatich, N. 2011. Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya. *BMC Public Health*, 11, May:396. [<https://doi.org/10.1186/1471-2458-11-396>].

60 Engebretsen, I.M.S., Wamani, H., Karamagi, C., Semiyaga, N., Tumwine, J. & Tylleskär, T. 2007. Low adherence to exclusive breastfeeding in Eastern Uganda: a community-based cross-sectional study comparing dietary recall since birth with 24-hour recall. *BMC Pediatrics*, 7(1), March:10. [<https://doi.org/10.1186/1471-2431-7-10>].

optimal, with prevalence at 30 per cent and three per cent by the age of three and six months respectively.

In short, urban sub-Saharan Africa poor populations need interventions to optimise breastfeeding practices and consequently tackle multiple nutrition-related health and social issues.

## Challenges to (and facilitators of) optimal breastfeeding in poor urban settings in sub-Saharan Africa

Research findings from the urban slums in Nairobi demonstrate various challenges and barriers that hinder mothers from breastfeeding their children optimally.<sup>61</sup> In a conceptual framework on factors affecting breastfeeding in these settings, adapted from Hector, King, Webb and Heywood (2005), Kimani-Murage and colleagues (Wekesah et al., 2015) categorise these barriers and challenges into individual, group and societal level factors, as shown in Figure 7.1.<sup>62</sup>

Individual-level barriers relate to the mother, child, and the 'mother-child dyad'. Relating to the child, studies in the slums highlighted 'baby crying' as a reason for early introduction of complementary feeding, mainly due to the perception that the child is hungry and unsatisfied by breast milk. It is also documented in this setting that boys are likely to be introduced to complementary feeds earlier than girls.<sup>63</sup> A qualitative study on the cultural beliefs in the slums highlighted the fact that baby boys are thought to be strong, needing early introduction of foods to support their growth and that breastfeeding them for long may weaken the mothers, hence early cessation of breastfeeding.<sup>64</sup> Boys and small-sized babies are perceived to have higher nutritional needs, which breast milk alone cannot solely satisfy. They are thus more likely to be given complementary foods at earlier ages.<sup>65</sup> Relating to the mother, maternal age, marital status, health and nutrition

61 Goudet, S.M., Kimani-Murage, E.W., Wekesah, F.M., Wanjohi, M., Griffiths, P.L., Bogin, B. & Madise, N.J. 2017. How does poverty affect children's nutritional status in Nairobi slums? A qualitative study of the root causes of undernutrition. *Public Health Nutrition*, 20(4), March:608-619. [<https://doi.org/10.1017%2FS1368980016002445>]; Kimani-Murage et al., 2015; Wanjohi et al., 2016; Kimani-Murage et al., 2011.

62 Hector, D., King, L., Webb, K. & Heywood, P. 2005. Factors affecting breastfeeding practices. Applying a conceptual framework. *New South Wales Public Health Bulletin*, 16(3-4), March-April:52-55. [<https://doi.org/10.1071/nb05013>]; Kimani-Murage et al., 2015.

63 Kimani-Murage, 2011.

64 Wanjohi et al., 2016.

65 Kimani-Murage et al., 2015.



status are documented to have some influence on breastfeeding practices, with poorer practices among young and single mothers.<sup>66</sup> Qualitative studies in these settings indicate that young mothers are less knowledgeable on breastfeeding and care and have several competing issues that hinder them from breastfeeding optimally, including perceptions on their body image, peer influence and school. The multiple responsibilities of having to breastfeed, work and care for the family solely, is cited as a key constraint to optimal breastfeeding among single mothers.<sup>67</sup> A qualitative study in poor urban settings in Kenya indicates that stress, poor nutrition and health status of the mother are perceived causes of insufficient breast milk production. These are consequently barriers to exclusive breastfeeding, hence the early introduction of complementary feeding and cessation of breastfeeding.<sup>68</sup> Poor maternal nutritional status and perceived associations is a major barrier to optimal breastfeeding.<sup>69</sup> Concerns of mother to child transmission of HIV/Aids and misperceptions regarding breastfeeding while living with HIV/Aids are also considered an important barrier to optimal breastfeeding practices.<sup>70</sup> Important, given the high prevalence of HIV/Aids in poor urban settings, at about twice the national prevalence.<sup>71</sup> There is also reportedly highly unsettled advice regarding the current breastfeeding recommendations for HIV positive women which further confounds their decision on breastfeeding.<sup>72</sup>

