A Clinical Study of Competency to Consent to Treatment in Pediatrics

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A 19-item competency questionnaire for pediatric patients (CQ-Peds) was used to evaluate competency to consent to treatment in pediatric outpatients and inpatients at two university hospitals. Sixty-nine consecutive English-speaking pediatric outpatients were studied at Hospital A, and 23 consecutive English-speaking pediatric inpatients were studied at Hospital B. Demographic data were statistically analyzed using the chi-square test, and there were no significant differences between the competent and incompetent groups (using CQ-Peds scores and cutoffs). CQ-Peds scores correlated highly with age ($r = .947$, $p < .003$; Outpatient Hospital A). Using the Child Behavior Checklist (CBCL) and the Pediatric Symptom Checklist (PSC) as a screen for psychopathology, the presence of psychiatric disturbance, *per se*, did not correlate with low CQ-Peds scores, nor was there a statistical difference between children from Spanish-speaking households and those from English-speaking households (Inpatient Hospital B). Overall, the children scored well on the CQ-Peds and demonstrated a good appreciation for their illnesses and treatment. The CQ-Peds score correlated highly with the that on the Wechsler Intelligence Scale for Children Revised Edition (WISC-R) vocabulary, comprehension, and similarities subtests and also with the Wide-Range Achievement Test-III (WRAT-III) reading assessment score (Inpatient Hospital B).

J Am Acad Psychiatry Law 29:298–302, 2001

Competency is fundamentally a legal issue dealing with the mental capacity or ability of an individual to perform a given act. The concept of competency is an important area of legal-medical interchange. The issue of competency in the pediatric population has taken on increasing relevance. In the famed Gault decision,[1] it was determined that almost every constitutional protection afforded to a given adult in any stage in a judicial hearing after arrest must also be afforded a juvenile defendant. This decision and its implications illustrate a transition in the legal conception of adolescent rights and competency.

Historically, adult status and its concomitant rights were accorded to an individual with achievement of a pubertal maturation, approximately 13 to 14 years of age.[2] After puberty, adolescents were treated as adults in court. This changed with the women's and children's rights movements of the late 1800s. In 1899, the first juvenile justice system was established in Illinois. The prevailing idea became that adolescents under the age of 21 years needed guidance rather than retribution from the courts. Under the doctrine of *parens patriae*, children and adolescents were presumed incompetent, thus obtaining neither rights nor responsibility from the courts. Beginning in the 1960s, there has been a rebalancing, providing children and adolescents rights and responsibilities similar to those of adults in a court of law, especially in medical care and felony crimes.

Belli and Carlova[3] have reported that even adult patients have difficulty understanding hospital consent forms. They found that 61 percent of consent forms required a college-level education to comprehend them fully. This is an interesting finding, in that only 31 percent of the current U.S. population has any college education.[3]

A number of clinical studies have been performed to examine the capabilities of various hospitalized patients to consent to their hospitalization. Appelbaum *et al.*[4] created a competency questionnaire

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(CQ) in their study of 50 voluntarily admitted psychiatric inpatients. Only 50 percent of these patients thought they had psychiatric problems that required treatment. Also, 50 percent did not know they had a right to refuse medication and to speak with a lawyer. Fully one half of the patients were not aware that the hospital could not hold them against their will without a court hearing, although they were given all this information at the time of admission.

Norko *et al.*[5] replicated this study, using the CQ again, looking at 100 consecutive adult psychiatric inpatients voluntarily admitted. They found that 85 percent of the patients knew they had a psychiatric problem that needed treatment. Although voluntary patients, 20 percent of them denied their need to be in the hospital. Norko *et al.*[5] found the CQ to have high interrater reliability.

Clark and Billick[6] studied involuntarily admitted adult psychiatric inpatients using the CQ. They found that 53 percent of the patients thought they had psychiatric problems that required treatment, a percentage comparable with that obtained by Appelbaum *et al.*[4] Only 37 percent of the patients understood the role of their physicians, and 42 percent understood the role of medication. In addition, 20 percent of patients were unsure of whether the hospital could keep them against their will, and 16 percent did not know what steps to take to obtain discharge. Billick *et al.*,[7] in a study of competency assessment of adult psychiatric inpatients in which the investigators were blinded to the rating scores, found the CQ to have high validity when compared with a forensic psychiatric assessment for competency to consent to hospitalization and treatment. Scores higher than seven correlated highly with competency. Scores less than five correlated highly with lack of competency.

