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## EVIDENCE-BASED POLICY RECOMMENDATIONS FOR BETTER EARLY CHILDHOOD DEVELOPMENT OF TUVALUAN CHILDREN

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# SUMMARY

This brief presents findings from a census of the early development of Tuvalu's children, identifies areas of need, and puts forth recommendations to address gaps in service delivery to provide every child in Tuvalu with the best start in life.

Universal health care and education are essential in supporting a strong and healthy development of Tuvalu's citizens. Access to quality health care services and the opportunity to participate in quality Early Childhood Care and Education (ECCE) provides children with the foundation they need to be ready to learn at school. The Government of Tuvalu has invested heavily in health and education – health care is free for all citizens and education is free for those aged 3-18 years. As such, encouragingly the country exhibits few disparities in access to health and education services, including that for children. For example, boys and girls have equitable access to pre-primary education, and policy mandates that ECCE centres cater to the needs of children with special needs.

In conjunction with countries across the world, Tuvalu has committed to adopt the United Nations 2030 Agenda for Sustainable Development in a bid to end poverty, protect the planet and ensure prosperity for all. SDG 4.2 asks that by 2030, all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education. Further, Tuvalu has also ratified the United Nations Convention on the Rights of the Child, which also recommends the monitoring of how well children are developing within and across the population.

Measuring children's early development and educational outcomes is needed to monitor children's readiness for school and identify areas of need. Such data enables countries to identify gaps, evaluate the effectiveness of their health and ECCE services, and provides the evidence to guide programs and policy development to improve the development of children across the country. In the past, like many other countries, Tuvalu has collected data on rates of infant and child mortality alone. While it is undeniably important to measure whether children are surviving, we must also measure how they are developing holistically. Aspects of development that are important to consider include both cognitive and non-cognitive skills as well as physical development.

The Pacific Early Age Readiness and Learning (PEARL) program funding by the Global Partnership for Education (GPE), implemented by the World Bank, provides technical assistance and analytical work to improve the participating country's evidence-base on school readiness and early grade literacy to inform short and medium-term policy agendas, including baseline survey on school readiness and early grade reading levels and piloting interventions.

Herein, this brief presents data regarding the current status of children's early health and development, as well as their participation in preschool and their learning environments at home<sup>1</sup>. At a country level, this evidence will help to inform intervention strategies and policy planning in early childhood to strengthen the ECCE system with the ultimate goal of ensuring that all children in Tuvalu reach their developmental potential.

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<sup>1</sup> A separate report on early literacy in Tuvalu using early grade reading assessment tool is being prepared.

## DATA COLLECTION

Data were collected across all communities in Tuvalu during November 2015 through to January 2016 from caretakers and teachers on 551 children aged 3 to 5 years old. The 551 children resided in 32 villages across 9 islands in Tuvalu, namely: Nanumea (N=50), Nanumaga (N=36), Niutao (N=20), Nui (N=40), Vaitupu (N=74), Nukufetau (N=44), Funafuti (N=228), Nukulaelae (N=33), and Niulakita (N=4). Information was collected regarding children's health and development status, as well as their experience with preschool and their learning environments at home in order to provide a snapshot of their early years.

As demonstrated in Table 1, there were a relatively equivalent number of children in each age group, as well as an even number of males and females in the sample. A small number of children were reported to have a disability, and while some data were collected regarding children's mother's education, most caretakers did not provide a response to this question.

Table 1: Sample characteristics

| Variable             |                               | Number (%) |
|----------------------|-------------------------------|------------|
| Gender               | Male                          | 272 (49%)  |
|                      | Female                        | 278 (51%)  |
|                      | Missing                       | 1 (<1%)    |
| Age                  | 3 years                       | 149 (27%)  |
|                      | 4 years                       | 170 (31%)  |
|                      | 5 years                       | 174 (32%)  |
|                      | Missing                       | 58 (11%)   |
| Special Needs Status | Yes                           | 23 (4%)    |
|                      | No                            | 6520 (94%) |
|                      | Missing                       | 8 (2%)     |
| Mother's education   | Completed primary school      | 6 (1%)     |
|                      | Some secondary school         | 10 (2%)    |
|                      | Completed secondary school    | 14 (3%)    |
|                      | Any higher/tertiary education | 11 (2%)    |
|                      | Missing                       | 510 (93%)  |

