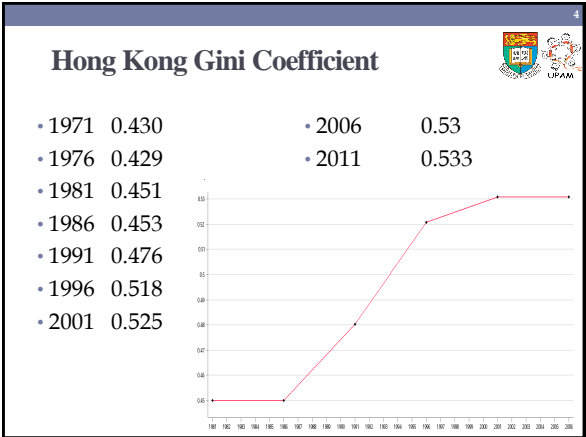
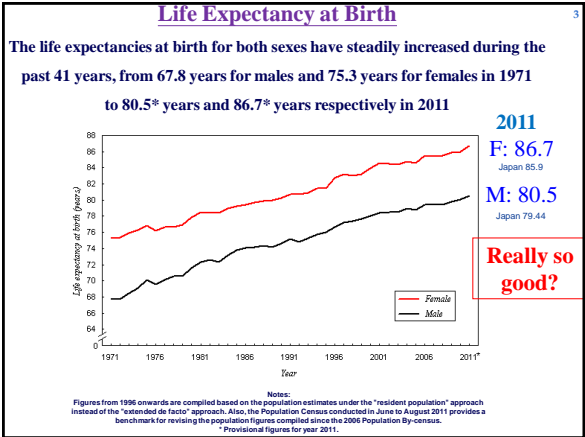


Environment, Child Health & Development

Dr Patrick Ip
Clinical Associate Professor
& Consultant (Paediatrics)
OMEPAGM 5 Jan 2016

City of Children

Hong Kong 1960s



各國兒童貧窮率比較

International Comparison of Child Poverty Rate

國家/地區 Country / Region	兒童貧窮率 Child Poverty Rate	國家/地區 Country / Region	兒童貧窮率 Child Poverty Rate
香港 Hong Kong	28.3%	荷蘭 Netherlands	9.8%
墨西哥 Mexico	27.0%	盧森堡 Luxemburg	9.1%
美國 United States	21.9%	德國 Germany	9.0%
意大利 Italy	16.6%	匈牙利 Hungary	8.8%
英國 United Kingdom	15.4%	比利時 Belgium	7.7%
加拿大 Canada	14.9%	瑞典 Sweden	4.2%
波蘭 Poland	12.7%	挪威 Norway	3.4%
奧地利 Austria	10.2%	芬蘭 Finland	2.8%

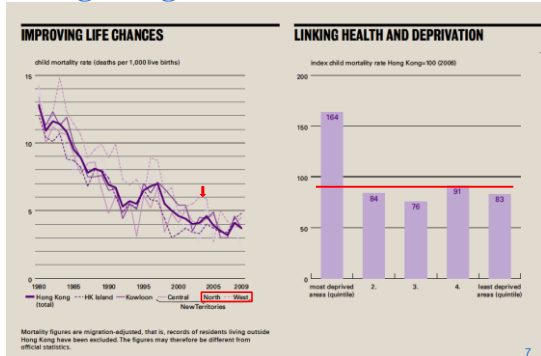
資料: 經濟與合作發展組織 2004 Source: OECD, 2004

• 香港兒童貧窮率明顯較其他國家為高
The child poverty rate in Hong Kong is significantly higher than that of the other countries.

Social Development Index

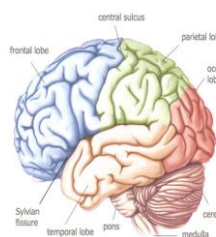
Child Situation 兒童狀況分類指數	2000	2002	2004	2006	2008	2010
居住於低收入住戶的0-14歲兒童佔該類別人口的百分比 (-) Poverty	26.0	27.2	25.8	25.8	25.3	23.9
居住於單親家庭的兒童佔總兒童人數的百分比 (-) Single families	5.5	6.0	7.3	8.1	8.7	9.1
0-4歲兒童的死亡人數 (每十萬名) (-) Under-5 mortality	71.0	61.6	62.4	72.3	77.5	80.6
3-6歲兒童入讀幼稚園或的兒中心學生人數 (每十萬名) (+) Pre-school education	60,381	62,904	67,271	67,722	68,067	68,512
0-17歲人口的虐兒個案數目 (每十萬名) (-) Child maltreatment rate	38.2	38.8	48.9	67.3	77.3	90.7
已接受三歲疫苗注射的兒童佔總兒童人口百分比 (+) Immunization rate	89.5	86.4	79.8	95	95	95
10-15歲兒童的被捕人數 (每十萬名) (-) Arrest	1,164.5	991.3	971.1	907.8	882.9	830.9

Under-5 mortality disparity in Hong Kong = two-fold variation

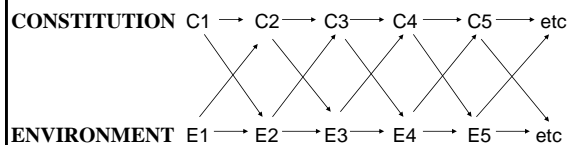


Neuroscience of Brain Development

- Brain is changed by experiences - early years of life impacts on long term outcomes (life course)
- Relationships program social - emotional function development

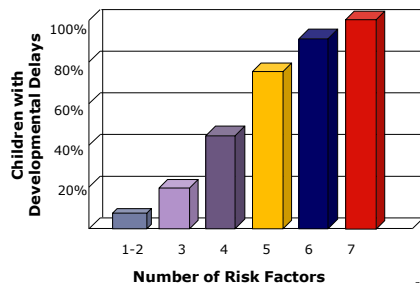


Transactional model - Child Development



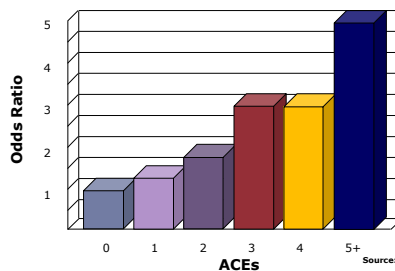
How children (and adults) turn out is the outcome of the transaction between biology and environment

