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Care for Child Development in Sultanate of Oman

Paving the road for children to develop on track

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18 19 **Introduction**

20 The early years of life are considered the most critical time for neural and brain
21 development, establishing the groundwork for long-term mental, social and educational
22 achievements. ⁽¹⁾ During this time, the child's growth, sense of security, and sense of well-
23 being are substantially influenced by good nutrition and the thoughtful care of the family
24 and other early caregivers. Additionally, studies have shown that engaging and child-
25 focused learning-promoting early childhood development (ECD) programs are essential
26 for their effectiveness in both formal and informal settings. The economic impact of
27 investing in early child development care programs was estimated to be around 13% per
28 annum return on investment for every dollar spent. ⁽²⁾

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30 **Neurobiological and scientific evidence basis of early developmental care**

31 The ability of the nervous system to adapt to experiences is one of the fundamental
32 features of the human brain. Epigenetic, immunological, physiological, and psychological
33 adaptations to the environment start before conception, according to studies on early
34 human development, and they impact brain development throughout a child's life.⁽³⁾ This
35 is considered a direct function of the high degree of brain plasticity in early childhood.⁽⁴⁾

36 This insight necessitates a strategy that targets caregivers and kids with efficient
37 treatments at critical points throughout the life cycle. The three to a five-year window
38 after conception is of particular significance. According to research on long-term effects
39 drawn from low- and middle-income countries, a program in Jamaica designed to
40 improve the cognitive development of stunted children 25 years ago led to a considerable
41 rise in average adult wages. On the other hand, growth failure in the first two years of life
42 has negative repercussions on adult health and human capital, including chronic illness,
43 reduced educational attainment, and adult earnings.^(5,6) Additionally, inadequacy and
44 disadvantages continue into the next generation, creating a vicious intergenerational cycle
45 that results in the loss of human capital and the continuation of poverty. These results
46 highlight the early childhood development programs' revolutionary potential.⁽⁷⁾

47

48 **The global gap in reaching developmental potential**

49 In a global context, it was estimated that 43% of children under five years of age are not
50 reaching their developmental potential. This gap was attributed to two main reasons: the
51 failure to apply evidence-based knowledge on ECD to shape young children's
52 development; and the inability to integrate programs utilizing a multisectoral approach
53 scaling up programs during crucial stages in the early life course.⁽⁴⁾ The impact of early
54 caregiving on children's learning outcomes, cognitive functions and social behaviours is
55 undeniable in the modern scientific era. The lack of knowledge dissemination regarding
56 the relationship between early caregiving experience and its underpinning
57 neurobiological process hampers the expansion of ECD programs. Although these
58 concepts originated in behavioural neuroscience, they have since found numerous
59 applications and, as a result, have lost their connection to neurobiology. This is
60 regrettable, but in many aspects, it illustrates how little is yet known about the brain
61 mechanisms that develop, maintain, and limit sensitive periods in human development.⁽⁸⁾

62

63 **International experiences of ECD programs**

64 The Jamaica Early Childhood Stimulation intervention project, which studied the effects
65 of an early childhood home visiting program on education and labour market results at
66 age 31, is one of the most renowned studies in early child development. The Jamaica
67 program was a two-year home-based intervention meant to increase the quality of
68 mother-child interactions in order to promote cognitive, linguistic, and psychosocial
69 abilities. The program targeted children living in Kingston's underprivileged districts who
70 were stunted and disadvantaged. A randomized trial including stunted children between 9
71 and 24 months assessed the therapy. The researchers discovered substantial and
72 statistically significant effects on income and education. In a long term follow-up, the
73 treatment group earns 43 per cent more in wages and 37 per cent more in earnings than
74 the control group.⁽⁹⁾

75

76 Basic impact assessments comparing ECD to no ECD have consistently demonstrated
77 promising outcomes. Children who participate in ECD programs have better
78 developmental results than those who do not, according to rigorous studies conducted in
79 high-income countries such as the US and the United Kingdom and in low- and middle-
80 income countries like Argentina, Bangladesh, Indonesia, Vietnam, and Mozambique.
81 Positive effects of preschool exposure on cognitive skills, including language, numeracy,
82 and psychomotor development, are the most constant finding throughout these
83 researches.⁽¹⁰⁾

84

85 In order to help children around the globe benefit from those scientific results and reach
86 their full potential, the Lancet published a series titled "Advancing Early Childhood
87 Development: from Science to Scale" that quantified the cost and demonstrated that
88 children who are not adequately nurtured during their early years might lose a quarter of
89 their adult earning potential. The Series presents a road map for effective interventions in
90 early life, as well as evidence that such programs directly contribute to alleviating
91 extreme poverty, improving shared prosperity, supporting healthy lives and learning,
92 decreasing inequities, and sustaining peaceful communities.⁽¹¹⁻¹⁴⁾

