



Children with a regular FP

Do they have better health behaviours and psychosocial health?

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BACKGROUND

Adults who receive care from family physicians (FPs) are healthier than those who do not, but not much is known about the health behaviours and psychosocial health of children who have FPs.

OBJECTIVE

This study aims to test the hypothesis that children who have a regular FP have better health behaviours and psychosocial health than children who do not have a regular FP.

METHODS

The health behaviours and psychosocial wellbeing of 7057 children in Hong Kong were measured by the Youth Risk Behaviour Survey and the 'anxious/depressed', 'somatic complaints' and 'aggressive behaviours' domains of the Children Behaviour Checklist (CBCL).

RESULTS

Good health and hygiene behaviours were significantly more prevalent in children who had a regular FP. Children who did not have a regular FP had statistically significant higher scores in all three main domains of the CBCL. Children with a regular FP had higher odds ratios for various hygiene and health behaviours after adjusting for socioeconomic status.

DISCUSSION

The findings highlight the potential role of FPs in promoting health, hygiene, and wellbeing in children.

Health risk behaviours, especially those commencing early in life, contribute significantly to disease burden and premature death.¹⁻⁵ Modifying these risk behaviours requires strong self motivation and support from both the family and the family physician (FP).⁶

The supply of primary care physicians and the way in which primary care is organised is also associated with better health,⁷⁻⁹ although most studies have focused on the physical health of adults. With suicide and other social health problems rising among young people in western countries and China,¹⁰⁻¹⁴ it is important to study how children's psychosocial health is affected by having a regular FP.

In the United States, lower smoking rates, less obesity and higher seatbelt use are observed in states with higher ratios of primary care physicians to population.^{8,19,20} Disadvantaged children are more likely to make preventive visits when their care is provided by good primary care physicians.²¹ Populations served by community health centres with an emphasis on primary care are healthier²² and receive more preventive services.²³ Positive associations have been found between adequate primary

care and the provision of preventive services.²⁴

In Hong Kong, over 90% of hospital services are provided by the public sector, while 70% of primary medical care is provided in private – mainly solo, fee for service – practice. Vocational training for FPs is not mandatory, although a program based on the former Royal Australian College of General Practitioners Training Program with reciprocal recognition and conjoint fellowship examination is in place. There are also postgraduate academic programs for FPs to acquire skills in health promotion.

This study aims to test the hypothesis that children who have a regular FP have better health behaviours and psychosocial health than children who do not have a regular FP. The results will be useful not only for the Chinese population but also for other countries with health care systems evolving toward primary care.

Methods

In 2005, the Centre for Health Education and Health Promotion at The Chinese University of Hong Kong (CHEP) conducted a cross sectional survey as part of the Health Promoting School (HPS) Program. Seventy-

eight preschools participated in the program. The teachers distributed 10 010 anonymous questionnaires to parents of children in preschool grades K1 and K2 (ages 3–5 years).

Part of the questionnaire was adapted from the USA Centre for Disease Control and Prevention's Youth Risk Behaviour Survey, which has been used by CHEP since 1999.¹²

Health related knowledge and hygienic practice questions were devised by the CHEP research team and validated by two experts.¹⁵ Three domains of the child behaviour checklist (CBCL)

Table 1. Prevalence of various health and hygiene behaviours of children (n varies slightly due to incomplete responses)

	%	(n)
Hygienic practices		
Wash hands before meals	96.4	(6619)
Wash hands automatically without reminding or supervision by adults after using toilet	52	(4000)
Wash hands with soap/liquid soap	95.7	(6493)
Brush teeth after getting up	93.1	(6285)
Brush teeth before going to bed	86.4	(5868)
Brush teeth after each meal	32.0	(2106)
Annual dental check up	11.2	(715)
Children with family doctor	39.5	(2682)
Dietary habits		
Have breakfast every day	81.3	(5635)
Consume at least one bowl of cooked vegetables or melons on average per day	33.9	(2347)
Consume at least one portion of fresh fruit on average per day	43.5	(3014)
Consume milk or dairy products at least two times on average per day	63.2	(4379)
Consume fizzy or high sugar content drinks less than 4 times per week	88.5	(6134)
Drink at least five glasses of water per day	16.2	(1122)
Keep a balanced diet	55.8	(3851)
Exercise		
Participate in physical activity of moderate to high intensity at least 30 minutes each time for 1 day or more per week	92.8	(6420)
Watch television for less than 2 hours on average per day	43.0	(2919)

Table 2. Health and hygiene behaviours of children with family doctors vs. those without family doctors (n varies slightly due to incomplete responses)