Significant Adversity Impairs Development in first 3 years

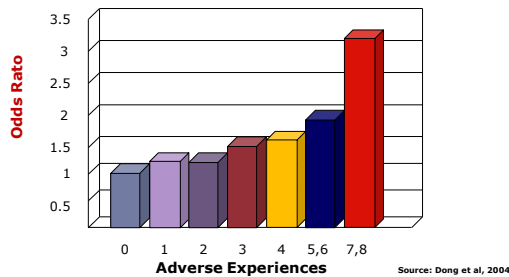


Elevated risk for Depression

Risk Factors for Adult Depression are Embedded in Adverse Childhood Experiences



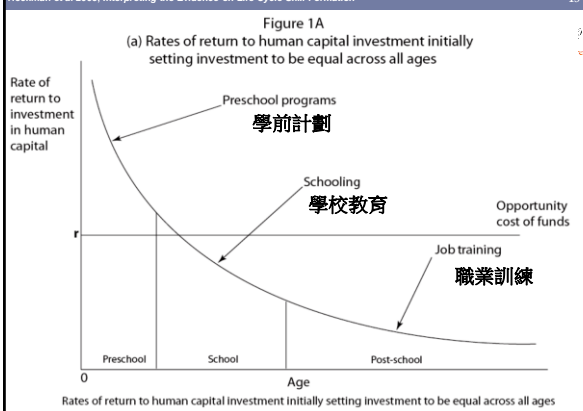
Risk Factors for Adult Heart Disease Are Embedded in Adverse Childhood Experience



Symposium with Prof James Heckman



Heckman et al 2005, *Interpreting the Evidence on Life Cycle Skill Formation*



Science
AAAS

Early Childhood Investments Substantially Boost Adult Health

Frances Campbell et al.
Science 343, 1478 (2014);
DOI: 10.1126/science.1248429

Frances Campbell,¹ Gabriella Conti,² James J. Heckman,^{3,4,5*} Seong Hyeok Moon,³ Rodrigo Pinto,² Elizabeth Pungello,⁴ Yi Pan¹

High-quality early childhood programs have been shown to have substantial benefits in reducing crime, raising earnings, and promoting education. Much less is known about their benefits for adult health. We report on the long-term health effects of one of the oldest and most heavily cited early childhood interventions with long-term follow-up evaluated by the method of randomization: the Carolina Abecedarian Project (ABC). Using recently collected biomedical data, we find that disadvantaged children randomly assigned to treatment have significantly lower prevalence of risk factors for cardiovascular and metabolic diseases in their mid-30s. The evidence is especially strong for males. The mean systolic blood pressure among the control males is 143 millimeters of mercury (mm Hg), whereas it is only 126 mm Hg among the treated. One in four males in the control group is affected by metabolic syndrome, whereas none in the treatment group are affected. To reach these conclusions, we address several statistical challenges. We use exact permutation tests to account for small sample sizes and conduct a parallel bootstrap confidence interval analysis to confirm the permutation analysis. We adjust inference to account for the multiple hypotheses tested and for nonrandom attrition. Our evidence shows the potential of early life interventions for preventing disease and promoting health.

Parental & Societal Expectation

What do we want from our children?

- Excellent academic performance
- Good career prospect
- Good health
- Positive holistic development (physical, mental, emotional)

Early Development Instrument (EDI)

- A population measure of school readiness and holistic development of young children:
 - (a) Physical health and well-being
 - (b) Social competence
 - (c) Emotional maturity
 - (d) Language and cognitive development
 - (e) Communication skills and general knowledge



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Objectives

- to **adapt and validate** the Chinese Early Development Instrument (CEDi), which would serve as a useful tool for studying school readiness among Chinese children population
- to **investigate the socioeconomic gradients** in school readiness of Chinese preschool children in relation to family SES, contextual effect, and family processes

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Ip et al. BMC Pediatrics 2013, 13:146
http://www.biomedcentral.com/1471-2431/13/146

BMC Pediatrics

RESEARCH ARTICLE Open Access

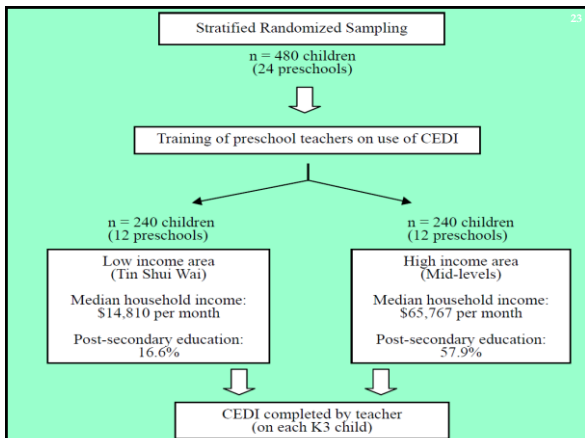
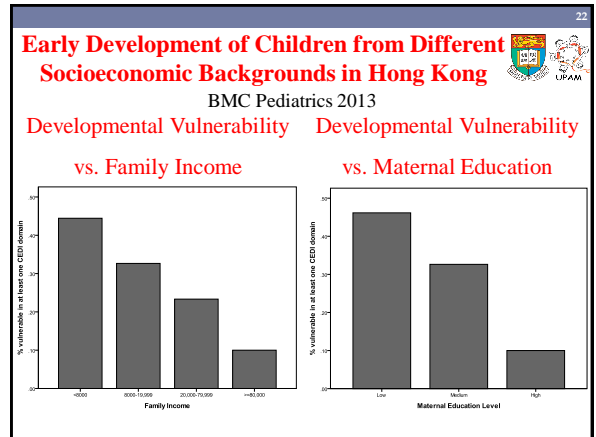
Validation study of the Chinese Early Development Instrument (CEDi)

Patrick Ip^{1*}, Sophia Ling Li¹, Nirmala Rao², Sharon Sui Ngan Ng³, Winnie Wai Sim Lau¹ and Chun Bong Chow¹

Abstract

Background: The Early Development Instrument (EDI) is a comprehensive instrument used to assess school readiness in preschool children. This study was carried out to evaluate the psychometric properties of the Chinese version of the EDI (CEDi) in Hong Kong.

