

MEDIA RELEASE

For immediate release

Intervening in Critical Health & Early Childhood Development Needs of Disadvantaged Families Through Preventative Healthcare

A study by the National University Hospital's Khoo Teck Puat – National University Children's Medical Institute (KTP-NUCMI) on the Circle of Care programme has found that investing in an integrated preschool-based healthcare model for children from low-income families reduces barriers to health services and improves overall quality of life.

1. It is indisputable that good physical health and social emotional development are the foundations on which cognitive skills are built upon in a child's early years. In spite of a robust healthcare system, a new study by National University Hospital's Khoo Teck Puat – National University Children's Medical Institute has found that young children from low-income families face a drastic drop in referral follow-ups after their health screenings — insights which highlight a need to better connect them to existing support systems. They also tended to have lower dental knowledge, poorer quality of sleep, more screen time and unhealthy eating habits, as compared to their peers.
2. Preschoolers served by Circle of Care, Singapore's first interdisciplinary preschool-based intervention programme, are already benefiting significantly from community health screening and health education efforts, the study also reported. These children had a significant improvement in health-related quality of life¹ over a year and made strides in physical functioning and school functioning, which meant they were better able to participate in activities independently and pay attention in class.
3. Titled "*A community-based holistic preventive healthcare model for children of low-income families in Singapore: A pilot study*", the study found —
 - a. **Quality of Life:** Children from low-income families have high baseline Quality of Life (QOL) scores, which reflects the high quality of healthcare and education that the children receive in Singapore, said Dr Chong Shang Chee, Head & Senior Consultant, Child Development Unit at the Khoo Teck Puat – National University Children's Medical Institute, National University Hospital (NUH). The children surveyed improved in the QOL scores over a year, in areas of physical functioning

¹ The Paediatric Quality of Life, or PedsQL, measures the health related quality of life in children by assessing the core domains of health comprising physical, emotional, psychosocial, social and school functioning. Parents respond to 3 sets of questionnaires based on observations of their children.

(91% vs 94.3%) and school functioning (77% vs 82.8)². There was also an improvement in their adaptive skills, especially personal daily living skills (eg. self-dressing, feeding themselves during meals). This can be attributed to a strong focus by Circle of Care social workers in educating parents about age appropriate developmental milestones, and co-creating practical strategies that parents can apply to the children's daily routines.

- b. **Parents Concerns:** 72.7% of parents of children from low-income families are concerned about their child's health and development. Their top concerns were developmental needs (47.7%), growth and nutrition (11.7%) and dental hygiene (11.7%).
 - c. **Drop in Referral Follow-ups:** During health screening, 76.2% of children were found to have issues requiring follow up. There was a drastic drop in referral follow-up as early as 3 months from the time of screening — Only 63.6% of referrals were actualised for polyclinic referrals, 40.4% for child development referrals, 11.8% for dental and 15% for specialist medical needs. Some reasons include parents who were uncontactable, some who felt it was too much hassle, while others declined referrals to specialist clinics as they felt their child was doing “fine”.
4. Initiated in 2018, this study is intended to be the first public study that sheds light on the health habits of disadvantaged children in Singapore through systematic screening and the specific challenges of their families in accessing health services. It involved close to 450 children, including 150 from Circle of Care who underwent detailed health screening and another 300 children who were peers in their preschools.
 5. Circle of Care primarily serves children from families with household incomes below \$3,000 a month, who mostly live in rental flats. It is by far the only preschool-based intervention care programme locally that combines social work, health specialist services, learning support and parental involvement to weave a network of support around the child and smoothen the transition from preschool to primary school, where the child is supported until Primary 3. Conceived by Lien Foundation and Care Corner Singapore, it has since expanded from its pilot in two preschools in 2013 to serve 21 preschools and 5 primary schools, or about 650 children currently³.

²Physical functioning refers to physical activities like walking, active play and exercise. School functioning refers to factors like missing school because the child is not feeling well or unable to do the same school activities as peers.

³ Estimated children served by Circle of Care as of Dec 2020

6. Since 2017, the Khoo Teck Puat – National University Children’s Medical Institute at NUH stepped in as a key partner, providing health and developmental support services for families served by Circle of Care to improve access to early intervention and bridge barriers towards seeking professional help for their children. Doctors and nurses conduct medical and developmental screening for children at the preschools, such as checking on vision, hearing, vaccinations, nutrition and socio-emotional health and teachers are trained to fill in developmental screening checklists looking out for developmental delays. Challenges in social-emotional well-being, behaviours, development and learning are brought up at the screening sessions. Conducting screening at preschools, rather than hospitals, allows doctors to observe and engage the children in their natural environment. It also takes away the stigma of seeking help.