Although some studies have shown fair knowledge of breastfeeding recommendations among mothers living in the slums, pockets of knowledge deficits on breastfeeding and child feeding are still documented as a cause for suboptimal breastfeeding practices. This is especially among young and teenage mothers who are said to rely heavily on the information from their parents, which may not be necessarily correct as relatives and peers are highlighted as key channels for breastfeeding myths and misconceptions in the same setting.<sup>73</sup>

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66 Kimani-Murage et al., 2011.

67 Kimani-Murage et al., 2015; Wanjohi et al., 2016; Goudet et al., 2017.

68 Ibid.

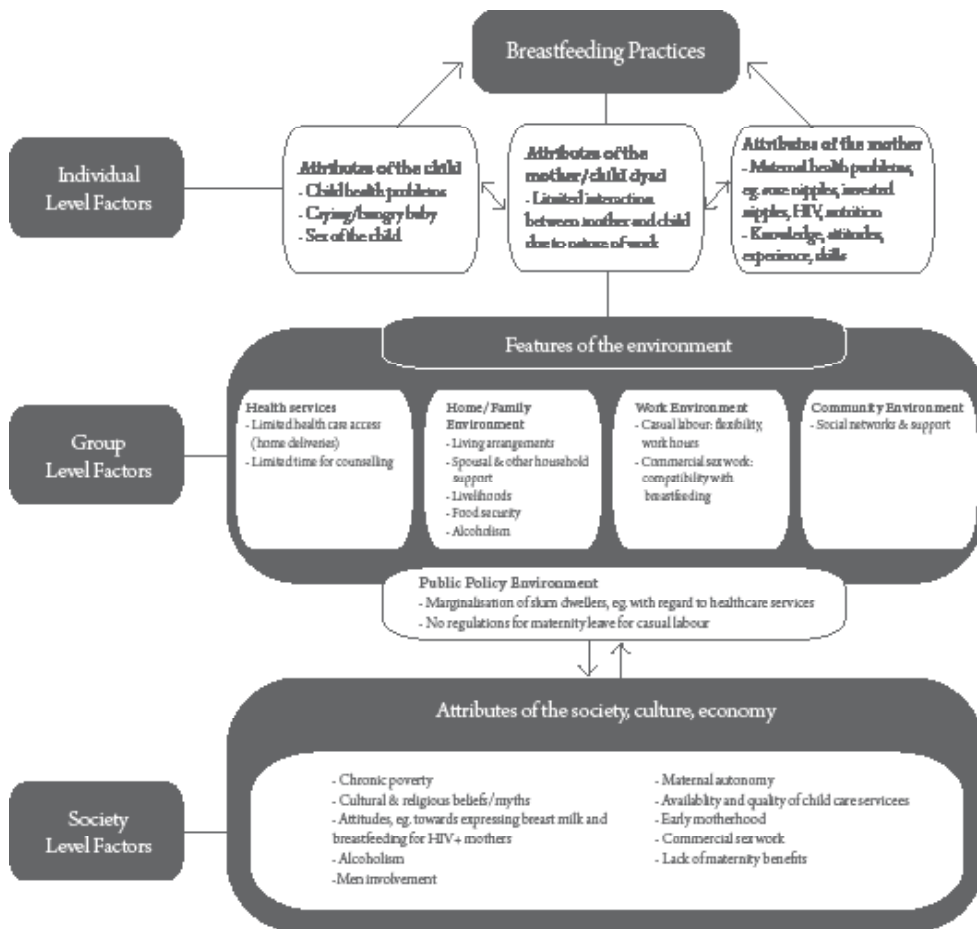
69 Kimani-Murage et al., 2015; Kimani-Murage et al., 2014.

