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The Competency of Children and Adolescents to Make Informed Treatment Decisions

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WEITHORN, LOIS A., and CAMPBELL, SUSAN B. *The Competency of Children and Adolescents to Make Informed Treatment Decisions*. CHILD DEVELOPMENT, 1982, 53, 1589-1598. This study was a test for developmental differences in competency to make informed treatment decisions. 96 subjects, 24 (12 males and 12 females) at each of 4 age levels (9, 14, 18, and 21), were administered a measure developed to assess competency according to 4 legal standards. The measure included 4 hypothetical treatment dilemmas and a structured interview protocol. Overall, 14-year-olds did not differ from adults. 9-year-olds appeared less competent than adults with respect to their ability to reason about and understand the treatment information provided in the dilemmas. However, they did not differ from older subjects in their expression of reasonable preferences regarding treatment. It is concluded that the findings do not support the denial of the right of self-determination to adolescents in health-care situations on the basis of a presumption of incapacity. Further, children as young as 9 appear able to participate meaningfully in personal health-care decision making.

The law has long presumed children and adolescents to be incapable of making many important life decisions, including decisions about their own health care. Chief Justice Warren E. Burger, in the majority opinion in *Parham v J R* (1979), a case involving the commitment of children to mental hospitals, wrote "The law's concept of the family rests on a presumption that parents possess what a child lacks in maturity, experience, and capacity for judgment required for making life's difficult decisions. Most children, even in adolescence, simply are not able to make sound judgments concerning many decisions, including their need for medical care or treatment" (pp. 2504-2505). This presumed incapacity of minors (persons under the legal age of majority) to make competent decisions affecting their own welfare serves as one

of several rationales for denying children and adolescents increased rights of self-determination.

However, the traditional presumption of the incompetence of minors has been challenged, most notably by the late Justice William O. Douglas. In a footnote to his often-cited dissent in *Wisconsin v Yoder* (1972), Justice Douglas referred to Piaget, Kohlberg, Elkind, and others to support his contention that "the moral and intellectual maturity of the 14-year-old approaches that of the adult" (p. 1548). Douglas argued in this case, which addressed the rights of Amish parents to remove their children from public school on the grounds that such education interfered with their free exercise of religion, that the Court should have solicited the preferences of the children.

This study was conducted as the first author's doctoral dissertation under the sponsorship of the second author, at the University of Pittsburgh. A grant for doctoral dissertation research from the Law and Social Sciences Program of the National Science Foundation (SOC 79-09760) funded the project. We wish to acknowledge the members of the doctoral dissertation committee, Carl Barenboim, Mary Hartz, Stanley D. Imber, A. David Lazovik, and Paul A. Pilkonis, for their contributions to this research. We thank Loren Roth, Alan Meisel, and Charles Lidz for their continuing availability as consultants and Gary B. Melton, John Monahan, and Susan Piotroski for their reading of earlier drafts of this manuscript. In particular, we are grateful to the Port Washington Public School System and the George Washington University Department of Psychology, for their assistance in this project and provision of office space, and to the many children, adolescents, and young adults and their families, without whose participation this study would not have been possible. Requests for reprints should be sent to Lois A. Weithorn at the Institute of Law, Psychiatry, and Public Policy, University of Virginia, Blue Ridge Hospital, Box 100, Charlottesville, Virginia 22901.

The legislatures of many states have implicitly presumed the competency of adolescents in statutes giving adolescents independent access to and refusal of various types of health care, such as abortion, contraception, and psychological treatment (Brown & Truitt 1979, Holder 1977, Wadlington 1973, Wilkins 1975). Some states allow minors of specific ages to make decisions regarding mental hospitalization. It appears that even the current Supreme Court is willing to concede that some minors may be capable of making important health decisions for themselves. In *Bellotti v. Baird* (II) (1979), the Court held that a pregnant minor may obtain an abortion independent of her parents' wishes if she can demonstrate that she is "mature enough and well enough informed to make her abortion decision" (p. 3048). This opinion invoked the "mature minor" exception to the doctrine of parental consent. That is, certain states allow a minor to provide autonomous consent to any medical or surgical treatment or procedure if that minor is of "sufficient intelligence to understand and appreciate the consequences of the proposed treatment or procedures for himself" (*Arkansas Statutes Annotated* 1976, *Mississippi Code Annotated* 1972).