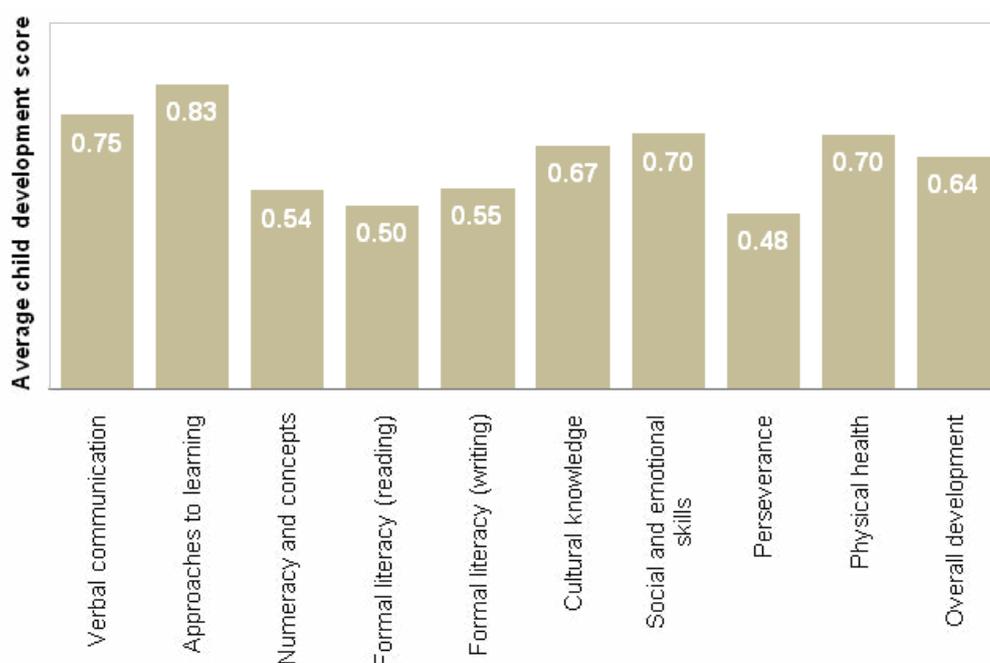
# CHILD DEVELOPMENT

Early childhood development is the most important phase in life which determines later health, wellbeing, learning, behaviour and achievements. It is generally defined as children’s holistic development from conception, and such development occurs when children learn to move, think, feel and interact at increasingly complex levels. There are different areas of development including physical, social and emotional, language and cognitive development, and each child’s development is influenced by a combination of biological and environmental factors.

The tool used to measure child development is based on the Early Human Capability Index (eHCI) which has been used internationally. The eHCI is a holistic measure developed to capture the key aspects of child development in 3-5 year olds that predict future capabilities. The Tuvaluan version of the eHCI (TuEHCI) has been adapted by the local stakeholders<sup>2</sup> through a process of consultation, trial and validation to capture the unique cultural aspects of Tuvalu, and provides a score for each child on nine different developmental domains: verbal communication, approaches to learning, numbers and concepts, cultural and spiritual knowledge, formal literacy (reading), formal literacy (writing), social and emotional skills, perseverance, and physical health. Scores for each of the domains range from 0 to 1; 1 being the best score and 0 being the poorest. The data are not weighted or age standardised, as such, older children should receive higher scores on each of the domains to reflect more advanced development. From these nine domains an overall development score is derived, also ranging from 0 to 1; with 1 being the best score.

Figure 2 below presents children’s average scores across the nine different development domains, as well as their average overall development score. Across the sample, children scored highest on approaches to learning, verbal communication, and social and emotional skills, and lowest on perseverance and the more formal aspects of development; reading, writing, and maths.

Figure 2: Child development across domains



<sup>2</sup> Local stakeholders include professional staff from the Ministry of Education, Youth and Sport, the Ministry of Health, pre-school service providers, churches, pre-school teachers, and parent and community leaders.

# CHILD HEALTH AND NUTRITION

Good health and nutrition are crucial not only for children’s survival, but for healthy growth and development throughout childhood, which in turn impacts later learning, educational achievement and adult productivity. Children’s height and weight was measured to calculate the presence of undernutrition in the form of stunting, wasting and underweight amongst children in Tuvalu. Stunting refers to a child who is too short for their age. It is the failure to grow both physically and cognitively and is the result of chronic or recurrent undernutrition. Stunting is largely irreversible and has long term negative impacts on cognition and physical development, health, and productivity. Wasting refers to a child who is too thin for their height, a reflection of sudden weight loss usually due to starvation or disease. Untreated, wasting progresses severely and increases the risk of child mortality significantly. If a child is classified to be underweight, this could imply that they are stunted or wasted, or both.