70 Ibid.; Wanjohi et al., 2016.

71 Madise, N.J., Ziraba, A.K., Inungu, J., Khamadi, S.A., Ezech, A., Zulu, E.M., Kebaso, J., Okoth, V., Mwau, M. 2012. Are slum dwellers at heightened risk of HIV infection than other urban residents? Evidence from population-based HIV prevalence surveys in Kenya. *Health & Place*, 18(5), September:1144-1152. [<https://doi.org/10.1016/j.healthplace.2012.04.003>].

72 Kimani-Murage et al., 2015.

73 Ibid.; Goudet et al., 2017; Wanjohi et al., 2016.



**Figure 7.1** Conceptual framework of factors affecting breastfeeding practices in poor urban settings.<sup>74</sup>

Group level factors, constituting the attributes of the environments where the mother and the child live, including the home, work and community where they live and the accessibility and availability of services to promote optimal breastfeeding. Since they are not recognised as legal settlements, the two informal settlements are characterised by poor access to basic services and amenities, health and education.<sup>75</sup>

74 Kimani-Murage et al., 2015.

75 Emina, J., Beguy, D., Zulu, E., Ezeh, A., Muindi, K. & Elung'ata, P. 2011. Monitoring of health and demographic outcomes in poor urban settlements: evidence from the Nairobi Urban Health and Demographic Surveillance System. *Journal of Urban Health*, 88(Supplement 2), June:200-218. [<https://doi.org/10.1007/s11524-011-9594-1>].

There are high levels of poverty, unemployment and deprived livelihoods.<sup>76</sup> Such deprivations include poor housing: dwellings are usually made of mud, with roofs often made of iron sheets. All these poor living conditions and livelihoods in the slums are highlighted as major barriers to optimal infant and young child feeding.<sup>77</sup> In some cases, the structures within which the families live are too small which works against breastfeeding as cited by Kimani-Murage and colleagues (Schofield, Wekesah, Mohamed, Mberu, Ettarh, Egondi, Kyobutungi and Ezeh, 2014).<sup>78</sup>

Further, poverty, lack of stable employment and insufficient family income forces some women too soon after delivery to seek employment and work for long hours, a major constraint to breastfeeding, which translates to the early introduction of complementary feeding and cessation of breastfeeding.<sup>79</sup> Majority of women in the slums work in the informal sector, mainly as casual labourers or petty traders, meaning that they do not have access to maternity leave, which further constrains their ability to combine work and optimal breastfeeding coupled with lack of workplace support for breastfeeding for those who are in employment.<sup>80</sup> There are also cultural beliefs against expressing breast milk which is a strategy to facilitate continued breastfeeding even when mothers are separated from their children.<sup>81</sup> Poor women, often living in food-insecure households, are said to have inadequate food, and this is perceived to affect breast milk production and flow, leading to the early introduction of complementary foods or cessation of breastfeeding altogether.<sup>82</sup>

Society level factors which influence the acceptability and expectations regarding breastfeeding and provide the context for breastfeeding, including poverty, myths and misconceptions about breastfeeding in the community, as well as the support available in the community for the mothers to breastfeed optimally. Since childcare and nutrition are socially and culturally a responsibility of women, male involvement is suboptimal. Evidence also indicates that some men go as far as

76 Beguy, D., Ndugwa, R. & Kabiru, C.W. 2013. Entry into motherhood among adolescent girls in two informal settlements in Nairobi, Kenya. *Journal of Biosocial Science*, 45(6), November:721-742. [<https://doi.org/10.1017/S0021932013000199>]; Kabiru, C.W., Beguy, D., Undie, C., Zulu, E.M., Ezeh, A.C. 2010. Transition into first sex among adolescents in slum and non-slum communities in Nairobi, Kenya. *Journal of youth studies*, 13(4), August:453-471. [<https://doi.org/10.1080%2F13676261003801754>].