7. Dr Chong, who also advises the Health Development Screening Programme at Circle of Care, said: “Designing such place-based health models for the hardest-to-reach children helps to enhance early detection of health and developmental issues and informs parents of changing practices. Addressing the social determinants of health beliefs and practices, such as parents not understanding that origins of poor health starts in early years, or believing that children may outgrow their conditions, will have a greater impact on the health outcome of these children than health systems alone — which we know is world class in Singapore.”

COMPARING HEALTH AND DEVELOPMENT FINDINGS OF CHILDREN FROM LOW INCOME FAMILIES TO THEIR PEERS

8. When compared to their peers from a middle to higher income background who attended the same preschool, these were the findings:
 - a. **Sleep:** Children from low-income families experienced poorer quality of sleep than their peers (48% vs 27.2%), despite getting more hours of sleep than them.
 - b. **Activities and Screen Time:** Children from low-income families had more screen time (30% vs 25%) and spent less time on outdoor activities (17% vs 22%) as compared to peers of the same age.
 - c. **Dental Health:** Children from low-income families have low dental knowledge (40.9%) as compared to peers of a similar age (87.5%). These children also had poorer dental health as more parents reported cavities (27% vs 16%) as compared to their peers.
 - d. **Dietary Habits:** Children from low-income families had unhealthier eating habits as compared to their peers of a similar age. For example, they consumed more sweetened drinks (33.3% vs 8.6%), sweet confectionary (41.9% vs 25.7%) and

canned food and instant noodles (12.9% vs 4.3%) a few times a week as compared to their peers. Their parents also tended to report that they were pickier eaters.

The above findings were all found to be statistically significant.

RECOMMENDATIONS TO SUPPORT DISADVANTAGED FAMILIES IN EARLY CHILDHOOD HEALTH AND DEVELOPMENT NEEDS

9. Based on the study's findings, the authors' policy recommendations are as follows:
 - a. **To reduce systemic barriers for parents and motivate them to prioritise health and developmental needs of their children in the early years based on the child's needs**, instead of letting family or employment circumstances dictate if a child receives the necessary interventions.
 - i. For example, parents in contract work who are paid hourly wages might not be eligible for paid childcare leave and entitlements for employees. This means they have to sacrifice income in exchange for time spent on follow-up health appointments.
 - ii. The study explained that this is one of the reasons why parents were unable to follow through with health issues identified during screening, leading to a drastic drop in referral follow-up. At the same time, many parents may not see their child's issues as high priority, due to the lack of capacity to cope with multiple social challenges. Additionally, they still require a polyclinic referral letter or a CHAS-approved GP referral to enjoy subsidised specialist services.
 - iii. The study suggests exploring solutions like direct polyclinic bypass for specific health team-led programmes to promote early detection and screening. Additionally, child-care leave could shift in entitlement of the child's needs than be subjected to what parents as employees are entitled to.
 - b. **To improve multi-agency partnership for health education and screening programmes in the community**, as well as stronger partnerships between professionals like preschool teachers, social workers and healthcare workers. According to the study, 75% of interdisciplinary professionals who participated in Circle of Care like preschool teachers, principals and social workers felt strongly that they were now able to help families access community-based health and medical resources and have improved knowledge of issues faced by children in class. Dr

Chong elaborated that such partnerships can catch children who may fall through the gaps and require shared capacity and shared communication between professionals.

- c. **To expand social work and preschool teacher capacities within preschools.** This allows the professionals closest to the children to receive training and have time for structured collaboration with health workers and health systems. Such an approach brings preventive health and developmental care for children to communities but requires time from teachers and case workers.
10. Ms Jean Koh, Associate Director of Circle of Care, said: “This study reinforces what we believe – that early identification of health and developmental needs play a critical role in helping us reduce the achievement gap with their peers. Many of the parents we work with either lack knowledge in this area or have limited time and resources due to their family circumstances. Working with our healthcare and pre-school partners, we help the families overcome barriers in receiving healthcare support for their children by bringing health screening to the preschools and help parents navigate the healthcare system if their children require more support, and direct them to the necessary resources.”
11. She added: “Over the years, we have seen the value of the interdisciplinary support of doctors, educators, social workers, child development specialists coming together to provide holistic intervention plans for the children and their family. We believe that if we better support the children in the foundational years, it will give them a better trajectory in life.”
12. Dr Chong said: “Being part of Circle of Care is a significant step for us as paediatricians and doctors to actively serve in a community and customise our services so these children and their families have higher, direct and quick access to healthcare. Singaporean children enjoy high quality healthcare generally, but there are some children from disadvantaged backgrounds who stand to benefit from more timely and early intervention for their development needs. Their parents may be busy working and find it a challenge to bring them for repeated visits to hospitals and clinics, or lack access to information on the services available. ”
13. Early intervention in children is critical because good physical health and social emotional development are the foundations on which cognitive skills are built upon. The partnership between NUH and Circle of Care focuses on these areas:
 - a. Fine-tuning targeted health screening in preschools to provide health education through a customised health toolkit.