Methods: One hundred and sixty-seven children were purposefully sampled from kindergartens in two districts with very different socioeconomic statuses. The CEDi was assessed for concurrent validity, internal consistency and test-retest reliability. The developmental vulnerability identified using the CEDi scores was further examined in relation to the socioeconomic status of the district and family.



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Training of Teachers

EDi Teacher training session

- In the main study, the validated Chinese version of Early Development Instruments (CEDi) were collected from **567 kindergarten children of 21 kindergartens** located in two districts with dramatically different socioeconomic characteristics in Hong Kong, Yuen Long & HK Island

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Contents lists available at ScienceDirect

Early Childhood Research Quarterly

Socioeconomic gradients in school readiness of Chinese preschool children: The mediating role of family processes and kindergarten quality

Patrick Ip^{a,*}, Nirmala Rao^b, John Bacon-Shone^c, Sophia Ling Li^d, Frederick Ka-wing Ho^e, Chun-bong Chow^f, Fan Jiang^g

^aDepartment of Paediatrics and Adolescent Medicine, The University of Hong Kong (HK), New Clinical Building, Queen Mary Hospital, Pokfulam, Hong Kong
^bFaculty of Education, The University of Hong Kong, Room 715, Ming Yick Complex, The University of Hong Kong, Pokfulam, Hong Kong
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^dHong Kong Children's Medical Center, 1123 Hongfeng Road, Pudong, Shanghai, China

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 Early Development Instrument
 Chinese

ABSTRACT

The current study examined the effects of socioeconomic status (SES) on the school readiness of Chinese preschool children in Hong Kong. A total of 69 teachers from 20 kindergartens in both rich and poor districts in Hong Kong rated the school readiness of 567 preschool children using the Chinese version of the Early Development Instrument. Information about home learning activities and kindergarten characteristics was obtained from parents and preschool teachers, respectively. The results indicated a gradient relationship between SES and total EDI scores, with children from higher-SES families rated as being very ready for school on more domains of the Chinese version of the Early Development Instrument than those from lower-SES families. Home learning activities (reading and recreational activities) and teachers' experience and kindergarten facilities significantly mediated the socioeconomic gradient effects. These findings highlight that efforts are much needed in tackling the developmental disparity and the provision of better parent-child interaction, teacher quality, and kindergarten facilities might be able to help all children attain their own developmental potential.

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Main study - Results

District difference

- Children from YL have a significantly lower total CEDI domain score of emotional maturity ($p = .025$) and language and cognitive development ($p = .01$)

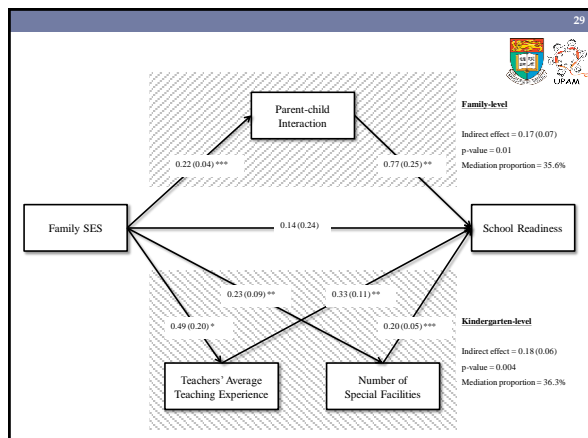
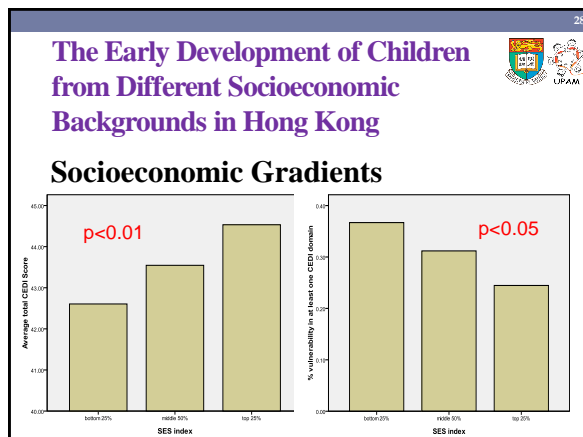
Gender difference

- Overall girls are better than boys

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Main study findings

- Existence of socioeconomic gradient**
 - On average, for one unit increment in SES (one standard deviation) would increase the total CEDI scores by 0.69
- The evidence provided support to the inequalities within kindergarten classes associated with family SES

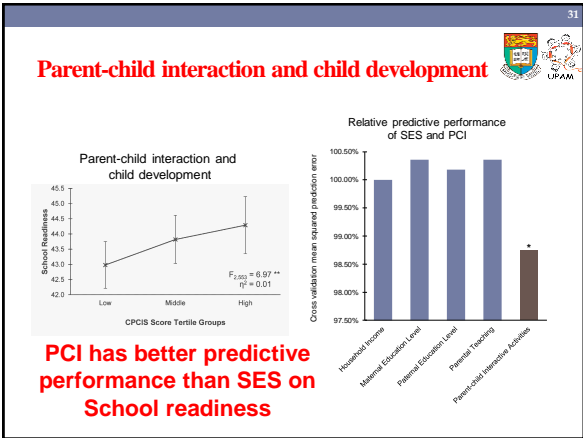


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Mediating effects of Family and Kindergarten

- Family processes** (i.e. frequency of parent-child interactions and management of child digital use at home) in explaining socioeconomic gradients in child developmental outcomes
- Kindergarten level** variables (annual school fees, teacher education background and working experience) as important mediators which accounted for significant proportion of variance in the total CEDI score

Double jeopardy !!