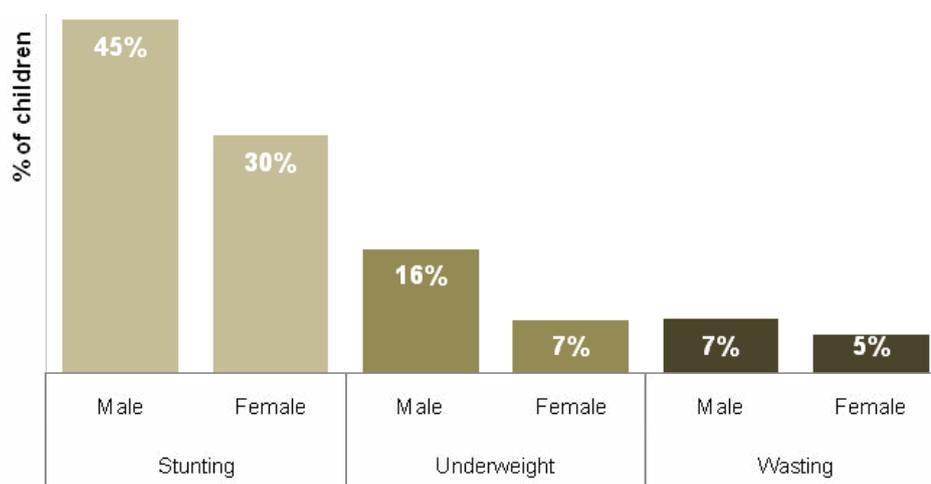
Table 2 demonstrates the prevalence of stunting, wasting and underweight alongside the degree of public health significance of this prevalence according to the World Health Organization (WHO) classification system. Evidently, stunting in particular is of a serious public health concern in Tuvalu, with over a third of children affected by this form of undernutrition. This rate of stunting is comparable to those found in Sub-Sahara Africa, and this is likely to be a result of children predominantly eating food of poor nutritional quality.

**Table 2: Undernutrition prevalence and public health significance**

| Form of Undernutrition | % of children | WHO classification                        |
|------------------------|---------------|---|
| Stunting               | 37.3          | 30-39= ‘high’ public health significance  |
| Wasting                | 5.8           | 5-9 = ‘medium’ public health significance |
| Underweight            | 11.1          | 10-14 = ‘high’ public health significance |

While these prevalence rates do not vary greatly by children’s age, when exploring rates of stunting, wasting, and underweight by gender, it is evident that boys are experiencing far greater rates of undernutrition than girls. To demonstrate – while almost half of all boys were stunted (45 percent) a significantly smaller number of girls were stunted (30 percent) – this is depicted in Figure 1 below.

**Figure 1: Undernutrition by gender**



Data collection also aimed to gather information regarding children's experiences of breastfeeding, however only 50 caretakers (9 percent) provided this information. For these children, almost all had been breastfed (88 percent of children for which information was available). Of these children the majority were breastfed for longer than 6 months (64 percent), some for between 4-6 months (23 percent), and few for between 2-4 months (7 percent) or less than 2 months (7 percent).

Breastfeeding provides babies with the nutrition they need for healthy growth and development, protects against disease and infection and reduces infant mortality. The WHO recommends children be breastfed exclusively until 6 months of age, with continued breastfeeding with complimentary foods up until 2 years. Although we are not able to draw conclusions on breastfeeding practices in Tuvalu from these data, it is encouraging to see that most children for which data were available were breastfed, and often for longer than 6 months.

### **Indicators of early literacy skills**

Familiarity with words, sounds, and language, as well as the formal aspects of literacy that develop later in childhood, reading and writing, are all crucial skills children need to be able to further develop and learn throughout school and life. Caretakers were asked about their child's familiarity with books and 56 percent reported that their child could properly hold a book and turn its pages correctly. When asked about their child's reading abilities, less than a third of caretakers (29 percent) said that their child could read 4 or more words. Caretakers were also asked about their child's writing abilities, with 52 percent reporting that their child is able to write 3 or more letters.