The few focused attempts by psychologists to apply cognitive developmental concepts to analyses of minors' competency to consent to treatment (Grisso & Vierling 1978, Weithorn, in press-a) or research (Ferguson 1978) have reached conclusions similar to those of Justice Douglas. Yet there is little empirical research which bears directly on the subject of minors' capabilities to make independent decisions about their own health care. Leon (1978) and Wald (1976), both attorneys, have suggested that behavioral scientists apply their methods to inform the law and legal personnel about the capacities of children in specific legal contexts. The current study is a test of the law's presumptions about the competency of minors to make decisions about their own health care. The research was designed to provide an initial empirical analysis of the degree to which legal age standards governing consent for and refusal of treatment are consistent with the chronological development of the psychological skills required to render competent treatment decisions.

Because competency is a legal concept, we referred to legal standards of competency in the planning of this study in order to maximize the criterion validity of our measurements. "Competency" is one of three com-

ponents (together with "voluntariness" and "information") necessary for a patient's treatment decision to be considered legally valid (Meisel, Roth, & Lidz 1977). The law provides little elucidation as to what constitutes competency and what criteria should be applied in its evaluation. Roth, Meisel, and Lidz (1977), Meisel (1979), and Appelbaum and Roth (Note 1) have included among the primary legal tests of competency (a) evidence of choice (the simple expression of a preference relative to the treatment alternatives), (b) "reasonable" outcome of choice (the option selected corresponds to the choice a hypothetical reasonable person might make), (c) "rational" reasons (the treatment preference was derived from rational or logical reasoning), and (d) understanding (comprehension of the risks, benefits, and alternatives to treatment). The latter standard can be further conceptualized as having two components: concrete "factual understanding" of the information that has been disclosed to the patient and a more abstract "appreciation" of the implications, to oneself, of each of the variables and options presented. Factual understanding, or recall of factual information, most accurately reflects what is assessed by most consent forms used in treatment settings. However, the concept of appreciation probably best reflects current legal notions of competency as elaborated in the *Restatement (Second) of Torts* (1979). This summary and analysis of current standards of torts law suggests that a child may provide effective consent if he or she is capable of appreciating the nature, extent, and probable consequences of the proposed treatments or procedures.

It appears that the presence of formal operational thought is necessary in order for one to be able to appreciate the nature and consequences of the proposed treatments and alternatives, to reason rationally or meaningfully about these alternatives, and to reach a reasonable decision. Inhelder and Piaget (1958) indicate that formal operational structures allow individuals to make choices after they have imagined where each of two or several possible courses of action leads. D'Zurilla and Goldfried (1971) propose that competent decision making takes into account the consequences of each proposed course of action, including both hoped-for consequences and other associated consequences.

In that formal operational thinking begins to appear at about age 11 in Western culture and reaches an equilibrium point by about

age 14 (Inhelder & Piaget 1958), we hypothesized that an empirical comparison of the competency of 14-year-olds and adults, according to the standards of understanding, rational reasons, and reasonable outcome, would support the proposition of the late Justice Douglas and others that 14-year-olds and adults do not differ with respect to competency. We predicted further that children younger than 11 would not be as competent as adults according to these standards of competency. Relative to the standard of evidence of choice, we predicted that no developmental differences would be observed, since the task of indicating a preference (which could include a preference to waive decision-making authority to a parent or health care professional) did not appear beyond the capabilities of most school-aged children (Lewis, Lewis, & Ifekwunigwe 1978, Weithorn, in press-a).

