



# THE IMPACT OF PATIENT CENTRED CARE ON HEALTH OUTCOMES IN ADOLESCENTS LIVING WITH DIABETES



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## Project Background

In addition to higher levels of medical cost, the long-term problems and complications of diabetes can cause detrimental problems in the lives of patients including their family members. If blood glucose level is not kept at an appropriate level, vascular fluctuations will happen within 3 years following diagnosis; if adequate control is in place, it can delay these variations to about 20 years and perhaps longer. There are no empirical studies known to address the issue of patient centred care and its relationship to the adolescent's ability to manage their condition in Singapore. This situation presents an opportunity to show how fostering patient centred care affects an adolescent in managing their own medical condition.

## Objectives

This study aims to explore this aspect in adolescent with diabetes by evaluating how patient centred care utilizing the HCAPHS survey in the outpatient clinic can influence their Quality of Life (QOL). The objective is to utilize the findings for intervention of psychosocial and physical health in diabetic adolescents.

## Specific Aims:

1. Patients' perceptions (beliefs of their care experience with their care providers) will likely affect the patients' behaviours in managing diabetes and as a result their physical and psychosocial health

## Methodology

Patients (Sample size of 85) who met the inclusion and exclusion criteria were asked to fill up the KKH Outpatient Experience Survey (Fig 1), which was adapted from both the HCAHPS® Hospital Survey and the Picker Commonwealth Survey of Hospital. QOL was assessed using the Paediatric QOL Inventory questionnaire (Fig 2) which consist of 4 domains (Physical Health, Social Needs, Emotional Needs, Coping in School).

Fig. 1

FEEDBACK FORM  
OUTPATIENT CHILDREN

Please provide your best answers to the following questions about your child's visit at the Outpatient Clinic.

Please shade the appropriate circles.

DATE OF VISIT  
/ /

IDENTITY

PAYMENT CLASS  
☐ Private ☐ Subsidised

MEDICAL SPECIALTY  
☐ Medicine ☐ Surgery  
☐ Cardiac Centre  
☐ Children's Day Therapy  
☐ Cleft & Craniofacial Centre  
☐ Clinic G  
☐ Clinic H  
☐ Clinic K  
☐ Clinic M  
☐ Clinic P  
☐ Clinic T  
☐ Day Surgery  
☐ Dental Clinic  
☐ Department of Child Development  
☐ Department of Diagnostic & Interventional Imaging  
☐ ENT Centre  
☐ Eye Centre

YOUR CHILD'S CARE FROM NURSES / TREATMENT ROOM STAFF  
1. How often did the nurse treat you with courtesy and respect?  
☐ Always ☐ Sometimes ☐ Usually ☐ Never  
2. How often did the nurse listen carefully to you?  
☐ Always ☐ Sometimes ☐ Usually ☐ Never  
3. How often did the nurse explain things in a way you could understand?  
☐ Always ☐ Sometimes ☐ Usually ☐ Never  
4. How often did the nurse explain things in a way your child could understand?  
☐ Always ☐ Sometimes ☐ Usually ☐ Never  
5. How often did you have confidence and trust in the nurse treating your child?  
☐ Always ☐ Sometimes ☐ Usually ☐ Never  
6. How often was the nurse fully aware of your child's important medical information?  
☐ Always ☐ Sometimes ☐ Usually ☐ Never

Fig. 2

In the **PAST MONTH**, how much of a **problem** has this been for you ...

ABOUT MY HEALTH AND ACTIVITIES (problems with...)	Never	Almost Never	Some-times	Often	Alm Always
1. It is hard for me to walk more than a couple of streets (about 100 metres)	0	1	2	3	4
2. It is hard for me to run	0	1	2	3	4
3. It is hard for me to do sports activities or exercise	0	1	2	3	4
4. It is hard for me to lift heavy things	0	1	2	3	4
5. It is hard for me to have a bath or shower by myself	0	1	2	3	4
6. It is hard for me to do chores around the house	0	1	2	3	4
7. I have aches and pains	0	1	2	3	4
8. I feel tired	0	1	2	3	4

ABOUT MY FEELINGS (problems with...)	Never	Almost Never	Some-times	Often	Alm Always
1. I feel afraid or scared	0	1	2	3	4
2. I feel sad	0	1	2	3	4
3. I feel angry	0	1	2	3	4
4. I have trouble sleeping	0	1	2	3	4
5. I worry about what will happen to me	0	1	2	3	4