### **Indicators of early maths skills**

Basic numeracy skills such as being able to recognize a number or a shape, having knowledge of smaller objects, heavier objects, and being able to count, are important for children to be ready to learn at school. Most caretakers reported that their child could count to 10 (91 percent), and recognise shapes such as a triangle, circle and square (62 percent). Fewer caretakers reported that their child was familiar with numerical concepts – for example that the number 8 is larger than the number 2 (44 percent), or knowledge of the concept of yesterday, today and tomorrow (34 percent).

### **Indicators of early social and emotional skills**

Social and emotional skills are important for getting along with others and forming healthy relationships. Children develop social skills through their earliest relationships, and these are important as they enable children to adapt positively to their school environment. When asked about a range of their child's social and emotional skills, most caretakers reported that their child gets along well with others (84 percent), is willing to share their toys and belongings with others (79 percent), and show respect for older people (65 percent). Over a third of caretakers also reported that their child frequently displays negative social behaviours such as kicking, biting, or hitting (38 percent).

### **Child development disparities**

When exploring variation in children's development in Tuvalu, we found disparities in development across age and gender – as would be expected; older children are developing better than younger children, and girls score higher than boys. These findings are consistent with the international child development literature and are presented below in Figure 3 for children's overall development. Indeed, these patterns are statistically significant across all TuEHCI domains, except for the difference between boys and girls on the approaches to learning domain, which was insignificant. It should be noted that we would also expect to

see disparities in children's development based on their parent's (particularly their mother's) level of education, however due to the little data available on caretaker's education this was not able to be explored.