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Sleep & Early Child Development

- Sleep has been identified as the most important period of a day affecting growth and development
- Detrimental effects of insufficient sleep on adolescent health well documented (AAP 2005)

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Knowledge Gap

- Would sleep affects the early development of children?
- The first study of such on the relationship between sleep duration and school readiness of preschool children
- 567 K3 Chinese children (~5 year old) recruited

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ARTICLE IN PRESS

THE JOURNAL OF PEDIATRICS • www.jpeds.com

ORIGINAL ARTICLES

Sleep Duration and School Readiness of Chinese Preschool Children

Winnie Tso, MBBS¹, Nirmala Rao, PhD², Fan Jiang, MD³, Albert Martin Li, MD⁴, So-lun Lee, MPH¹, Frederick Ka-wing Ho, BSc¹, Sophia Ling Li, PhD¹, and Patrick Ip, MPH¹

Objectives To examine the average sleep duration in Chinese preschoolers and to investigate the association between sleep duration and school readiness.

Study design This is a cross-sectional study that included 553 Chinese children (mean age = 5.46 years) from 20 preschools in 2 districts of Hong Kong. Average daily sleep duration in the last week was reported by parents and school readiness as measured by the teacher-rated Chinese Early Development Instrument (CEDI).

Results Most Chinese preschoolers had 9-10 hours of sleep per day. Only 11% of preschoolers had the recommended 11-12 hours of sleep per day. This group was associated with more "very ready" CEDI domains. Sleep deprivation (≤ 7 hours per day) was associated with a lower CEDI total score, lower scores in the emotional/maturity and language/cognitive domain, and prosocial behaviors subdomain but a greater score in the hyperactivity/inattention subdomain. Children with a lower family socioeconomic index, lower maternal education level, infrequent parent-child interactions, and who used electronic devices for more than 3 hours per day had shortened sleep durations.

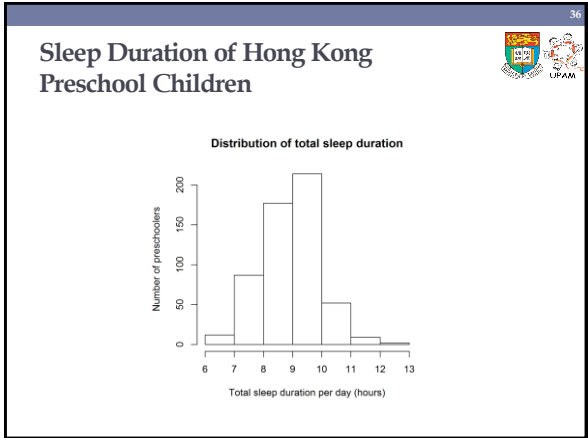
Conclusions Optimal sleep duration was associated with better school readiness in preschool children, whereas sleep deprivation was associated with lower school readiness, more hyperactivity and inattention, and less prosocial behavior. (J Pediatr 2015; ■■■ ■■).

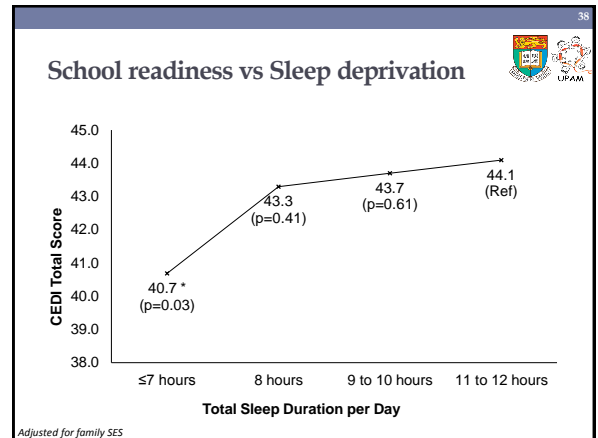
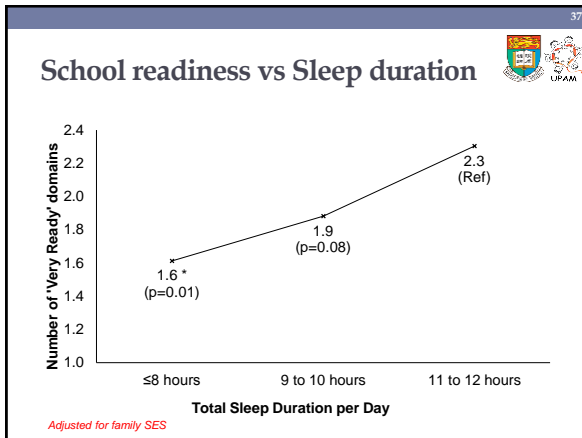
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Sleep duration categorisation

- Age-Specific Recommendations:
 - NHS: 11 hours
 - NIH: 11-12 hours
- Sleep duration was categorized into:

	n	%
<9 hours	100	18.0
9-10 hours	390	70.1
11-12 hours	61	11.0
>12 hours	2	.4
Effective total	553 (out 556 samples)	99.5

