Quality of Care of Children With Chronic Diseases in Alexandria, Egypt: The Models of Asthma, Type I Diabetes, Epilepsy, and Rheumatic Heart Disease

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ABSTRACT. *Objectives.* To evaluate the quality of care delivered to children suffering from index chronic diseases using specific indicators of health care delivery and to study the predictors of suboptimal quality of care (SQC) and its outcome on children.

Design. Over a 9-month period, guidelines for optimal care were formulated. A specific questionnaire for every studied chronic disease was prepared in collaboration with the clinicians in charge of the diseased children (66% pediatricians and pediatric specialists and 34% adult specialists). The clinicians were asked to write the details of daily practice, ie, how these children were managed on a routine basis as well as in an emergency situation. A cross-sectional study was conducted over a 4-month period and included 953 children suffering from bronchial asthma (BA), childhood epilepsy (CE), type I diabetes mellitus (IDDM), and rheumatic heart disease (RHD). A systematic random sample of children was selected from children visiting the ambulatory settings of all children's hospitals. Every fourth child was selected on 2 randomly chosen days each week, while all diseased children admitted in the hospital settings of the children's hospitals during the study were included.

A general form describing the impact of the diseases on the child was prepared. A network of clinicians was created in all children's hospitals; seminars were held during which the content validity of the questionnaire was tested. Items were evaluated for their internal consistency using the Cronbach α.

According to the degree of adherence to the recent therapeutic guidelines concerning selected indicators of the quality of care specific to every disease, children were categorized as receiving optimal quality of care or SQC. These indicators were: the use of inhaled bronchodilators in acute asthmatic attacks in mild asthma and the use of the prophylactic drugs (inhaled sodium cromoglycate or inhaled beclomethasone) in moderate to severe chronic BA in between acute asthmatic attacks; compliance with antiepileptic drugs in epileptic children; regular performance of self-monitoring of blood glucose and/or urine testing in diabetic children; and compliance with prophylactic antibiotics in children suffering from RHD.

The records of the outpatient clinics for ambulatory and hospitalized cases were reviewed to assess the degree of compliance with the prescribed management before the index visit.

Sociodemographic characteristics and health care system-related predictors of SQC were analyzed via stepwise logistic regression analysis.

The impact of illness on the child was assessed by 7 items which were: dependence on parents in domestic activities, level of activity compared with peers, mood compared with peers, level of socializing, degree of discomfort attributable to illness, level of physical disadvantage, and urinary incontinence. Factor analysis with Varimax rotation was performed on items related to the impact of illness.

Parental satisfaction with care was rated as excellent, very good, fair, or poor. Information on school outcome was obtained by asking the caretakers whether the child was able to attend school regularly despite his sickness. Scholastic achievement was also rated as excellent, very good, good, and acceptable. Parents were asked whether the child had ever repeated a grade because of his sickness.

Setting. Ambulatory and hospital settings of all children's hospitals in Alexandria, Egypt.

Results. Only 52% of mild asthmatics were given inhaled bronchodilators during acute attacks and 6.84% of moderate to severe asthmatics were taking prophylactic drugs (inhaled sodium cromoglycate and/or inhaled beclomethasone) between acute attacks. Similarly, only 53 of 134 (39.6%) of diabetic children were regularly performing self-monitoring of blood glucose and/or urine testing. In contrast, in epileptic children, 121 of 173 (69.9%) were judged as being compliant by their managing clinicians and more than two thirds 82/123 (66.7%) of children with RHD were compliant with the secondary prophylactic antibiotic.

Predictors of SQC were younger age of the child (in BA and CE), lower maternal education (in BA and IDDM), charged medication (in BA, IDDM, and RHD), suburban residence (in moderate to severe BA), lower paternal education (in CE), and management in health facilities other than university hospital (in IDDM).

Regarding the outcome of chronic diseases on children, factor analysis revealed 2 factors (physical and psychosocial impact) that explained 41.5% of variance with moderate adequacy (Kaiser-Meyer-Olkin test of sampling adequacy = .67). Dependence on parents in domestic activities, urinary incontinence, physical disadvantage,