93

94 **Early Childhood Development (ECD) in international agenda**

95 Early Childhood Development (ECD) was included in United Nations Sustainable
96 Development Goals (SDGs). On the same line, the Global Strategy for Women's,
97 Children's and Adolescents' Health (2016-2030) was issued by the World Health
98 Organization (WHO) with a vision that women, children and adolescents in every setting
99 achieve health and well-being and have social and economic opportunities, and is able to
100 participate fully in shaping prosperous societies. It aspires to keep women, children, and
101 adolescents at the centre of the sustainable development (SDG) agenda. The vision of the
102 Global Strategy is driven by the tremendous financial return on investment and the
103 human rights of physical and mental health. A 60-indicator monitoring framework is
104 included in the Global Strategy. The progress of ECD is measured by indicator 4.2.1, "the
105 proportion of children under 5 years of age who are developmentally on track in health,
106 learning, and psychosocial well-being, by sex".⁽¹⁵⁾ Subsequently, World Health
107 Organization (WHO), United Nations Children's Fund (UNICEF), the World Bank Group
108 and other partners introduced the Nurturing Care Framework (NCF) in 2018. The NCF
109 provided a plan of action consisting of five tactical components to enable a whole-of-
110 society and whole-of-government approach to ensuring that every kid receives loving
111 care. The NCF is a series of practices that promote children's health, nutrition, security
112 and safety, responsive caring, and early learning opportunities. Nurturing children
113 involves ensuring they are secure, healthy, and well-nourished, paying attention to and
114 reacting to their needs and interests, and encouraging them to explore their surroundings
115 and engage with their caregivers and others.

116

117 Nurturing care is not just essential for the development of young children. In addition, it
118 protects them from the most detrimental impacts of adversity by reducing their stress
119 levels and fostering emotional and cognitive coping strategies. Nurturing care is
120 particularly crucial for children with developmental challenges and impairments, as well
121 as for preventing child abuse.^(16,17) The NCF recommends multisectoral implementation
122 policies and programmes that capitalize on the interdependencies across its components
123 that extend from preconception through adolescence⁽¹⁷⁾ One of the integral components

124 of the NCF is responsive care which encompasses Care for Child Development (CCD)
125 program, which offers advice to assist caregivers in fostering closer bonds with young
126 children and overcoming obstacles to delivering nurturing care.⁽¹⁸⁾

127

128 Given the high social and economic return on investing in developmental care programs,
129 the Development Working Group of the G-20 countries launched an initiative for Early
130 Childhood Development in their meeting in Argentina in September 2018. The initiative
131 supported the notion that early infancy is crucial for laying the groundwork for future
132 health and well-being, which is advantageous for the global society. The initiative calls
133 for a closer examination of governmental investments in child development and increases
134 in the resources that advantage families in vulnerable situations. The Working Group
135 expressed concern that investment in early childhood development remains insufficient
136 despite considerably high returns outcomes. A budget-based method was suggested to
137 ascertain a minimum investment benchmark supporting this call. The cost of delivering
138 the package in various situations is stated as a percentage of gross domestic product
139 (GDP). For upper-middle-income countries, the price of a minimal package to improve
140 human capital has been estimated to be 0.8% of the GDP. This package requires a
141 minimum average annual expenditure per child younger than six years of \$390 in upper-
142 middle-income countries.⁽¹⁹⁾

143

144 **The Situation in the Sultanate of Oman**

145 The Sultanate of Oman has made significant social and economic progress over the last
146 few years. As a cascading effect, Oman's ranking in the human development category is
147 improving tremendously on the Global Human Development Index. That improvement is
148 coupled with political relationships and ties with different nations, culminating in Oman's
149 invitation to attend G-20 in New Delhi 2023 as a guest country.⁽²⁰⁾ The world bank report
150 about Oman projected improvement in financial status driven by oil and gas production,
151 robust energy prices, and wide-ranging structural reforms. The country was classified as
152 high-income, with its GDP growth forecasted to reach 3.2% in 2023-24.⁽²¹⁾ Room for
153 improvement is still available, especially in integrating (CCD) and scaling it up into
154 existing multisectoral programs. According to the Oman Multiple Indicator Cluster

155 Survey (MICS), only 29.2% of children between the ages of 3 and 4 years have access to
156 early childhood education. Despite that, housing characteristics and personal assets
157 revealed that the vast majority of the population lives in furnished houses with electricity
158 and telecommunication facilities. Three or more children's books are in the homes of
159 24.3% of children under five years old. Although 74.7% of children under five years own
160 at least two toys, 44.7 % were left with inadequate care during the week before the
161 interview. Interestingly, 68.3% of children between the ages of 3 and 6 years are
162 developing on track. ⁽²²⁾ Therefore, it could be argued that the situation of awareness
163 about responsive caregiving in the country needs to be optimized. The CCD program is
164 well-positioned to fill that gap in responsive care, given its authentication from WHO and
165 global partners and the availability of scientific evidence, efficacy, and cost-effectiveness
166 of its applicability.