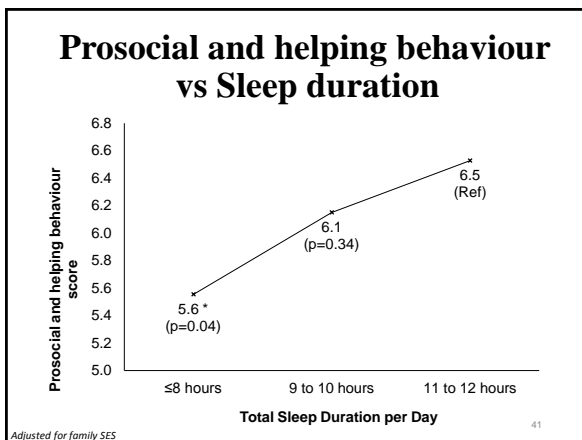
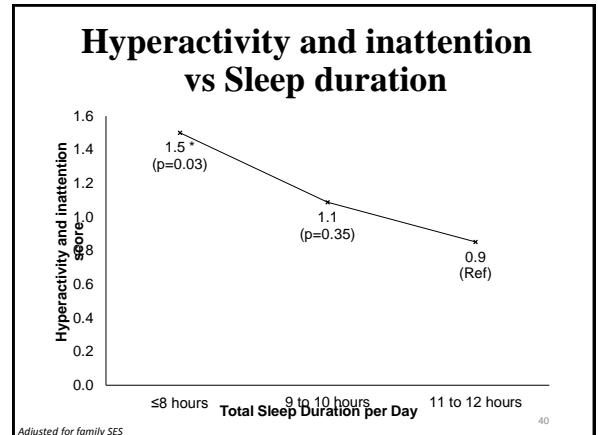




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Sleep deprivation & School readiness

	β	95% CI	P-value
CEDI score in emotional			
11 to <13 hours	0	Reference	
9 to <11 hours	-0.22	-0.57 0.13	0.21
8 to <9 hours	-0.56	-0.78 0.06	0.09
Less than 8 hours	-1.06	-1.83 -0.30	0.01**
CEDI score in language / cognitive			
11 to <13 hours	0	Reference	
9 to <11 hours	-0.19	-0.51 0.14	0.26
8 to <9 hours	-0.14	-0.53 0.25	0.49
Less than 8 hours	-1.09	-1.81 -0.37	0.003**
Total CEDI score			
11 to <13 hours	0	Reference	
9 to <11 hours	-0.39	-1.88 1.11	0.61
8 to <9 hours	-0.79	-2.61 1.02	0.39
Less than 8 hours	-3.40	-6.70 -0.10	0.04*



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- ### Sleep duration of children
- **Positively associated with good family functioning**
(more parent-child activities; higher family SES)
 - **Negatively associated with the use of digital device**


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Sleep and Child Development

- Children are most ready for school when they have **optimal sleep duration**
- **The less hours children sleep, the lower are their school readiness; this is particularly true for children from wealthy families**
- **Sleep deprivation** in children increases risk of **vulnerability** in school readiness


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Digital Device Use & School Readiness

TV in child's bedroom is associated with **lower school readiness** overall (2.34 score lower) and in all EDI domains

- Parental control of watching TV is protective for language domain



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Digital Device Use & School Readiness


PC (desktop/notebook) in child's bedroom is associated with **lower school readiness** in language and emotional domain

- Parental control of PC use is protective for language domain

Smartphone ownership is associated with **lower school readiness in physical health and well-being domain**




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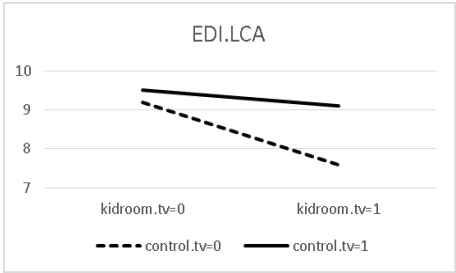
Effect of TV in bedroom influenced by SES

"Very Ready" in Physical health and wellbeing				"Very Ready" in Language/cognitive ability			
SES	Odds ratio (95% CI)	P		SES	Odds ratio (95% CI)	P	
Low	0.14 (0.04-0.49)	0.002	Harmful	Low	0.30 (0.13-0.70)	0.006	Harmful
Middle	0.58 (0.28-1.18)	0.133	No effect	Middle	0.49 (0.26-0.93)	0.028	Harmful
High	1.72 (0.60-4.94)	0.314	No effect	High	3.92 (0.85-18.08)	0.079	No effect

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TV in bedroom +/- Parent's control



The graph shows EDI.LCA scores on the y-axis (7 to 10) for four conditions on the x-axis: kidroom.tv=0 (dashed line), kidroom.tv=1 (solid line), control.tv=0 (dashed line), and control.tv=1 (solid line). The control.tv=1 line is the highest, followed by kidroom.tv=1, then kidroom.tv=0, and finally control.tv=0 is the lowest.

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The Gap Between the Rich and the Poor - From School Readiness to School Success



Longitudinal study (CEDI Cohort)

Using K3 CEDI to predict Grade 3 academic performance

	Overall			Mathematics			Language		
	β (95% CI)	P	ΔR^2	β (95% CI)	P	ΔR^2	β (95% CI)	P	ΔR^2
Step 1 - Baseline models			0.16			0.18			0.11
Age	4.88 (-2.43 to 12.19)			5.59 (-1.67 to 12.84)			4.18 (-4.44 to 12.79)		
Gender (0=Female, 1=Male)	-2.68 (-8.10 to 2.74)			-1.96 (-7.34 to 3.42)			-3.40 (-9.79 to 2.99)		
Family income	1.21 (0.55 to 1.87)	***		1.35 (0.70 to 2.01)	***		1.07 (0.29 to 1.85)	**	
Step 2 - Additional predictors									
Overall school readiness	0.66 (0.26, 1.06)	**	0.08	0.55 (0.15, 0.95)	**	0.06	0.77 (0.30, 1.23)	**	0.08
Physical	-	-	-	1.00 (-1.30, 3.31)	-	-	-	-	-
Social	1.29 (0.15, 3.02)	*	0.04	1.37 (-0.06, 2.80)	-	1.80 (0.11, 3.49)	*	0.04	
Emotional	0.79 (-0.22, 2.68)	-	-	0.26 (-1.68, 2.20)	-	-	1.21 (-1.08, 3.51)	-	-
Language/Cognitive	3.13 (1.78, 4.48)	***	0.15	2.84 (1.48, 4.20)	***	0.12	3.41 (1.80, 5.03)	***	0.13
Communication/General	1.68 (0.58, 2.79)	**	0.07	1.32 (0.20, 2.43)	*	0.04	2.05 (0.75, 3.35)	**	0.08