We designed a measurement instrument for use in this study, after a thorough review of the literature revealed no standardized measure of competency adequate for our purposes. Administering hypothetical dilemmas to "healthy" subjects offered certain distinct advantages in this first study of minors' competencies to make treatment decisions. The format allowed for the presentation of identical stimuli to all subjects, thus enhancing the comparability of groups. Further, it was possible to administer to all subjects multiple treatment dilemmas ranging in complexity (i.e., number of options), content (i.e., types of health problems), and difficulty (i.e., degree to which the reasonable options are clear-cut versus ambiguous). Finally, the present methods decreased the likelihood that certain variables, deserving separate attention in future research (e.g., exposure to parental opinion or the impact of illness), would confound the data.

Method

Subjects

The sample consisted of 96 subjects, 24 (12 males and 12 females) at each of four age levels: 8.5–9.5 years (mean age = 9.22 years), 14 years (mean age = 14.37 years), 18 years (mean age = 18.54 years), and 21 years (mean age = 21.42 years). The two younger groups of participants were recruited through letters sent to parents of children entering the fourth and ninth grades of a public school system on Long Island. The two older groups of participants, college students or recent graduates of the George Washington

University in Washington, D.C., were paid volunteers who responded to notices in the school newspaper. All subjects were white and were raised in homes where English was the only language spoken. Data on occupation and education of parents were obtained from adult subjects and parents of minor subjects with a questionnaire requesting information about demographics and health history. Separate 4×2 (age \times sex) ANOVAS were performed with social position scores tabulated according to Hollingshead's Two Factor Index of Social Position (Note 2), Peabody Picture Vocabulary Test (PPVT) scores (Dunn 1965), and ratings of direct and vicarious exposure to health problems, procedures, and treatments. No significant differences in social position or verbal intelligence were found among groups, which were characterized by middle-class membership and PPVT means ranging from 117.08 to 125.67. As one might expect, both direct and indirect exposure to health problems and procedures increased significantly with age ($p < .01$ and $p < .05$, respectively).

Informed consent—In accordance with the recommendations on research involving children of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1977), we obtained the assent of each prospective minor subject, as well as the permission of the parents, prior to this study. Both parents and children were provided with complete information about the study, according to the principles outlined by the American Psychological Association (Ad Hoc Committee on Ethical Standards in Psychological Research 1973). The informed consent of adult subjects was considered both necessary and sufficient to authorize participation.

Measurement of Competency

A measure of competency to render informed treatment decisions (MOC) was developed and consisted of (a) a series of four stories (i.e., hypothetical treatment dilemmas) describing situations in which individuals must choose among two or more health-care alternatives, (b) an interview schedule detailing questions and probes for each dilemma, and (c) a scoring system designed to rate subjects' responses according to each of the four tests of competency. The instructions directed subjects to put themselves in the place of the character in the story and to consider which of the proposed treatment alternatives they might select in that situation.

The dilemmas—A large pool of dilemma vignettes were generated and written in consultation with pediatricians, clinical psychologists, attorneys, and dentists. From 25 dilemmas that were pilot tested, four were chosen because they represented a range of complexity, content, and difficulty and were not viewed as being too "sensitive" or disturbing to present to the youngest subjects. Of these four dilemmas, two described treatment alternatives for medical problems (diabetes and epilepsy) and two described alternatives for psychological problems (depression and enuresis). The four dilemmas and treatment alternatives offered in each are summarized in Appendix A. The information in each dilemma was relatively detailed and included descriptions of (a) the nature of the problem, (b) alternative treatments, (c) expected benefits of such treatments, (d) possible risks, discomforts, and side effects of such treatments, and (e) consequences of failure to be treated at all (Meisel et al 1977).

Alternative forms of each dilemma were developed for minor and adult subjects. The terminology chosen was commensurate with age level, as determined during pilot testing. Differences in vocabulary were characterized primarily by additional definitions of certain terms for the minors (e.g., coma, injection). Descriptive variables in the story also were altered (e.g., sex and educational level of characters) in order to reflect the age and sex of the individual subjects. Appendix B presents the depression dilemma as written for a 9-year-old male. (Copies of other dilemmas, as well as the interview schedule and scoring criteria described below, can be found in Weithorn [Note 3] or are available from the first author.)