167

168 To scale up the package and ensure its sustainability, the program needs to be integrated,
169 institutionalized and supported by governmental policies. The health system can provide
170 an excellent opportunity to integrate CCD into its services, as it spans from conception
171 through pregnancy, childbirth, and early childhood. ⁽²³⁾

172

173 The health system in Oman is a governmental-based service in which health care is
174 provided for all nationals and governmental employees with almost negligible out of
175 pockets charges. Private enterprises are required to provide health insurance for their
176 employees. The government's primary source of money is the oil market; hence health
177 expenditures are financed by oil-related earnings. As a fast-expanding area, the Omani
178 health system is racing to incorporate new services to meet performance criteria. As a
179 result of the country's rising urbanization and industrialization, the healthcare burden is
180 moving from communicable to non-communicable diseases. Lifestyle-related illnesses
181 dominate the cost of health care. Recent research anticipated that the percentage of
182 Oman's mortality attributable to non-communicable diseases would surpass 70 per
183 cent. ^(24,25)

184

185 Sultan Qaboos University (SQU) is a national leader in patient care, research, and
186 training related to developmental care and disorders and is well-equipped to train future
187 medical leaders in this field. The SQU Hospital appeared as a potential entry point for the
188 health system to scale up the CCD in Oman with the collaboration of the WHO-Oman
189 team. Henceforth, SQU signed a memorandum of understanding with the WHO-Oman
190 office on the 7th of July, 2022. The agreement aims to enhance early childhood
191 development through capacity building, research, and training utilizing evidence-based
192 integrative care regarding developmental care and neurodevelopmental disabilities. The
193 collaboration between both entities was supported by the WHO Regional Office for the
194 Eastern Mediterranean, culminating in the inauguration of the CCD program in Oman by
195 conducting the first National training of healthcare workers from different regions of the
196 country. The trainees were involved in five days program that utilized theoretical and
197 practical training curricula to offer caregivers of young children with age-appropriate
198 direction for fostering cognitive, physical, communicative, and social-emotional
199 development via play and interaction. The training involved 22 candidates from different
200 regions of Oman who were chosen carefully to carry out training of trainers and
201 adaptation into Omani culture shortly. The trainees were first-line healthcare
202 professionals, health administrators, speech & language therapists, social workers, and
203 teachers representing multiple sectors in preparation to upscale the program in different
204 sectors through an integrated model. The project is considered a milestone in Oman's
205 developmental care to promote young children's psychosocial development.

206

207 **Future directions in the local context**

208 The WHO/UNICEF program on Care for Child Development has a unique monitoring
209 and evaluation system. The approach presupposes that, prior to the execution of the
210 intervention, a Situational Analysis will be conducted to recognize the need to enhance
211 child development and family care practices. For instance, a situation analysis will
212 identify children with low performance on developmental assessments, stunted growth, or
213 inadequate school readiness. The Multiple Indicator Cluster Survey (MICS) conducted in
214 Oman can best represent the proposed situation analysis and monitoring framework
215 because it includes proxy indicators of family practices and other conditions in the home

216 that support learning and development, in addition to other indicators of child health,
217 nutrition, protection, and education.⁽²²⁾ In addition, caregivers who are the focus of the
218 Care for Child Development intervention can be surveyed using the MICS items that are
219 most closely associated with the intervention. In general, the key performance indicators
220 serve two functions: monitoring implementation and evaluating their impact.⁽²⁶⁾

221 A future plan for the current program was set to scale up the CCD program at the
222 national level in the Sultanate of Oman, researching its feasibility and applicability and
223 training more trainers. On another scale, it is crucial to cross-culturally adapt CCD to be
224 used on a large scale in Oman, given the characteristics of the CCD program and the
225 dearth of validated, culturally appropriate, accessible, and practicable programs for
226 promoting child development in the Middle Eastern population in general and Oman in
227 particular. This editorial aims to document this vital step as a point of differentiation to
228 monitor progress in United Nations SDGs in pre-and post-eras. Surely, monitoring SDG
229 indicators regarding developmental care will be followed to evaluate the program's
230 progress in Oman and provide lessons for neighbouring countries.

231

232 **Authors' Contribution**

233 The authors confirm their contribution to the paper as follows: Editorial conception and
234 design: Watfa Al-Mamari & Ahmed B. Idris. Initial drafting: Ahmed B. Idris, Khalid
235 Siddeeg, Kamila Al-Alawi, Fannah Al Fannah & Najma Rashid. Reviewing the
236 manuscript: Ahmed B. Idris, Watfa Al-Mamari, Khalid Siddeeg, Kamila Al-Alawi,
237 Fannah Al Fannah & Najma Rashid. All authors reviewed and approved the final version
238 of the manuscript.

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