- b. Provision of fast-track referral services to its primary care partners to remove systems barriers for families who need further health needs sorted.
 - c. Regular participation in interdisciplinary team meetings of children who have higher developmental learning needs, provide mentoring by specialists such as speech therapists and psychologists to preschool teachers and train those who need specialist guidance for in-class development and behavioural issues.
 - d. Paediatricians from NUH also mentor the CoC team on the application of Brazelton Touchpoints, a well-researched, family-centred approach developed by Harvard Medical School that aims to prime every parent for success.
14. The study is funded by the Singapore Population Health Improvement Centre (SPHERiC) seed funding programme under the Ministry of Health's National Medical Research Council grant, which is designed to support pilot exploratory studies in population health research which provides preliminary data to springboard a bigger study on a national level.

UPCOMING WEBINAR FOR INTERESTED PARENTS, EDUCATORS AND EARLY CHILDHOOD PROFESSIONALS

15. Circle of Care will be organising a webinar with Dr Chong Shang Chee and Dr Seo Woon Li, Consultant, Children's Emergency, Department of Paediatrics, KTP-NUCMI, NUH and a clinician instructor at NUS, on the topic of 'Health & Early Childhood Development - Early Detection & Support'. The session will be held on **Thursday, 25 February 2021, 8pm - 9.30pm** and will be conducted over Zoom. Register at: tinyurl.com/cocwebinar2502

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About the Study

This study "*A community-based holistic preventive healthcare model for children of low-income families in Singapore: A pilot study*" was supported by the Singapore Ministry of Health's National Medical Research Council under the seed funding programme by the Singapore Population Health Improvement Center. It aims to assess the efficacy of an integrated pre-school based, Holistic Preventive Healthcare Model for children of low-income families in Singapore through the Circle of Care (CoC) project. Its secondary aims include systematic screening of all low-income children to identify priority areas of health, as well as evaluate barriers to receiving primary or secondary preventive healthcare interventions. Health Development Screening was provided to children aged 18 months to 6-years-old in CoC preschools who meet the low-income enrolment criteria of less than \$3,000 per household, and were offered to participate in the study (intervention group). The parents underwent detailed interviews and these children were followed up at 3 months, 6 months, 12 months. Another group—preschool peer group (PPG) were existing mid to higher income kids in the classrooms. Their parents were asked to participate in a questionnaire on common health issues in



order for us to compare the prevalence of health issues within low-income children in this study with peers from non-low-income families. The study is still on-going.

About Circle of Care

Aimed at uplifting children from disadvantaged backgrounds, Circle of Care is an early intervention service supported by Lien Foundation and Quantedge Foundation, offered by Care Corner Singapore. By 2022, it will serve 30 preschools and 7 primary schools (estimated 1800 children). Helmed by social workers partnering an interdisciplinary team of educators, therapists, health specialists and community partners, it draws on evidence-based approaches to support preschool-to-primary school transition and promote family development.

For more information, visit <http://circleofcare.sg/what-we-do/>

About Lien Foundation

The Lien Foundation is a private philanthropic organization that pioneers solutions to improve lives and tackle the root of problems in eldercare and early childhood development in Singapore. It also works to improve access to clean water, sanitation and palliative care among diverse communities in south and southeast Asia. The Foundation's research publications, multimedia advocacy and design projects aim to seed public discourse in the hope that these can lead to better policies and practices in its various fields of work.

For more information, visit www.lienfoundation.org.

About National University Hospital

The National University Hospital is a tertiary hospital and major referral centre with over 50 medical, surgical and dental specialties, offering a comprehensive suite of specialist care for adults, women and children. It is the only public hospital in Singapore to offer a paediatric kidney and liver transplant programme, in addition to kidney, liver and pancreas transplantation for adults. The hospital was opened on 24 June 1985 as Singapore's first restructured hospital. Each year, the Hospital attends to more than one million patients. As an academic health institution, patient safety and good clinical outcomes are the focus of the Hospital. It plays a key role in the training of doctors, nurses, allied health and other healthcare professionals. Translational research is pivotal in the Hospital's three-pronged focus, and paves the way for new cures and treatment. A member of the National University Health System, it is the principal teaching hospital of the NUS Yong Loo Lin School of Medicine and the NUS Faculty of Dentistry.

For more information, please visit www.nuh.com.sg.

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