Figure 3: Overall child development by children's gender and age

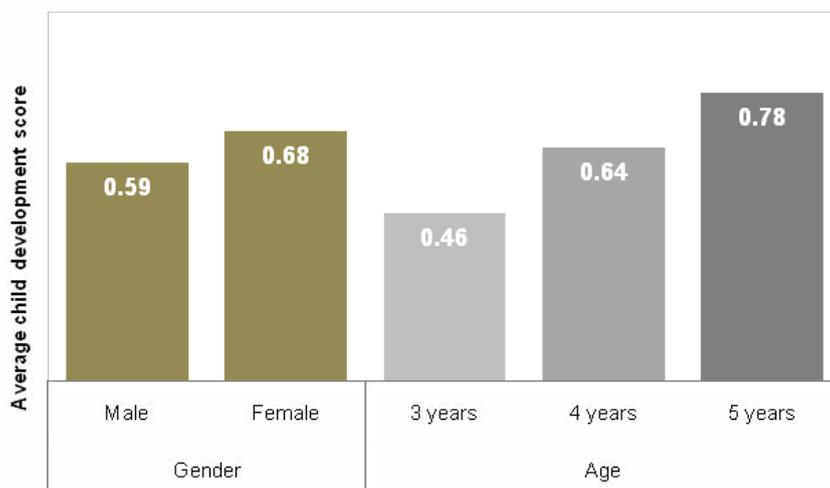


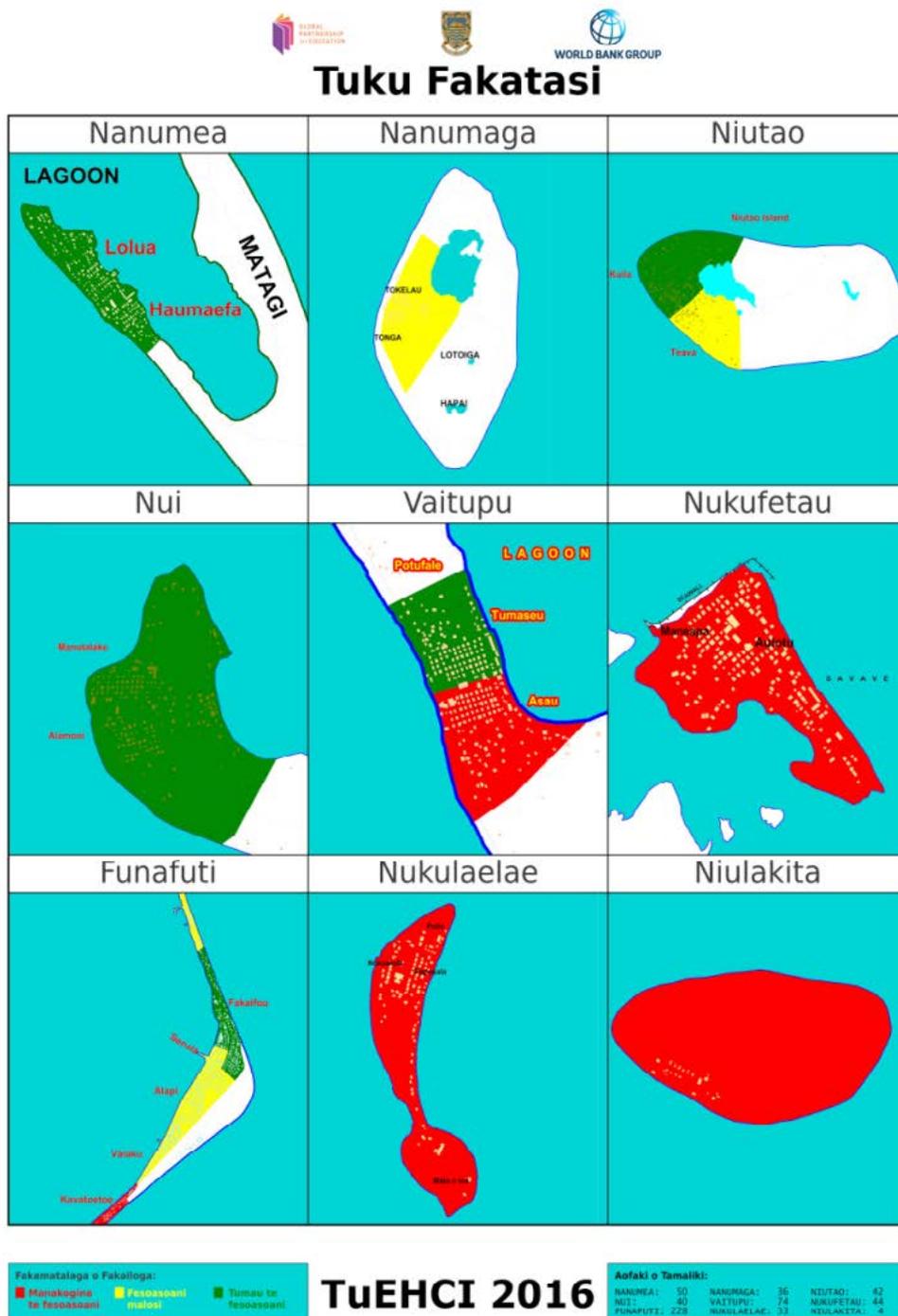
Figure 4 compares children's overall development across the 9 islands – with children on Nui and Nanumea, for example, developing well, relative to children on Nukufetau and Nukulaelae who on average, are not developing as well. Each of the TuEHCI developmental domains has also been mapped individually. When examining different aspects of development across the villages and islands of Tuvalu, it is evident that there are relatively similar outcomes across the islands, with no single area showing consistently poor results across all domains.

**How do you read the maps below?**

Children’s development across each island and village was also compared using colour coded mapping. Villages/islands were coloured to represent how children are developing relative to those on other islands. The bottom third of villages where children on average, have the poorest development, are coloured red; the middle third are coloured yellow and the top third performing villages are coloured green.

Maps were created for every developmental domains and are available for viewing at the Ministry of Education, Youth and Sports.