	Children with family doctor	
	Yes % (n)	No % (n)
Hygienic practices		
Wash hands automatically without reminding or supervision by adults after using toilet	52 (2078)	48 (1922)*
Wash hands with soap/liquid soap	96.8 (2567)	94.9 (3789)**
Brush teeth before going to bed	89.5 (2379)	84.4 (3368)**
Annual dental check up	14.8 (374)	8.8 (328)**
Dietary habits		
Have breakfast every day	84.5 (2248)	79.5 (3206)**
Drink at least five glasses of water per day	18.1 (482)	15.0 (607)*
Consume fizzy or high sugar content drinks less than four times per week	89.9 (2391)	87.9 (3545)*
Keep a balanced diet	52.8 (1402)	58.1 (2331)**
Exercise		
Participate in physical activity of moderate to high intensity at least 30 minutes each time for 1 day or more per week	93.8 (2496)	92.2 (3701)*
Watch television for less than 2 hours on average per day	44.8 (1177)	41.7 (1660)*

*p value ≤0.05, **p value <0.001

Table 3. Mean difference in three domains of the Child Behaviour Checklist (CBCL) between children with/without family doctor

	Children with family doctor [mean (standard deviation)]		Mean difference	Confidence interval		p-value
	No	Yes		Lower	Upper	
Anxious/depressed	3.90 (2.61)	3.71 (2.62)	0.20	0.06	0.33	0.006
Somatic complaints	3.72 (3.17)	3.44 (2.92)	0.28	0.12	0.44	0.001
Aggressive behaviour	11.26 (6.74)	11.04 (6.76)	0.22	-0.16	0.59	0.255

– ‘anxious/depressed’, ‘somatic complaints’ and ‘aggressive behaviours’ – were used to measure psychosocial wellbeing.¹⁶ There is a validated Chinese version of the checklist for school aged children,¹⁷ which shares the same format and is constructed similarly to the preschool CBCL. The checklist was pilot tested on preschool parents for face validity.

The prevalence of health and hygiene behaviours were tabulated and the difference of prevalence rates analysed by Chi square statistics. Univariate analysis was performed to calculate the odds ratios for various behaviours where the child had a regular FP. Odds ratios were then calculated after adjusting for family income. Other variables including education level of parents, recent immigration, type of accommodation, employment status of parents, and any subsidy or social security were also adjusted in the logistic regression. These variables are highly associated with social disadvantage. The scores were calculated for the three domains of CBCL and the mean differences were analysed by t-test. As local norms are currently not available, raw scores instead of t-scores based upon the original USA norms are presented.

Results

The parents of 7057 kindergarten students returned the questionnaires, with 6765 completed questionnaires being suitable for analysis, giving an overall response rate of nearly 70%. Some parents answered on behalf of more than one child in the age range.

Table 1 shows the prevalence of children's health and hygiene behaviours. Children with a FP (39.5%) had statistically significant better hygienic practices, healthier eating habits, exercised more frequently and spent less time watching television than those without a FP (Table 2).

Children without a regular FP had statistically significant higher scores in the ‘anxious/depressed’ and ‘somatic complaints’ domains of the CBCL,

and for ‘aggressive behaviours’ but without statistical significance (Table 3).

After stratification of family income and educational level of parents, children without a regular FP still had higher scores, but without statistical significance. Further analysis found that a higher proportion of children of parents with tertiary education or above (36.7 vs. 17.5%, $p < 0.001$) and family income of HK\$10 000 or greater (49.7 vs. 20.7%, $p < 0.001$) had regular FPs. Therefore, the effect of FPs was not found to be significant when the population was stratified by family income and parent educational level.

Discussion

This study shows statistically significant higher prevalence rates of good health and hygiene behaviours among children with a FP, and higher odds ratios for good hygiene and health behaviours after adjusting for socioeconomic status. Children without a regular FP had higher scores in all three main domains of CBCL.

There are limitations to the study. The sample was not random, but the study population was large and included students from throughout the territory, giving a lower error rate (a sample of 4000 gives an error $\pm 3\%$). The key sociodemographic characteristics of the study population compares well with the Hong Kong population.

The questionnaire does not contain information about the quality of the FPs. There are still some potential confounding factors to be controlled such as cultural beliefs and lifestyles of parents. The questionnaire is long and the number of variables should be streamlined.

Family physicians perform diverse tasks, so we could only expect small effect sizes of the three domains of CBCL. A causal link between children having FPs and having better health behaviours and psychosocial health cannot be definitely established in a cross sectional study.

A longitudinal study could be conducted to establish this link.

This current study contributes further evidence on the relationship between primary care and health promotion. The association remains statistically significant after taking socioeconomic factors into account. The role of the FP is even more important for children from lower socioeconomic groups for whom FPs are the main or sole contact for health care. The only exception we found was with respect to whether or not children had a balanced diet. Family physicians might not discuss a balanced diet in detail, and parents without a FP might take a more active role to explore from other sources.

Children without a regular FP have higher scores in the ‘depressed/anxious’ and ‘somatic complaints’ domains of CBCL. It has been found that 25% of adolescent consultations with FPs are related to emotional problems.²⁵ A patient centred approach could help identify presenting cues and reveal any underlying emotional problems.

In Hong Kong, FPs represent a very heterogeneous group of doctors and not all practise what we believe to be the ideal role of the FP. Larger effect sizes might be detected if we were to identify and study the subgroup of Hong Kong FPs practising the best quality family medicine.

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