After adjusting for age, gender, and family income, K3 Language/Cognitive ability appears to have strongest association with P3 academic performance, with additional variance explained at about 15%

Predicting at-risk children at Grade 3

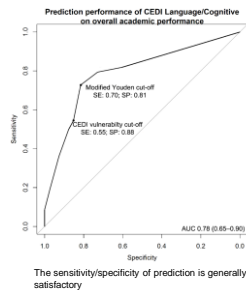
	Overall performance			Mathematics			Language		
	AUC (95% CI)	P		AUC (95% CI)	P		AUC (95% CI)	P	
Overall School Readiness	0.70 (0.56-0.84)	**		0.82 (0.70-0.94)	***		0.75 (0.57-0.94)	**	
Physical	0.63 (0.48-0.77)	-		0.78 (0.64-0.91)	***		0.73 (0.59-0.87)	**	
Social	0.66 (0.52-0.79)	*		0.77 (0.64-0.91)	***		0.76 (0.61-0.91)	***	
Emotional	0.57 (0.43-0.72)	-		0.69 (0.51-0.87)	*		0.65 (0.43-0.86)	-	
Language/Cognitive	0.78 (0.65-0.90)	***		0.84 (0.69-0.98)	***		0.75 (0.54-0.96)	*	
Communication/General	0.70 (0.56-0.84)	**		0.72 (0.54-0.89)	*		0.71 (0.52-0.90)	*	

***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$

Mathematics ability at P3 could be accurately predicted by Overall School Readiness and Language/Cognitive Ability at K3, while Language ability at P3 could be accurately predicted by Social Competence and Language/Cognitive Ability at K3

Predicting at-risk children at Grade 3 - Sensitivity/Specificity

Outcome at grade 3	CEDI vulnerability cut-off		Modified Youden cut-off	
	Sensitivity	Specificity	Sensitivity	Specificity
Overall performance	0.40	0.91	0.50	0.89
Overall school readiness	0.30	0.91	0.30	0.96
Social	0.55	0.88	0.70	0.81
Communication/General	0.45	0.88	0.55	1.00
Mathematics				
Overall school readiness	0.40	0.87	0.70	0.85
Physical	0.30	0.93	0.40	0.90
Social	0.40	0.89	0.30	0.99
Emotional	0.40	0.81	0.40	0.96
Language/Cognitive	0.80	0.86	0.80	0.86
Communication/General	0.40	0.83	0.30	0.98
Language				
Overall school readiness	0.50	0.88	0.60	0.86
Physical	0.30	0.93	0.30	0.93
Social	0.40	0.89	0.40	0.93
Language/Cognitive	0.70	0.85	0.60	0.92
Communication/General	0.40	0.83	0.30	0.98
Receptive language				
Overall school readiness	0.67	0.89	0.67	0.91
Physical	0.22	0.92	0.78	0.74
Social	0.56	0.91	0.67	0.84
Communication/General	0.56	0.85	0.67	0.79
Expressive language				
Overall school readiness	0.57	0.87	0.71	0.85
Physical	0.29	0.92	0.29	0.92
Social	0.43	0.89	0.43	0.92
Language/Cognitive	0.71	0.83	0.71	0.91

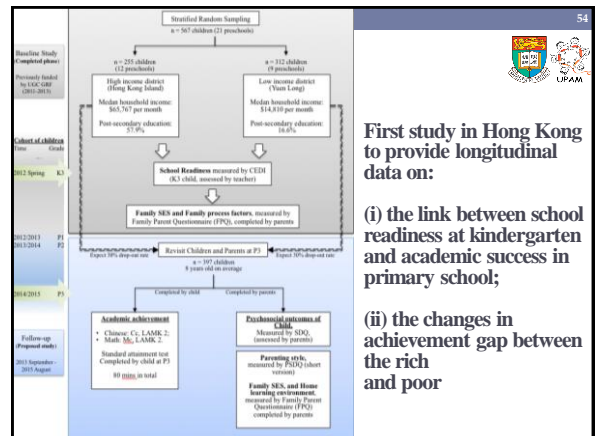


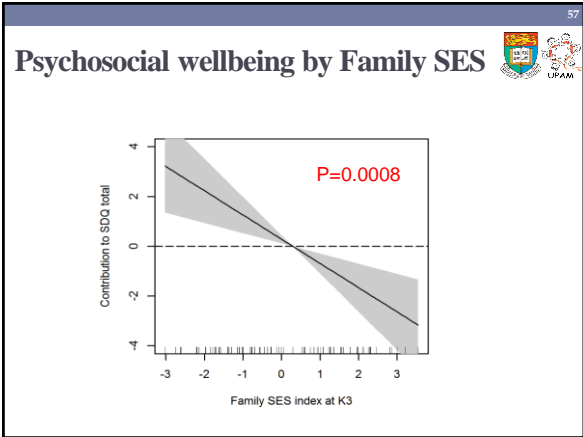
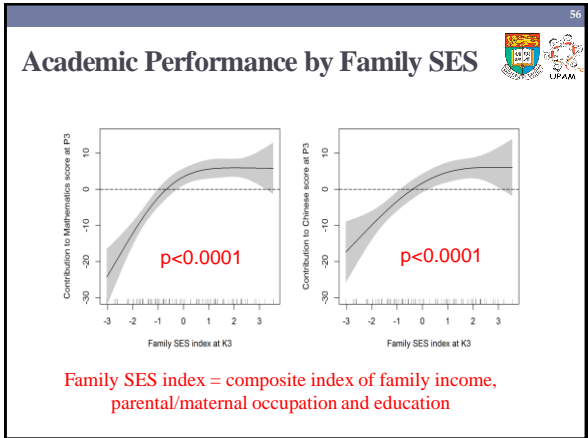
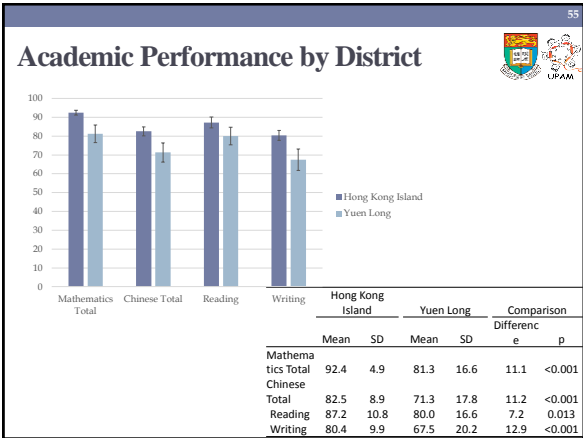
Objectives of new cohort study