Casimir and Billick[8] using a modified CQ for adolescent psychiatric inpatients (CQ-ChP) found the competency in adolescents to be most similar to that in involuntary adult psychiatric inpatients. Billick *et al.*[9] studied adult general medical hospital inpatients and found them to have overall competence superior to that of adult voluntary psychiatric inpatients. They used a modified version of the CQ for medical inpatients (CQ-Med).

Weithorn and Campbell[10] looked at 96 subjects at four age levels (9, 14, 18, and 21 years) to assess competency according to four legal standards. They found that competency in 14-year-old children did not differ from that of adults, but 9-year-old children appeared less competent than adults in their ability to reason about and understand the treatment information. However, 14- and 9-year-olds did not differ from older subjects in their expression of reasonable preferences regarding treatment. Furthermore, Weithorn and Campbell suggested that based on Piagetian research, more adolescents have the requisite cognitive skills to demonstrate competency, even according to the highest legal standard, appreciation. They go on to mention, however, that there has been little research that directly tests their findings in a treatment context. Billick *et al.*[11] studied the CQ-ChP in 25 child psychiatric inpatients 5 to 12 years of age. He found that the CQ-ChP score correlated well with reading level and the WISC-R vocabulary subtest raw score. These findings were similar to those of Casimir and Billick.[8]

Alderson[12] studied 120 children who underwent orthopedic surgery, and sought to determine the age at which a child has the capacity to make treatment decisions, particularly to refuse treatment. The children, their parents, and the health professionals were asked to state their opinions of the age for self-determination. The children gave the highest age of competent consent, 14 years, followed by their parents at a nearly identical 13.9 years. It was the health professionals who believed that youth could make decisions related to medical self-determination at the earliest age, 10.3 years.

Purpose

The goal of this study was to examine children's competency to consent to pediatric treatment using the competency questionnaire for pediatric patients (CQ-Peds; Table 1). The CQ-Peds is a modified version of the CQ-ChP. The child and adolescent psychiatry version has been slightly modified to fit a general pediatric population, retaining the choices for the child's assent and also parental decision-making. Of particular interest is the developmental aspect of competency in children, to determine whether the CQ-Peds can provide data to support "an age of competency." This study was conducted as two separate investigations at each of the hospitals. For the sake of completeness, they are reported together. Because of the presence of a bilingual population in Inpatient Hospital B, a secondary purpose was to assess the impact of language on proficiency on the CQ-Peds and psychological tests in children

Table 1 Competency Questionaire, Pediatric Outpatient Modified Version (CQ-PEDS)

1. Why are you here to see the doctor today?
2. Are you here today because you feel sick?
3. Do you need some kind of check-up (examination) treatment?
4. Do you need to see a doctor to get that check-up (examination) treatment?
5. What will your doctor do?
6. Why might (will) your doctor take blood from your arm or finger?
7. Why might (will) your doctor do an x-ray or other special test?
8. Why did your mom/dad/other want you to come to the doctor?
9. Will you go along with your doctor's treatment?
10. Will you take the medicine?
11. What will the medicine do?
12. Is there anything bad about the medicine or your treatment?
13. If the medicine made you feel bad, or tasted bad, what would you do?
14. Do you have to take your medicine?
15. Who would you tell if you were unhappy with your doctor or the medicine or the treatment?
16. What would you do if you were unhappy with your doctor or the medicine or the treatment?
17. Can your parents make you follow your doctor's plan?
18. Can other things be done to make you feel better?
19. If you don't get the medicine or treatment, what might happen?

coming from Spanish-speaking household versus those from English-speaking households.

Methods

Sixty-nine consecutive English-speaking pediatric outpatients attending a university hospital (Outpatient Hospital A) were studied. Demographic data collected included the subject's age, sex, and ethnicity. Twenty-three consecutive English-speaking pediatric inpatients admitted to a second university hospital (Inpatient Hospital B) were also studied.