77 Kimani-Murage et al., 2015.

78 Kimani-Murage et al., 2014.

79 Ibid.; Goudet et al., 2017.

80 Emina et al. 2011.

81 Kimani-Murage et al., 2015; Wanjohi et al., 2016.

82 Kimani-Murage et al., 2015; Kimani-Murage, 2011; Goudet et al., 2017.

complaining about reduced attention they get from their spouses who take time to breastfeed. Moreover, women in poor urban settings do most domestic chores in their households, even after delivery, unlike in urban wealthier groups who engage house helps or those in rural areas which are normally supported by relatives. This impacts on optimal child feeding, thereby affecting the duration of exclusive breastfeeding or any breastfeeding.<sup>83</sup> Further, poor access to health services is documented in this setting, including antenatal and postnatal services and hence inadequate professional support on breastfeeding, which may contribute to poor breastfeeding knowledge and skills among mothers in this setting.<sup>84</sup>

Delinquent behaviour, including alcoholism and sex trade, are common in the slum, more so among the young population.<sup>85</sup> These are also highlighted as key constraints for optimal breastfeeding. According to studies in this setting alcoholic mothers neglect their children and have no time to breastfeed, while, alcoholism among men leads to family neglect, driving the family into poverty and forcing the women to look for work even when they have young babies.<sup>86</sup> Similarly, sex workers are said to neglect their children often as they go to work while cultural beliefs against breastfeeding when engaging in the sex trade further contribute to sub-optimal breastfeeding in such cases.<sup>87</sup>

Cultural beliefs and practices are also highlighted as important factors influencing breastfeeding and complementary feeding practices.<sup>88</sup> Wanjohi, Griffiths, Wekesah, Muriuki, Muhia, Musoke, Fouts, Madise, and Kimani-Murage (2017) documented some negative cultural beliefs in poor urban settings that hinder optimal breastfeeding practices. For instance, some of the mothers considered colostrum as dirty; others believed that breastfeeding while engaging in extramarital affairs was a bad omen or a curse; fear of the evil eye (malevolent glare that is believed to be a curse associated with witchcraft) when breastfeeding in public.<sup>89</sup>

## Interventions to improve breastfeeding and support mothers in breastfeeding

It is estimated that interventions that promote optimal breastfeeding and complementary feeding could prevent about a fifth of the deaths of children

83 Kimani-Murage et al., 2015.

84 Ibid.

85 Beguy et al., 2013; Kabiru et al., 2010.

86 Kimani-Murage et al., 2015; Goudet et al., 2017.

87 Wanjohi et al., 2016.

88 Ibid.

89 Ibid.

younger than five years in countries with high mortality rates.<sup>90</sup> In recognition of the importance of nutrition in the first 1 000 days of life, the WHO and UNICEF jointly developed the global strategy for infant and young child nutrition in 2002, aiming to revitalise efforts to protect, promote and support appropriate infant and young child feeding.<sup>91</sup> The promotion of breastfeeding and providing supportive strategies was listed by Bhutta and colleagues (Das, Rizvi, Gaffey, Walker, Horton, Webb, Lartey and Black, 2013) as one of the ten evidence-based high impact interventions for improvement of infant and child nutrition and survival.<sup>92</sup> To further support interventions towards the promotion of breastfeeding, it is estimated that interventions that promote optimal breastfeeding and complementary feeding could prevent about a fifth of deaths in children younger than five years in countries with high child mortality rates.<sup>93</sup> Additionally, interventions to increase maternal knowledge of breastfeeding benefits and family and clinician support of breastfeeding in the prenatal period may help increase breastfeeding rates.<sup>94</sup> Some of the interventions to support breastfeeding are highlighted below.