- To study the existence and magnitude of the socioeconomic gap in school success (academic achievement and psychosocial outcomes) in primary school (P3)
- To study the extent to which the school readiness of preschoolers (K3) predicts their school success in P3

Objectives

- To examine the extent to which the socioeconomic gap observed in K3 is attenuated or intensified during formal schooling
- To investigate the dynamic of changes in gaps at the two time points in relation to family process related factors (e.g., parenting styles and the home learning environment)

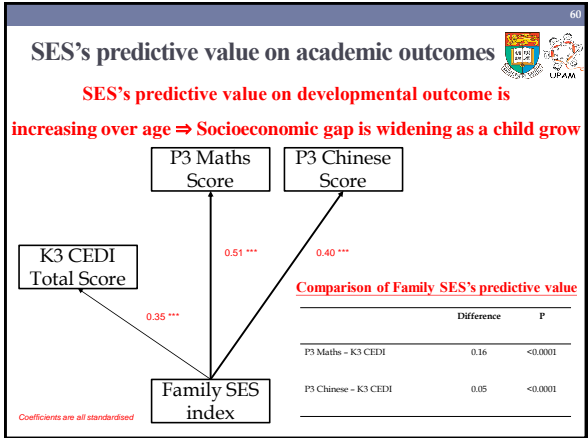
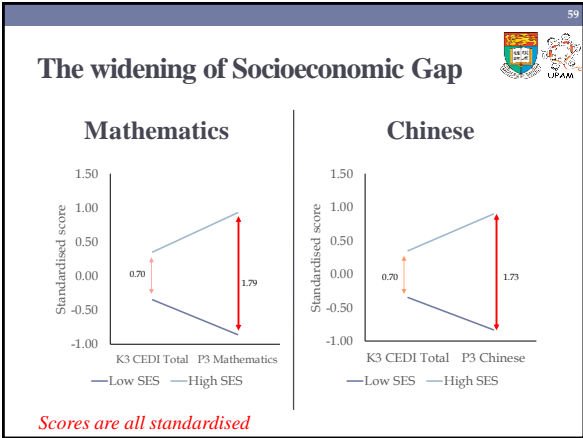




Is the socioeconomic gap widened or narrowed over time?

	SES		Difference	p
	Low	High		
CEDI Total	-0.35	0.35	0.70	0.0002
Physical	-0.32	0.32	0.64	0.0009
Social	-0.31	0.31	0.62	0.001
Emotional	-0.20	0.21	0.41	0.03
Language/cognitive	-0.33	0.33	0.66	0.0006
Communication/general	-0.21	0.21	0.42	0.03
Mathematics	-0.86	0.93	1.79	<0.0001
Chinese	-0.83	0.90	1.73	0.0002
Chinese Reading	-0.69	0.75	1.44	0.001
Chinese Writing	-0.88	0.95	1.83	0.0005

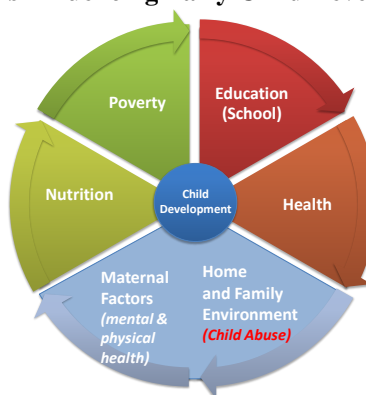
Scores are all standardised



WHO ECD Expert Group Meeting Cambridge 17-19 Sep 2014



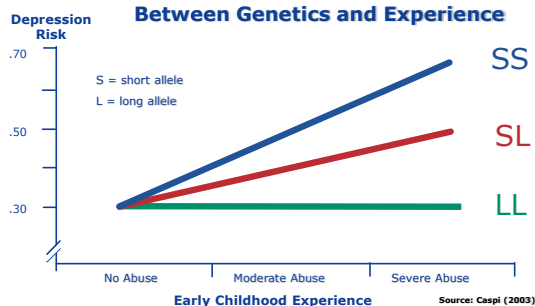
Factors influencing Early Child Development



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虐兒, 遺傳與抑鬱症風險

Resilience is Related to the Interaction Between Genetics and Experience



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Mental Health Consequences of Physical Child Abuse in Chinese: A Meta-Analysis Study

Ip et al; Trauma, Violence and Abuse (2015)



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Mental Health Consequences of Childhood Physical Abuse in Chinese Societies: A Systematic Review and Meta-Analysis



	No. of studies included	Pooled Odds Ratio Estimate	95% CI Lower Band	95% CI Upper Band	I ² (%)
Axis-I Mental Disorders	12	1.85	1.58	2.17	72.19*
Anxious Symptom	2	1.97	1.16	3.32	84.46*
Conduct Disorder	1	1.55	1.01	2.38	-
Depression	6	1.68	1.36	2.08	69.58*
Obsessive-compulsive Disorder	1	1.54	0.60	3.98	-
Posttraumatic Stress Disorder	2	2.36	2.05	2.70	0.00
Axis-II Mental Disorders	12	2.62	2.13	3.22	65.66*
Antisocial Personality Disorder	5	3.12	2.24	4.36	79.70*
Borderline Personality Disorder	5	2.23	1.65	3.01	46.86
Cluster B Personality Disorder	2	2.17	1.33	3.54	0.00
Overall	24	2.16	1.87	2.49	77.67*