Using the CQ-Peds, comprising 19 items, subjects were approached by one of the investigators and administered the questionnaire. Although there are no data on the interrater reliability of the CQ-Peds, it is based on the CQ, which has an established high level of interrater reliability and has also been shown to be valid.[5,7] Informed consent was obtained from all subjects participating in the study, as well as from their parents or guardians. Only patients who spoke fluent English were included in this study. After obtaining their informed consent, the CQ-Peds was administered. Responses were graded using a two-point system (acceptable response, 1; unacceptable response, 0). At Outpatient Hospital A, the Child Behavior Checklist (CBCL) and the Pediatric Symptom Checklist (PSC) were administered to screen for degree of comorbid psychiatric symptoms. At Outpatient Hospital A, the vocabulary subtest of either the Wechsler Intelligence Scale for Children Revised Edition (WISC-R) or the Wechsler Adult Intelligence Scale Revised (WAIS-R) was administered to assess whether there were any correlations with projected IQ. In addition, all the children at Inpatient Hospital B were administered the WISC-R or the WAIS-R vocabulary, comprehension, and similarities subtests. At Inpatient Hospital B, the WRAT-III reading subtests were also administered.

The results obtained from this study were compared with results from previous similar studies of voluntary and involuntary adult psychiatric inpatients, child and adolescent psychiatric inpatients, and adult general hospital inpatients. Multiple statistical correlations were made between overall scores, individual scores, scores on question groupings, age, sex, ethnicity, IQ or projected IQ, and number of previous hospitalizations. Significance was determined using standard methods of data analysis. A correlation between the questionnaire and the WISC-R vocabulary subtest scores was evaluated.

Using the prorated scoring from the validation study of the CQ[7] and the scoring in the subsequent study of child psychiatric inpatients using the CQ-ChP,[11] we divided the patients into three groups: (1) competent by CQ-Peds score of nine or higher, (2) incompetent by CQ-Peds score less than nine, and (3) incompetent by CQ-Peds score less than six. These cutoff scores: nine for the competent/incompetent two-tier category and nine to six for the competent/uncertain/incompetent three-tier categories.

Results

Outpatient Hospital A

Sixty-nine consecutive English-speaking (Outpatient Hospital A) pediatric outpatients (there were no refusals) were studied. Demographic data were statistically analyzed. The patients' ages ranged from 5 to 18 years. The mean age for the total group was 11.2 years. The mean age for competent patients was 11.5 years ($n = 67$) and 9.0 for incompetent patients ($n = 2$). Only two patients scored in the incompetent range on the CQ-Peds.

Overall, 40.5 percent of the subjects ($n = 28$) participating in the study were female compared with 59.4 percent ($n = 41$) male. Of the female patients,

all (n = 28) were found to be competent (a score of ≥9 on the CQ-Peds). Of the male patients, 95.1 percent (n = 39) were competent and 4.9 percent (n = 2) were incompetent (CQ-Peds score of 7).

Hispanics were the largest ethnic subgroup, comprising 55.1 percent of the total study group (n = 38). African American patients were the next largest subgroup (21.7%; n = 15) followed by white patients (14.57% n = 10), Asian patients (7.2; n = 5), and Native American patients (1.5%; n = 1). There was no statistical difference in CQ-Peds performance by social grouping.

The various demographic/clinical variables and scores on the questionnaire were statistically evaluated. When the CQ-Peds scores were compared with age, there was a statistically significant linear correlation (r = .947, p < .003). The mean WISC-R vocabulary subtest raw score was 20.6 (range, 1–52; n = 30). When the CQ-Peds scores were compared with the WISC-R vocabulary raw score, the linear correlation was r = .903 (p = .494). The mean WAIS-R vocabulary subtest score was 30.6 (range, 11–67; n = 8); linear correlation with the CQ-Peds produced r = .858 (p = .269). Subtest scaled scores correlated with overall intelligence. As in previous studies, these scores have not correlated with competency. However, raw scores were more closely similar to achievement level and have been shown in previous studies to correlate with competency. For example, a brilliant 4-year-old child is not likely to be competent, but a 12-year-old is more likely to be so.[8,11]

Validation of the CQ-Peds by the CBCL (psychopathology screening test) was highly sensitive but very poorly specific. Validation was determined with the two-tier competent (CQ-Peds ≥9)/incompetent (CQ-Peds <9) category. Validation by absence of psychopathology (CBCL negative), the CQ-Peds was highly sensitive (.97) for competency in nonpsychiatrically disturbed children (false-negative, .03), but was not specific (.04) for lack of competency (using CBCL positive) with a false-positive level of .96. With the three-tier competent (CQ-Peds ≥9)/uncertain/incompetent (CQ-Peds <7) categories, validation with the CBCL produced a sensitivity of .97, false-negative level of .03, specificity of 0, and false-positive of 1.00. For PSC negative the CQ-Peds (using the two-tier category) was highly sensitive (.96) for competency in nonpsychiatric disturbed children (false-negative, .04), but was not specific (.11) for lack of competency (using PSC positive) with a false-positive level of .89. With the three-tier, validation with the PSC produced a sensitivity of .96, false-negative of .04, specificity of 0, and false-positive of 1.00. Comparing the CQ-Peds with the CBCL (n = 56), linear correlation produced r = .840 (p = .460). Comparing the CQ-Peds with the PSC (n = 62), linear correlation produced r = .885 (p = .316). The presence of psychiatric stress did not preclude pediatric competency as measured in the CQ-Peds.