### **The Baby-Friendly Hospital Initiative**

The Baby-Friendly Hospital Initiative was launched by the WHO and UNICEF in 1991, following the Innocenti Declaration of 1990.<sup>95</sup> The Initiative is a global effort to implement practices that protect, promote and support breastfeeding and is supported by the fact that hospitals and maternity units set a powerful example

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- 90 Kramer, M.S. & Kakuma, R. 2004. The optimal duration of exclusive breastfeeding: A Systematic Review. In: Pickering, L.K., Morrow, A.L., Ruiz-Palacios, G.M. & Schanler, R.J. (eds). *Protecting Infants through Human Milk. Advances in Experimental Medicine and Biology*, 554. Boston, MA: Springer. [[https://doi.org/10.1007/978-1-4757-4242-8\\_7](https://doi.org/10.1007/978-1-4757-4242-8_7)]; Jones, G., Steketee, R.W., Black, R.E., Bhutta, Z.A. & Morris, S.S. 2003. How many child deaths can we prevent this year? *The Lancet*, 362(9377), July:65-71. [[https://doi.org/10.1016/S0140-6736\(03\)13811-1](https://doi.org/10.1016/S0140-6736(03)13811-1)].
- 91 WHO & UNICEF. 2003. Global strategy for infant and young child feeding. *Nutrition*. [<https://www.who.int/nutrition/publications/infantfeeding/9241562218/en/>].
- 92 Bhutta, Z.A., Das, J.K., Rizvi, A., Gaffey, M.F., Walker, N., Horton, S., Webb, P., Lartey, A. & Black, R.E. 2013. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *The Lancet*, 382(9890), August:452-477. [[https://doi.org/10.1016/S0140-6736\(13\)60996-4](https://doi.org/10.1016/S0140-6736(13)60996-4)].
- 93 Jones et al., 2003; Kramer et al., 2012.
- 94 Kornides, M. & Kitsantas, P. 2013. Evaluation of breastfeeding promotion, support, and knowledge of benefits on breastfeeding outcomes. *Journal of Child Health Care*, 17(3), September:264-273. [<https://doi.org/10.1177/1367493512461460>].
- 95 UNICEF. 2005. The Baby-Friendly Hospital Initiative. *Nutrition*. [[https://www.unicef.org/nutrition/index\\_24806.html](https://www.unicef.org/nutrition/index_24806.html)].

for new mothers.<sup>96</sup> The Initiative has a measurable and proven impact, increasing the likelihood of babies being exclusively breastfed for the first six months. The strategy promotes breastfeeding in maternity wards around the time of delivery and is shown to be effective in some settings, particularly in the more developed countries.<sup>97</sup> For example, a study showed that the Baby-Friendly Hospital Initiative and effective implementation of the Ten Steps to Successful Breastfeeding in the USA led to breastfeeding initiation rate increasing from 58 per cent (1995) to 77.5 per cent (1998) to 86.5 per cent (1999). Infants being exclusively breastfed increased from 5.5 per cent (1995) to 28.5 per cent (1998) to 33.5 per cent (1999).<sup>98</sup> In less developed countries, where a significant number of deliveries do not occur in health facilities, the effectiveness of the Baby-Friendly Hospital Initiative may be limited. In sub-Saharan Africa, about 60 per cent of urban residents live in slum settlements, where social and health services are limited, and many women either deliver at home or sub-standard private health facilities, meaning that many of these women may not benefit from the counselling on infant and young child nutrition offered through the Baby-Friendly Hospital Initiative.<sup>99</sup>