HOW I GET ON WITH OTHERS (problems with...)	Never	Almost Never	Some-times	Often	Alm Always
1. I have trouble getting on with other teenagers	0	1	2	3	4
2. Other teenagers do not want to be my friend	0	1	2	3	4
3. Other teenagers tease me	0	1	2	3	4
4. I cannot do things that other teenagers my age can do	0	1	2	3	4
5. It is hard to keep up with other teenagers my age	0	1	2	3	4

ABOUT SCHOOL / COLLEGE (problems with...)	Never	Almost Never	Some-times	Often	Alm Always
1. It is hard to pay attention in class	0	1	2	3	4
2. I forget things	0	1	2	3	4
3. I have trouble keeping up with my school / college work	0	1	2	3	4
4. I miss school / college because of not feeling well	0	1	2	3	4
5. I miss school / college to go to the doctor or hospital	0	1	2	3	4

## Results

A total of 85 questionnaires (50% of cohort) were distributed among adolescent (age range 13 – 20 years old) patients following with diabetes clinics at KKH from 21 November 2018 to 28 February 2019<sup>c</sup>.

c. SingHealth Centralized Institutional Review Board (CIRB) approval no. 2018/2869

Not to mention the growing evidence of literature available, the study indeed suggests that improving the patient experience is linked to better patient health outcomes. Using the sample of adolescents with diabetes, the results of this study shows that there is statistically significant correlation between patient centred care and quality of life in terms of Psychosocial Health and Physical Health Outcomes.

HCAPHS Question	Correlation, r	P <sup>^</sup>
How often did the doctor's assistant explain things in a way you could understand?	0.348	0.001 <sup>^</sup>
Did you get information about what symptoms or health problems to look out for after you left the hospital?	0.347	0.001 <sup>^</sup>
How often did nurses explain things in a way you could understand?	0.318	0.003 <sup>^</sup>
If you had worries or concerns during your treatment, how often did doctor/nurse discuss them with you?	0.303	0.006 <sup>^</sup>
How often did the counter staff explain things in a way you could understand?	0.291	0.007 <sup>^</sup>
How often did you have confidence and trust in the doctors treating you?	0.239	0.028 <sup>^</sup>
How often did the doctor's assistant treat you with courtesy and respect?	0.224	0.044 <sup>^</sup>

HCAPHS Question	Correlation, r	P <sup>^</sup>
How often did you have confidence and trust in the doctors treating you?	0.232	0.034 <sup>^</sup>
Did you get information about what symptoms or health problems to look out for after you left the hospital?	0.216	0.048 <sup>^</sup>

N:85,

<sup>^</sup> Statistically significant at P < 0.05.

## Clinical Implications

By utilizing the results, the team were able to identify specific aspects of care interaction and focus their interventions to facilitate better psychosocial health in diabetic adolescents. In particular, (1) improved patient-provider communication, (2) high quality discharge care and (3) emotional support from providers fostered by patient centred care are likely to contribute to increased patient reported psychosocial health outcomes.

In the diabetes clinic in KKH, nurses have the highest proportion of direct interaction with patients working with teens on chronic disease prevention and management and play a fundamental part in every aspect of promoting health. The nurses are therefore in a unique position, through patient education and symptom management to improve patient experience and their quality of life. Our analysis (using Spearman's correlation) of the HCAPHS survey questions relative to all the other items also suggests that as (1) patients' confidence in nurses increase and as (2) doctors' assistant explain things clearly, patients' overall responses to other indicators increases.

## Conclusion

Taken together, it can be reasonably argued that it's vital to better understand how patient centred care is associated with patients' clinical outcomes because their perceptions (beliefs of their care experience with their care providers) likely affect the patients' behaviours in managing diabetes and as a result their physical and psychosocial health.

An analysis of correlation was used to determine the direction and the degree of association between patient centred care and quality of life. Spearman's non-parametric rank correlation coefficient<sup>a</sup> and the test probability (p)<sup>b</sup> was applied.

a. Correlation coefficient measures the strength and direction of association between two variables. As a guide, values between 0.3 and 0.6 indicate a moderate positive correlation strength.

b. p-Value helps you determine the significance of your results. Most authors refer to statistically highly significant as P<0.001 (less than one in a thousand chance of being wrong).