Interview schedule and scoring criteria—An interview schedule and corresponding scoring system were developed, focusing specifically upon the four tests of competency. Since any expression of preference, including waiver to an appropriate other, is considered competent (Roth, Meisel & Lidz 1977), a subject could earn one point on the Scale of Evidence of Choice for indication of any preference. Failure to indicate a preference would be scored as zero.

The Scale of Reasonable Outcome coded the alternatives from the dilemmas based upon judgments of "reasonableness" made by professional "experts." A panel of 20 experts in the relevant fields of specialization was chosen to make these judgments since, in reality, pro-

fessional opinion is the criterion against which patients' preferences usually are measured for such determinations. Each expert reviewed the two dilemmas appropriate to his or her field of expertise (i.e., pediatrics/adolescent medicine or clinical child/adolescent psychology). The experts were given five-point rating scales on which to indicate their judgments of the reasonableness of each of the treatment options presented in each dilemma (one point = "completely unreasonable", five points = "completely reasonable"). They provided separate ratings of each option as considered for persons aged 9 or 14 or college age. They were also instructed to rate each option independently (i.e., more than one option could be given the same score). Mean rating scores were calculated for each of the treatment alternatives as considered for each of the designated age groups. These mean scores became the scores subjects in each designated age group would receive when they chose a particular option.

Physicians were in general agreement regarding the reasonableness of the options presented for the treatment of diabetes and epilepsy, and their ratings did not differ with the age of the hypothetical patient. In general, the psychologists disagreed among themselves to a greater extent regarding the reasonableness of the proposed alternatives for the treatment of depression and enuresis. (The investigators were careful to choose experts who, as a group, represented the spectrum of theoretical orientations and clinical approaches.) The psychologists also were more likely to vary their ratings with the age of the hypothetical patient.

On the Scale of Rational Reasons, one point could be earned by subjects for providing each of several responses (specified with the scoring criteria) to questions about what they had "considered," "thought about," or "taken into account" when making their decision. For instance, for the epilepsy dilemma, subjects could receive a maximum of seven points, one point for stating that they had considered each of the following factors: (a) that untreated epilepsy probably will not spontaneously remit, (b) that continued epileptic seizures could lead to personal injury, (c) that continued epileptic seizures could interfere with academic work or social functioning, (d) that the medications could possibly control or decrease the frequency of the seizures, (e) and (f) that each of the two medications had specific side effects (which the subject must mention), and (g) that a routine of daily medica-

tion has certain practical concomitants (e.g., inconvenience). The maximum number of responses for which subjects could receive credit varied with the complexity of each dilemma and ranged from five for the diabetes dilemma to 15 for the depression dilemma. Acceptable responses for each dilemma were determined, *a priori*, by the content of the dilemmas and the responses of subjects during pilot testing. Explicit scoring criteria were developed.

The final scale measured understanding and was divided into two subscales: Rote Recall (measuring factual understanding) and Inference (measuring appreciation). This scale was composed of nine standardized questions for each dilemma, derived to evaluate subjects' understanding of the information disclosed in the dilemmas and ability to make inferences about that information. Examples of some of the questions measuring factual understanding of the various dilemmas are, "What happens if a person is taking insulin and misses one injection?" (diabetes dilemma), "What are the disadvantages [for 9-year-olds, 'bad things'] about phenobarbital?" (epilepsy dilemma), "What is a psychotherapist in this story?" (depression dilemma), "How does the bell and pad work to help the problem?" (enuresis dilemma). Whereas the information required to answer these Rote Recall items was provided to subjects in the dilemmas, subjects were required to infer their responses to the questions measuring appreciation from the facts presented in the dilemmas. Examples of inferential items include "If a person needs to take insulin injections every day for the rest of his/her life, how might this be a problem, or get in the way of things?" (diabetes dilemma), "What might happen if Fred/Fran was in class and had a seizure?" (epilepsy), "Using your imagination [for adults, 'speculating'], name at least two subjects which you think a person might discuss in psychotherapy" (depression dilemma), "If a person took the medication and developed one of the side effects, such as headache, stomach ache, crankiness, or nervousness, how do you think this might affect his/her day in school?" (enuresis dilemma).