### ***The Baby-Friendly Community Initiative***

The Baby-Friendly Community Initiative is also a global initiative launched by the WHO and UNICEF and aims to protect, promote and support breastfeeding at the community level. The Baby-Friendly Community Initiative is an integrated approach that emphasises linkages between infant and maternal nutrition as well as their environment. The components of the BFCI include home based counselling which has been shown to be effective. Given difficulty of reaching majority of poor women through the Baby Friendly Hospital Initiative due to limited health care access and utilization around the time of delivery, some sub-Saharan countries such as Kenya, Gambia, Nigeria among others have explored the adoption of the BFCI which is delivered through community health volunteers (CHVs) to promote optimal

96 WHO. 2020. Baby-friendly Hospital Initiative. Health Topics: Nutrition. [<http://www.who.int/nutrition/bfhi/en/>].

97 Murray, C.J. & Lopez, A.D. 1997. Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. *The Lancet*, 349(9063), May:1436-1442. [[https://doi.org/10.1016/S0140-6736\(96\)07495-8](https://doi.org/10.1016/S0140-6736(96)07495-8)]; WHO. 2002. *The World Health Report 2002: Reducing risks, promoting healthy life*. [<https://www.who.int/whr/2002/en/>].

98 Philipp, B.L., Merewood, A., Miller, L.W., Chawla, N., Murphy-Smith, M.M., Gomes, J.S., Cimo, S. & Cook, J.T. 2001. Baby-Friendly Hospital Initiative Improves Breastfeeding Initiation Rates in a US Hospital Setting. *Pediatrics*, 108(3), September:677. [<https://doi.org/10.1542/peds.108.3.677>].

99 Jones et al., 2003; KNBS & ICF Macro. 2010. *Kenya Demographic and Health Survey 2008-09*. Calverton, Maryland: KNBS and ICF Macro. [<https://bit.ly/2IugnoG>].



breastfeeding and infant and young child feeding, hence enhance health coverage. The effectiveness of community-based interventions which use community health workers to promote health, including optimal breastfeeding practices, has been documented. Through a cluster-randomised controlled trial of the key components of the Initiative (Kimani-Murage, Norris, Mutua, Wekesah, Wanjohi, Muhia, Muriuki, Egondi, Kyobutungi, Ezeh, Musoke, McGarvey, Madise and Griffiths, 2016) followed slightly over 1 000 mother-child pairs during pregnancy and for one year after birth on their breastfeeding and infant feeding practices in poor urban settings in Kenya. The study primarily tested the effectiveness of personalised, home-based nutritional counselling by community health volunteers on breastfeeding practices among women in Nairobi's urban informal settlements. The study indicated increased exclusive breastfeeding from about two per cent, before the intervention, to 55 per cent, during the intervention.<sup>100</sup> These findings depict the potential effectiveness of the implementation of the Baby-Friendly Community Initiative through the community health strategy in promoting optimal breastfeeding practices at the community level in underserved settings such as poor urban settings.

### **Human Milk Banks**

Despite the lifesaving and other important benefits of human milk, many vulnerable infants, the majority of whom are sick, preterm, or have low birth weight, have no access to their mother's milk due to the multitude of factors that affect premature and sick infants such as maternal illness, maternal death, abandonment, or delayed lactation. In the absence of a mother's milk, the WHO recommends donated human milk as the next best evidence-based alternative.<sup>101</sup> In line with this, the WHO has issued a global call to scale up the provision of safe donated human milk by the setting up of Human Milk Banks.<sup>102</sup> Currently, an inadequate number of close to 600 Human Milk Banks exist around the world, almost half of