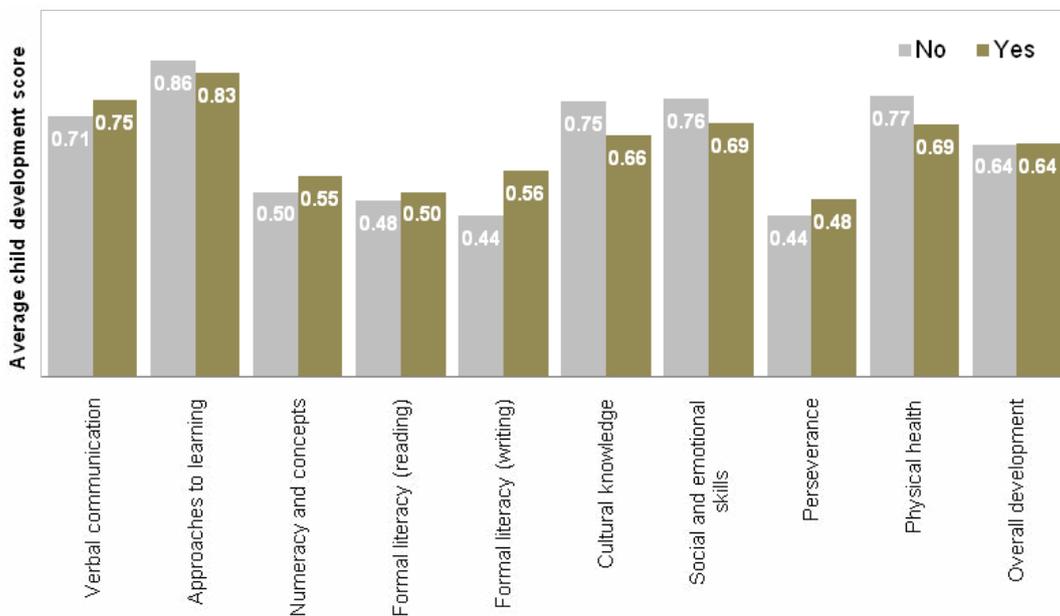
Figure 4: Overall child development by island



# PRESCHOOL PARTICIPATION

Access to quality early education promotes good child development and prepares children for continued learning at school. Consistent with previous findings, results indicate that Tuvalu has reached very high rates of preschool enrolment, with 91 percent of caretakers reporting that their child is attending preschool. Figure 5 below demonstrates that children who attend preschool are developing better on the more formal, taught aspects of development that would be expected to be learnt in preschool, such as maths, reading and writing, while children not attending preschool are developing better in terms of their cultural knowledge and social and emotional skills. This could be the result of less time spent with parents and family members and more time spent in a centre-based ECCE setting. Conversely, it is important to note that only a small number of children did not attend preschool (N=51), and so results should be interpreted with caution due to the small number of children representing the 'no' columns in the figure below.

Figure 5: Child development by preschool attendance

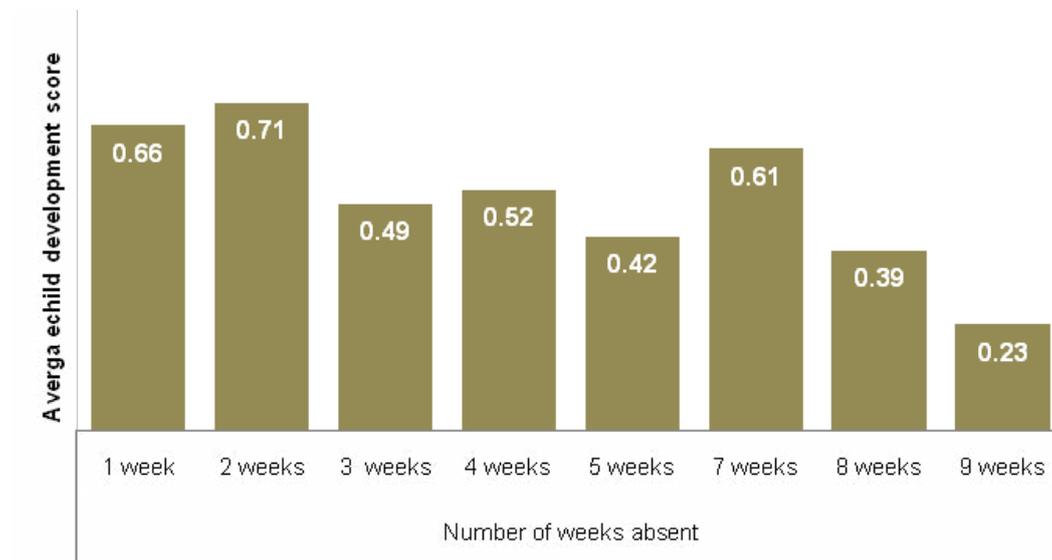


In Tuvalu, preschool attendance is not compulsory and so children begin to attend at different ages and at different rates, and this is likely to impact on the extent to which preschool can influence child development. Most children in the sample began attending preschool when they were 3 years old (74 percent), with the remaining beginning preschool when they were 1, (<1percent), 2 (14percent), 4 (9 percent), or 5 (3 percent) years old. Overall, there was not a clear relationship between the age at which children started preschool and their development scores, and this is likely because the age at which children started preschool does not necessarily denote how much preschool they have attended but rather when they were first enrolled. For example, a child may have enrolled at 2 years of age, but not started regularly attending preschool until the year before primary school. Data collected regarding absenteeism from preschool was more informative in this respect.