Explicit scoring criteria modeled after the criteria of the comprehension subtest of the Wechsler intelligence scales (Wechsler 1974, 1981) were developed to code responses as two-, one-, or zero-point answers. Generally, a two-point response demonstrated adequate understanding, a one-point response demonstrated partial understanding, and a score of zero in-

dicated poor or no understanding. Crisso (1981) and Roth (Note 4) developed similar scoring procedures in their research on the competency of emotionally disturbed patients to make treatment decisions, and the competency of juveniles to waive their legal rights to silence and an attorney, respectively.

Procedure

Each subject was seen individually by the experimenter, the first author. After a review of the purposes and procedures of the study, the subjects listened to the MOC dilemmas from an audiotape, and MOC inquiry was administered in an interview format by the experimenter. The subjects' responses also were taped. The PPVT was administered subsequently. Parents of minor subjects completed the demographic and health-history questionnaire, whereas adult subjects provided their own responses. Minor subjects also were asked directly about certain types of experiences in order to supplement parental responses. Subjects were then asked about their reactions to the study. The entire procedure required approximately 2–2½ hours.

Data Reduction

The audiotaped interviews were typed onto scoresheets and scored by two trained raters who were blind both to the hypotheses of the study and to the age and sex of subjects. The raters, two college graduates with psychology backgrounds, were trained for 4 weeks until an adequate level of interrater agreement (85%) was achieved. The primary rater scored 100% of the actual protocols, and the secondary rater scored 50% in random reliability checks. Overall measures of interrater agreement were 100% for the scales of Evidence of Choice and Reasonable Outcome, and over 90% for the Rational Reasons and Understanding scales. Item by item agreement percentages surpassed 85% for the Rational Reasons Scale and all but three of the 36 items (nine items per each of four dilemmas) of the Understanding scale.

Results

Scores of the Reasonable Outcome, Rational Reasons, and Understanding scales were analyzed with multivariate analyses of variance (MANOVAs). Separate MANOVAs, 4×2 (age \times sex) by three dependent variables (MOC scales), were performed for each of the four dilemmas. Each MANOVA clearly demonstrated that statistically significant differ-

ences existed among the age groups ($p < .001$). The F 's obtained for the four MANOVAs were diabetes, $F(3,88) = 6.69$, epilepsy, $F(3,88) = 12.75$, depression, $F(3,88) = 7.76$, and enuresis, $F(3,88) = 9.97$. No statistically significant differences were observed for sex, $F(1,88) = 13.145$. Therefore, no further analyses were performed to examine sex differences at the univariate level.

A series of one-way ANOVAs was performed to identify which scale(s) accounted for the significant age differences for each dilemma. Simultaneously, a set of contrasts related to the hypotheses was carried out within each ANOVA to isolate further the specific differences among age groups. Separate tests were performed to examine age differences on the two Understanding Scale subscales (Rote Recall and Inference). Dunn's multiple comparison procedure (Kirk 1968) was employed to test for statistical significance of the contrasts. The criterion for statistical significance ($p < .05$) was divided by the number of comparisons (four) to arrive at a criterion of $p < .0125$ for each of the contrasts.

Comparisons between group means obtained on each scale for each dilemma were examined as follows: 18- versus 21-year-olds (in order to test the presumption of no difference between two adult groups and to insure the appropriateness of combining these two groups for further comparisons), 14-year-olds versus two adult groups combined, 9-year-olds versus two adult groups combined, 9- versus 14-year-olds. The results will be discussed separately for each standard of competency.

Scale of Evidence of Choice

Each subject expressed a treatment preference, and none opted to waive decision-making authority. Therefore, no age or sex differences were found to exist on the Evidence of Choice Scale either with respect to the criterion for competency (expression of a preference) or with respect to the manner in which the subjects opted to use decision-making authority.