Inpatient Hospital B

Twenty-three consecutive English-speaking pediatric inpatients (from 7 Spanish-speaking households and 16 English-speaking households) were studied. The ages ranged from 6 to 18 years. The mean age for the total group was 10 years. The CQ-Peds score had a linear correlation with age of Pearson r = .735 (p < .0005).

Overall, 60.9 percent of the subjects (n = 14) were female and 39.1 percent (n = 9) were male. When the results of the CQ-Peds were compared by sex, there was no statistical difference between the two groups, nor was there a statistical difference between children from Spanish-speaking households and those from English-speaking households. When the CQ-Peds scores were compared with the three WISC-R subtest raw scores, the results were: vocabulary (Pearson r = .653, p < .0005), comprehension (Pearson r = .654, p < =.0005), and similarities (Pearson r = .740, p < .0005). When the raw scores were compared using the household language groupings, there was no statistical difference between the patients from Spanish-speaking households and the English-speaking household. A t test for equality of means in which equal variances were not assumed had a significance of .961. There was no statistically significant difference between the WISC-R subtest scaled scores and the CQ-Peds scores. The WRAT-III scaled reading test score was statistically significant against the CQ-Peds score (Pearson r = .637, p = .001). School Grade 5 correlated with CQ-Peds score 16.8. The WRAT-III scaled reading score was also statistically significant versus age (r = .634, p < .001).

Discussion

The issue of competency in the pediatric population has taken on increasing relevance. This study

sought to examine children's competency to consent by using a competency questionnaire designed for use in pediatric patients (CQ-Peds) and to determine whether "an age of competency" could be established. In 1914, in *Schloendorff v. Society of New York Hospital*[13] Justice Cardoza decided in favor of an individual's right "to determine what shall be done with his own body." The principle of informed consent was later refined in 1957 in the California case *Salgo v. Leland Stanford Junior University Board of Trustees.*[14] The results of the present study support the growing trend in society to give children, especially adolescents, a greater role in health care decision-making. Both age and acquisition of reading skills correlated highly with CQ-Peds performance. Grade 5, age 11 to 12 years, is the end of Piaget's concrete operational thinking and produced virtually 100 percent competence, as indicated by CQ-Peds scores. However, even younger children demonstrated an ability to participate actively in medical decision-making. Clinicians should be encouraged to include younger school-aged children in medical discussions and decisions. Clinicians should always include adolescents in medical discussions and decisions.

In the previous research cited earlier, competency correlated with fifth grade reading skills. This supports age 12 as the general age of acquisition of competency. The findings in this study were that even very young children scored well on the CQ-Peds (using the prorated cutoff scores from the previous CQ validation study[5]). This finding may indicate the need for a specific and separate validation study of the CQ-Peds to establish whether different norms should be used, rather than the prorated ones. Further research would be helpful in refining the CQ-Peds, perhaps achieving a reliable, valid, and shorter version, as has been done with the CAGE questionnaire (cut down, annoyed, guilty, eye opener)[15] in alcohol screening. The CQ-Peds may be helpful in supporting a clinician's clinical assessment of this specific competency in children. It would be helpful if the CQ-Peds or future modifications could serve as a prototype for other different specific competency assessments in children.

The CQ-Peds supports the notion of the acquisition of children's developmental competency to consent to treatment. Given the growing awareness of continued stages of development and ongoing reassessment of legal standards for juveniles, one area that merits future research studies is that of developmental competency in children. Closer examinations should also be given to a modification of the CQ-Peds into a shorter version. The CQ-Peds may be a helpful tool used for support of a clinician's clinical assessment of this specific competency in children. Further research on this instrument and other similar instruments would be helpful.

Children appear to be more knowledgeable about the decision-making process in health care than was previously assumed. Therefore, even if they do not have the final decision-making power, children should be included as active participants in pediatric decision-making.

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