*p < 0.05

According to Cohen's calculations, the overall pooled estimate indicates a **small-to-medium effect** of physical abuse on mental health outcomes

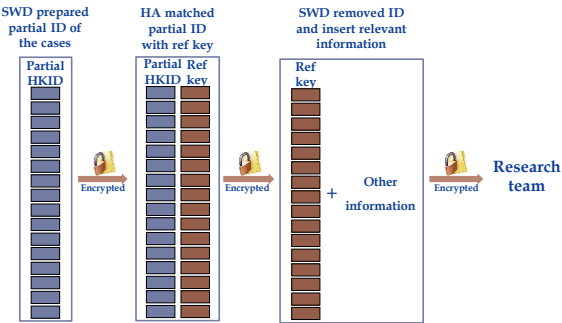
Epidemiology of Child Abuse and Its Geographic Distribution in Hong Kong

An Important Social Indicator of Different Districts and Communities

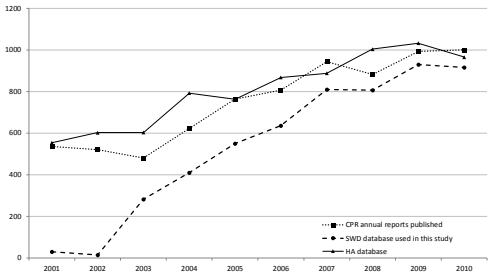
(A Central Policy Unit Commissioned Report)

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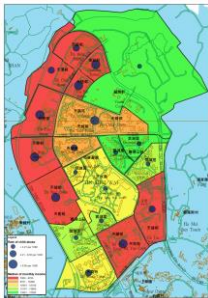
Matching of the Databases



Year trend of child abuse from HA and SWD databases



Relationship between rate of abuse and median monthly income



Yuen Long (TPU 510)



Kwai Tsing (TPU 326)

Relationship between rate of abuse and public rental housing



Yuen Long (TPU 510)



Kwai Tsing (TPU 326)

Association between child abuse and health problems

Any diagnosis (ICD-10)	Prevalence among child abuse victims	Prevalence in H.K. population ¹	Odds ratio (95% CI)	p-value
X60 to X84	1.92%	0.02%	96.60 (60.04, 116.00)	<0.0001
X60 to X84	History of suicidal attempt			
X60 to X84/ S00 to T99	History of Injury	23.9% ²	9.48 (8.13, 11.03)	<0.0001
F00 to F99	Mental health problems	1.2%	9.97 (9.28, 10.71)	<0.0001
Q00 to Q99	Congenital malformations/ Chromosomal abnormalities	4.0%	3.17 (2.82, 3.54)	<0.0001

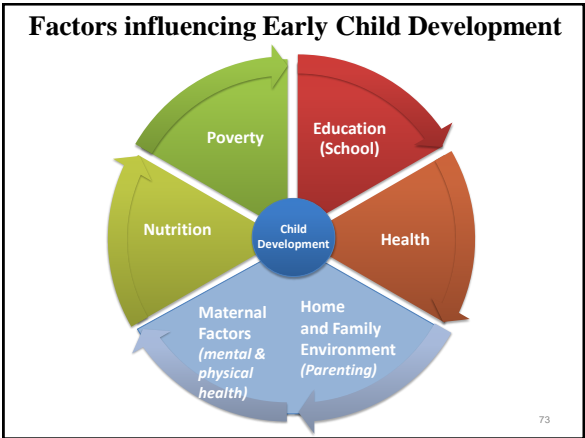
¹ Prevalence among children in H.K. was estimated using HA CDARS

² Injury prevalence of child abuse victims was represented by SWD only group

Association between type of abuse and health problems

Any diagnosis (ICD-10)	Physical abuse (n=580)	Child neglect (n=42)	Sexual abuse (n=47)	Psychological abuse (n=59)	Multiple abuse (n=22)	p-value
X60 to X84	27 (1.12%)	4 (0.95%)	41 (4.84%)	2 (3.39%)	6 (2.71%)	<0.0001
X60 to X84/ S00 to T99	2182 (60.77%)	275 (65.32%)	484 (57.14%)	36 (61.02%)	187 (84.62%)	<0.0001
F00 to F99	246 (10.23%)	32 (7.6%)	125 (14.76%)	9 (15.25%)	30 (13.57%)	0.0003
Q00 to Q99	97 (4.03%)	38 (9.03%)	38 (4.49%)	3 (5.08%)	9 (4.07%)	0.0014

¹ Represented by matched group and SWD only group, as no type of abuse data available in HA only group



Department For International Development (DFID)

Early Childhood Development and Cognitive Development in Low- and Middle- Income Countries

EVIDENCE BRIEF

About this brief
This paper summarises findings from a rigorous literature review entitled *Early Childhood Development and Cognitive Development in*

different services (e.g., parental support, preschool education and health services).

Key findings
➤ A large, high quality evidence base shows ECD interventions focused on (i) parental support; (ii) early stimulation/education;

How to use this brief

Source: UNICEF

Effectiveness of Interventions to Promote Early Childhood Development in Developing Countries

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Abstract: The impact of Early Childhood Development (ECD) interventions on the cognitive development of children from economically disadvantaged backgrounds in developing countries was examined through a meta-analysis of 115 interventions reported in 70 studies conducted in 30 countries. Interventions that focused on parental support, early stimulation and education, nutrition and health, and income supplementation, and that were comprehensive and integrated, had significant, positive effects on children's cognitive development. The largest effects were associated with comprehensive programs, but intervention effectiveness varied as a function of country and program level variables. Intervention effects were larger in countries with lower Human Development Indices than other countries, which may explain the lower effect sizes associated with such programs in developed countries. Further, the qualifications of the change agent were positively associated with child outcomes. The findings suggest that the largest benefits may accrue from scaling up comprehensive programs for disadvantaged children living in developing countries.

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