Scale of Reasonable Outcome

Diabetes dilemma—All subjects in the sample chose "insulin injections" as their treatment preference.

Epilepsy dilemma—All subjects in the sample but three (12.5%) 14-year-olds expressed a preference for a trial on each of the two recommended medications. This option was judged overwhelmingly as the most reasonable alternative by the expert raters. The

three 14-year-olds indicated that they would not try Dilantin. The ANOVA performed on the Reasonable Outcome Scale scores revealed a statistically significant difference, $F(3,95) = 3.29$, $p < .05$, between the 14-year-olds and the remainder of the sample. The difference was not sufficiently strong, however, to differentiate the 14-year-olds from the adult groups.

Depression dilemma—The χ^2 analysis comparing the frequencies of option selection across groups was significant at the .001 level, $\chi^2(6) = 25.24$. The comparison between males and females yielded nonsignificant results. Fifty percent of the 9-year-olds selected inpatient treatment, in contrast to 16.7% of the 14-year-olds, 8.3% of the 18-year-olds, and none of the 21-year-olds. Subjects in the 14-, 18-, and 21-year-old groups chose the option of outpatient psychotherapy in identical proportions (75%), whereas 45.8% of the youngest subjects selected outpatient psychotherapy.

The ANOVA performed on the Reasonable Outcome Scale scores revealed significant differences in competency according to the standard of reasonable outcome, $F(3,95) = 3.21$, $p < .05$. The comparisons indicate that the strongest contribution to these differences is the comparison between the 9-year-olds and the adult groups ($p < .005$). The means for the groups were 3.24 (9-year-olds), 4.13 (14-year-olds), 4.18 (18-year-olds), and 4.17 (21-year-olds). The maximum and minimum scores possible were 5.0 and 1.0, respectively.

Enuresis dilemma—The analyses performed on the Reasonable Outcome Scale, $F(3,95) = 4.2$, and the frequencies of option selection, $\chi^2(9) = 15.88$, do not demonstrate significant differences among age groups. No sex differences were found in frequencies of option selection, $\chi^2(3) = 1.5$. There was a high degree of within-group variability in option selection for all four age groups. Age did not appear to differentiate subjects.

Scale of Rational Reasons

One-way ANOVAs performed separately with Rational Scale Reasons for each of the dilemmas revealed significant differences among the age groups: diabetes, $F(3,95) = 11.45$, $p < .0001$, epilepsy, $F(3,95) = 30.76$, $p < .0001$, depression, $F(3,95) = 13.20$, $p < .0001$, enuresis, $F(3,95) = 18.43$, $p < .0001$. Means and standard deviations of scores obtained by each age group for the four dilemmas are presented in table 1. The comparisons

performed to identify the specific group differences demonstrated similar patterns across dilemmas. For each dilemma, the 9-year-olds differed significantly from the adult groups ($p < .001$) and from the 14-year-old group ($p < .001$). No significant differences were observed between the two adult groups. The 14-year-olds did not differ significantly from the adult groups for the diabetes, depression, and enuresis dilemmas. However, a significant difference was noted between the 14-year-olds and adults for the epilepsy dilemma ($p < .005$).

Scale of Understanding

On all four dilemmas, statistically significant ($p < .001$) age differences were obtained for the overall ANOVAs performed with the scores of the Understanding Scale: diabetes, $F(3,95) = 19.41$, epilepsy, $F(3,95) = 23.35$, depression, $F(3,95) = 16.93$, enuresis, $F(3,95) = 27.73$. The comparisons revealed that the youngest minors differed from the adult groups ($p < .001$) and from the adolescents ($p < .001$) on all four dilemmas. Further, no significant differences were revealed when the 14-year-olds were compared to the combined adult groups. Table 2 reports the means and standard deviations for the Understanding Scale on all four dilemmas.

ANOVAs were performed for the two Understanding Scale subscales, Rote Recall and Inference, to identify age differences for each dilemma. These subscale mean score differences followed patterns similar to those noted for the Understanding Scale.