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- 100 Kimani-Murage, E.W., Norris, S.A., Mutua, M.K., Wekesah, F.M., Wanjohi, M., Muhia, N., Muriuki, P., Egondi, T., Kyobutungi, C., Ezeh, A.C., Musoke, R.N., McGarvey, S.T., Madise, N.J. & Griffiths, P.L. 2016. Potential effectiveness of Community Health Strategy to promote exclusive breastfeeding in urban poor settings in Nairobi, Kenya: a quasi-experimental study. *Journal of Developmental Origins of Health and Disease*, 7(2), April:172-184. [<https://doi.org/10.1017/S2040174415007941>].
- 101 Quigley, M. & McGuire, W. 2014. Formula versus donor breast milk for feeding preterm or low birth weight infants. *Cochrane Database of Systematic Reviews*, 4, April:CD002971. [<https://doi.org/10.1002/14651858.CD002971.pub3>]; Edmond, K., Bahl, R. & WHO. 2006. Optimal feeding of low-birth-weight infants: Technical review. *Maternal, newborn, child and adolescent health*. [<https://bit.ly/32wLvek>].
- 102 WHO. 2009. *Resolutions and Decisions*. Sixty-Second World Health Assembly, Geneva, 18-22 May. [<https://bit.ly/2IqxzLY>].

which are in Brazil. It is estimated that up to 40 per cent of neonates in neonatal intensive care unit settings around the world require donor human milk at some point during admission, either as a single feed or long-term. Human Milk Banks collect, pasteurise, test, and store safe, donated milk from lactating mothers and provide it to infants in need, ensuring that even if babies cannot breastfeed, they still receive human milk as soon as possible. As a pivotal component of early and essential newborn care and of protecting, promoting and supporting breastfeeding, Human Milk Banks are vital to ensure equitable access to human milk, especially sick neonates. Prematurity is currently the leading cause of death among children under five globally with one million premature babies dying every year, particularly in limited-resource settings.<sup>103</sup>

Human Milk Banking is one of the impending implementation research which needs to be actualised in most low- and middle-income countries since different infants have specific dietary needs after delivery depending on the mother-infant dyad's health status.

The success of an established Human Milk Bank lies in government endorsement and support in breastfeeding promotion, addressing misinformation on the safety of donated milk, Kangaroo Mother Care and now the ethical provision of donated human milk for infants in need. This solution also requires addressing awareness needs of the public by education and assurance about the safety and the rigorous processes of the Human Milk Banks. Communities would accept the use of donated human milk. In Kenya, an assessment of the acceptability of human donor milk has been established.<sup>104</sup> Further, a pilot study on its operational feasibility is underway in a hospital situated in a low-income urban area in Kenya that primarily serves poor urban residents.

## Workplace support for breastfeeding mothers

One of the reasons for suboptimal breastfeeding is mothers' resuming work after childbirth in workplaces that are not fully supportive of breastfeeding.<sup>105</sup> Work

103 WHO. 2018. Fact Sheets: Preterm Birth. *Newsroom*. [<https://bit.ly/3pibBvd>].

104 Kimani-Murage, E. 2017. *Integrating Human Milk Banking with Breastfeeding Promotion and Newborn Care: is Kenya Ready?* Briefing Paper. African Population and Health Research Center. [<https://bit.ly/2Uhjumm>].

105 Food Policy Research Institute. 2016. *Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030*. Washington, DC. [<http://ebrary.ifpri.org/utills/getfile/collection/p15738coll2/id/130354/filename/130565.pdf>]; Bhutta Z.A., Salam, R.A. 2012: Global nutrition epidemiology and trends. *Annals of Nutrition Metabolism*, 61(Supplement 1):19-27. [<https://doi.org/10.1159/000345167>].

Tsai, S. 2013. Impact of a breastfeeding-friendly workplace on an employed mother's

has been cited as a major factor in suboptimal breastfeeding practices in poor urban settings in Kenya, for example.<sup>106</sup> A breastfeeding-friendly workplace for the employed mother has been found to increase the duration of breastfeeding.<sup>107</sup> Evidence from 38 low-income and middle-income countries on the association between extending the duration of legislated paid maternity leave and improved breastfeeding practices showed that a one-month increase in the legislated duration of paid maternity leave was associated with a seven percentage point increase in the prevalence of early initiation of breastfeeding, a six percentage point increase in the prevalence of exclusive breastfeeding and a 2.2-month increase in breastfeeding duration.<sup>108</sup> This study demonstrates, therefore, that extending the duration of legislated paid maternity leave can promote breastfeeding practices and reduce barriers to breastfeeding for working mothers.