Most caretakers reported that their child had been absent from preschool in the past (81percent), and this had a strong statistically significant relationship with reduced overall child development, relative to children who had not been absent. Figure 6 below shows that overall, the more children were absent and therefore were exposed to less preschool,

the poorer their overall development score. This provides a good indication that regular preschool attendance is related to good child development.

Figure 6: Child development by preschool absenteeism



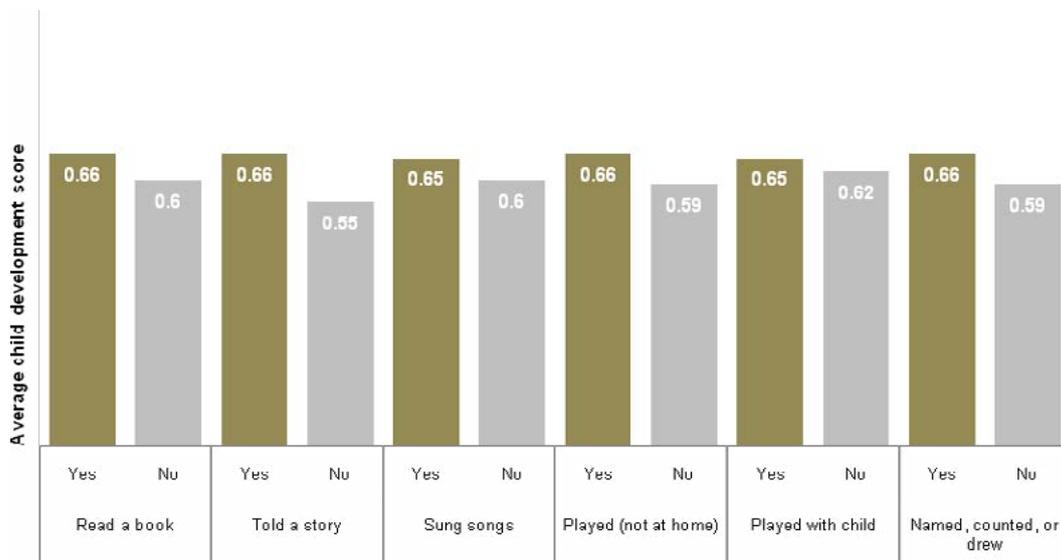
# HOME STIMULATION

Especially important for children’s healthy development is a nurturing home environment that provides love, support, and opportunities to learn and explore. Parents need to play with their children, sing songs and tell stories, to provide them with such opportunities to learn and develop.

Caretakers were asked about 6 different parent-child engagement activities, and if they or somebody else in their family over 15 years of age had engaged in these activities with their child in the past 3 days. Overall, home stimulation levels were low to moderate – 54 percent of children had been read a book in the past 3 days, 62 percent had been told a story, 65 percent had sung songs, 62 percent had played with their child somewhere other than home, 66 percent had played with their child in general, and 56 percent had named, counted and drawn objects with their child.

As demonstrated by Figure 7 below, each of the 6 parent-child engagement activities had a significant positive relationship with children’s overall development. The children of parents who engaged in these activities with them were developing better than children whose parents did not read to them, tell stories, sing, play, draw and so on. Indeed, this pattern is evident across each TuEHCI domain, except for physical health and perseverance.

Figure 7: Association between home learning activities and children’s overall development



## KEY FINDINGS AND RECOMMENDATIONS

Findings from the TuEHCI have provided a snapshot of the current status of child health and development in Tuvalu, and have highlighted which factors might be playing an important role in influencing outcomes for children.

Overall, it is evident that stunting is a significant issue amongst children in Tuvalu. Despite equitable access to health care services, almost 40 percent of children are affected. To promote holistic child development, a basis of good health and nutrition for the country's children is critical, and so it is vital that the high rate of stunting amongst children in Tuvalu is addressed and reduced.

Important to note that the relationship between preschool enrolment and children's development is not as strong as we might expect. While this may be due to high rates of absenteeism, it is important to recognise also that the potential positive impact of ECCE on children's development may be being undermined by the high rates of stunting. By reducing stunting and promoting increased preschool attendance, the relationship between ECCE and child development is likely to strengthen. Further, service quality is another important factor that could be influencing the effects of preschool on children's outcomes. Little is known about the quality of preschool services in Tuvalu, and low quality facilities, teaching, or curricula could all be minimizing the positive effects of preschool on children's development. The monitoring of service quality and the implementation of service quality standards are therefore also likely to enhance the strength of the relationship between ECCE and child development in Tuvalu.

Another key finding is that, while it is clear that preschool enrolment rates amongst children aged 3-5 years of age are very high, attendance rates need to be enhanced and monitored. High rates of absenteeism are likely to be linked to parental attitudes and lack of understanding around the importance of children's early development. Efforts to raise parental awareness are underway in Tuvalu, which aim to increase preschool attendance rates, which will in turn likely lead to improvements in children's development outcomes. Monitoring of attendance rates is recommended so that the effectiveness of preschool programs can be evaluated.

Finally, it is evident that home stimulation is an important mechanism through which children's development may be enhanced. Results show that increasing the amount of stimulating interaction parents have with their children at home will lead to improved child development.

There are several evidence-based interventions that could be implemented to help reduce stunting prevalence amongst children, encourage and increase preschool attendance, and promote child-parent interaction in the home environment. One example that has been successfully applied in other countries in the Pacific is the delivery of community based playgroups. Aimed at children from birth to 5 years of age, community playgroups seek to engage parents and their children in play-based activities on a weekly basis to promote good child development and children's readiness for school. In addition, community playgroups can integrate parenting programs to increase knowledge of the importance of good health, nutrition, and age-appropriate stimulation to promote their child's health and development. Further, nutrition supplementation (such as vitamin A, iodine, worming tablets etc.) can be distributed via the playgroups to improve children's health and reduce stunting. In addition, community playgroups can also incorporate toy libraries, whereby families can borrow toys and books to take home and play with their children, further promoting stimulating home environments.

The 2014 Tuvalu Systems Approach for Better Education Results (SABER) Country Report presented an analysis of the early childhood development programs and policies that affect young children in Tuvalu, to highlight to the government policy gaps and opportunities to

improve the provision of early childhood development services in Tuvalu. Table 3 below summarises the key policy options and recommendations identified.

Table 3: Summary of SABER policy recommendations to improve ECD in Tuvalu

| Policy Goal                                 | Policy Options and Recommendations   |
|---|--|
| <b>Establishing an Enabling Environment</b> | <ul style="list-style-type: none"> <li>• Incorporate ECCE into the MoES regulatory framework</li> <li>• Pass draft policies, including Breastfeeding Policy, Food Safety Regulations bill, and the Family Protection bill</li> <li>• Appoint a government agency to coordinate ECD activities across sectors</li> <li>• Track, report, and coordinate budget allocations for services for young children across the ECCE, health, nutrition, and child and social protection sectors</li> <li>• Consider additional sources of funding to ensure adequate finance for ECD services, including public-private partnerships</li> </ul> |
| <b>Implementing Widely</b>                  | <ul style="list-style-type: none"> <li>• Conduct a mapping exercise of all ECD programs</li> <li>• Create messaging focused on increasing the prevalence of breastfeeding exclusively for the first six months of a newborn's life</li> <li>• Collect data on nutrition, including the percentage of the population that consumes iodized salt and the percentage of children who take vitamin A supplements</li> <li>• Increase equity in access to services by targeting poorer and rural residents, particularly to ensure that their children are registered at birth</li> </ul>   |
| <b>Monitoring and Assuring Quality</b>      | <ul style="list-style-type: none"> <li>• Develop more robust data collection system to better assess the level of coverage and equity of ECD access and outcomes and better target services to specific needs</li> <li>• Develop standards to monitor quality of ECD services, such as the percentage of teachers who hold certificates and are qualified to teach</li> <li>• Regulate ECCE teacher training programs</li> <li>• Create a national ECCE curriculum</li> <li>• Enforce building codes for preprimary schools to ensure children learn in a physically safe environment</li> </ul>                                     |

Encouragingly, community based playgroups could address some of the identified policy gaps, namely all four points under the policy goal of implementing widely, and the first point under the policy goal monitoring and assuring quality.

Finally, it is important to note also that collaboration between health and education sectors in Tuvalu would be required to successfully implement such an intervention. Also, it is recommended that community supports such as local leaders and churches also be involved in program delivery to encourage and maximise participation.

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