The Baby-Friendly Workplace Initiative was launched during the breastfeeding week in 1993 to focus on the issue of combining women's work and breastfeeding and to complement the Baby-Friendly Hospital Initiative and the Baby-Friendly Community Initiative, taking baby-friendliness outside the hospitals and beyond the community into women's working environments. This Initiatives gave breastfeeding advocates around the world a launching pad to apply the concept to raise awareness about breastfeeding and the rights and needs of working breastfeeding women, particularly during the first week of August, which is World Breastfeeding Week. The action ideas developed for the Baby-Friendly Workplace Initiative urged working women, employers, unions and worker groups, health care workers, environments/community action groups, women's groups as well as policymakers to play their respective roles to promote breastfeeding at the workplace.

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intention to continue breastfeeding after returning to work. *Breastfeeding Medicine*, 8(2):210-216. [<https://doi.org/10.1089/bfm.2012.0119>].

106 Kimani-Murage et al., 2015; Kimani-Murage et al., 2014.

107 Mills, S.P. 2009. Workplace lactation programs: A critical element for breastfeeding mothers' success. *Journal of the American Association of Occupational Health Nurses*, 57(6):227-231. [<https://doi.org/10.1177/216507990905700605>]; Wyatt, S.N. 2002. Challenges of the working breastfeeding mother: Workplace solutions. *Journal of the American Association of Occupational Health Nurses*, 50(2), February:61-66. [<https://journals.sagepub.com/doi/pdf/10.1177/216507990205000204>].

108 Chai, Y., Nandi, A. & Heymann, J. 2018. Does extending the duration of legislated paid maternity leave improve breastfeeding practices? Evidence from 38 low-income and middle-income countries. *BMJ Global Health*, 3(5): e001032. [<https://doi.org/10.1136/bmjgh-2018-001032>].

Support for breastfeeding in the workplace benefits employees if they are:

- taught about breastfeeding;
- offered professional lactation management services and support;
- provided a designated private space for breastfeeding or expressing milk;
- provided facilities for expressing breast milk including breast pumps;
- allowed flexible scheduling to support milk expression during work;
- supported by written corporate policies; and
- given options for returning to work, for example, extended maternity leave, part-time work, teleworking, and providing on-site or near-site childcare.

Kenya has enacted a law that mandates employers to provide support for breastfeeding mothers at the workplace.<sup>109</sup> Innovative ways of supporting women in poor urban settings to combine work with breastfeeding in the context of the complex realities in poor urban settings are needed.<sup>110</sup>

## Conclusion

This chapter has explored breastfeeding practices, associated challenges and interventions that could promote breastfeeding in poor urban settings in sub-Saharan Africa, and highlighted poor breastfeeding practices in these settings. Urban slums are faced by unique social and structural factors hindering optimal breastfeeding including poverty and non-conducive livelihood opportunities, poor living conditions, food insecurity, poor professional and social support to breastfeeding mothers and a knowledge deficit coupled with negative cultural beliefs and misconceptions on breastfeeding. This situation calls for macro-level policies and interventions that consider the ecological setting. Promising interventions may include global initiatives such as the Baby-Friendly Hospital Initiative, the Baby-Friendly Community Initiative, the Human Milk Banks and the Baby-friendly Workplace Initiative. However, innovation in their implementation is necessary to take into consideration the social and structural complexities present in the settings where they are to be introduced.

109 RK (Republic of Kenya). 2017. Sections 71 & 72. *Health Act 21 of 2017*. [<https://bit.ly/2Sm7igW>].

110 Kimani-Murage et al., 2015; Kimani-Murage et al., 2014.