Discussion

The intent of this study was to test the hypothesis that adolescents aged 14 do not differ from persons defined by law as adults in their capacity to provide competent informed consent and refusal for medical and psychological treatment. The study compared the performance of subjects ages 9, 14, 18, and 21 on a measure developed to operationalize legal standards of competency. Our findings support predictions based upon Piagetian concepts of cognitive development (Inhelder & Piaget 1958). In general, minors aged 14 were found to demonstrate a level of competency equivalent to that of adults, according to four standards of competency (evidence of choice, reasonable outcome, rational reasons, and understanding), and for four hypothetical dilemmas (diabetes, epilepsy, depression, and enuresis). Younger minors aged 9, however, appeared less competent than adults according to the standards of competency requiring un-

TABLE 1
MEANS AND STANDARD DEVIATIONS FOR SCALE 3 (Test of Rational Reasons)
BY AGE GROUP ON FOUR DILEMMAS

DILEMMA	AGE GROUP			
	9 years	14 years	18 years	21 years
Diabetes (maximum score = 5)	2.17 (.87)	3.21 (.83)	3.50 (.98)	3.46 (.93)
Epilepsy (maximum score = 7)	2.58 (1.25)	4.33 (1.05)	5.08 (.93)	5.21 (1.02)
Depression (maximum score = 15)	3.25 (1.59)	5.46 (2.04)	6.13 (1.54)	5.67 (1.69)
Enuresis (maximum score = 11)	3.29 (2.12)	5.88 (1.92)	6.75 (1.07)	5.96 (1.57)

NOTE.—SDs are in parentheses.

TABLE 2
MEANS AND STANDARD DEVIATIONS FOR SCALE 4 (Test of Understanding)
BY AGE GROUP ON FOUR DILEMMAS

DILEMMA	AGE GROUP (Years)			
	9	14	18	21
Diabetes	12.75 (2.27)	15.75 (1.78)	16.42 (1.32)	15.92 (1.91)
Epilepsy	11.83 (3.19)	15.79 (1.77)	16.17 (1.27)	15.50 (1.32)
Depression	14.17 (3.00)	17.25 (.79)	17.33 (.76)	16.50 (1.47)
Enuresis	10.75 (2.82)	14.71 (1.76)	15.46 (1.82)	14.96 (1.60)

NOTE.—SDs are in parentheses.

derstanding and a rational reasonable process. Yet, according to the standards of evidence of choice and reasonable outcome, even these younger minors appeared competent. Children as young as 9 appear to be capable of comprehending the basics of what is required of them when they are asked to state a preference regarding a treatment dilemma. And, despite poorer understanding and failure to consider fully many of the critical elements of disclosed information, the 9-year-olds tended to express clear and sensible treatment preferences similar to those of adults. In the one instance where the 9-year-olds differed from the adults regarding outcome of choice, they reported preferring hospitalization for the treatment of depression more frequently than did other subjects. This difference may relate to the increased dependency of children at this age and a desire to place themselves in the total care of perceived help-providing adults when ill.

When questioned about what they had taken into account during decision making, the 9-year-olds overwhelmingly identified one or two of the most salient factors, although they usually failed to consider the multiple factors relevant to each dilemma (e.g., the disadvantages as well as the advantages of the option they eventually selected). Their focus upon sensible and important reasons suggests that they are capable of meaningful involvement in personal health-care decision making, even if their developing competencies are not sufficiently matured to justify autonomous decision making. Our findings in this regard are supported by the observations of other investigators (Korsch 1974, Lewis et al. 1978, Keith-Spiegel & Mass, Note 5).

Although the performance of the 14-year-olds was generally equivalent to that of the adults, numerically small but statistically significant differences between these groups were found for the epilepsy dilemma on two of the four competency scales. These findings may relate to the concerns of early adolescents about body image and physical attractiveness (Mussen, Conger, & Kagan 1974); since the recommended medication "rejected" by 12.5% of the 14-year-olds was described as sometimes leading to periodontal problems and occasionally causing an excess growth of body hair (hirsutism) (*Physicians' Desk Reference* 1978, p. 1243). These differences do suggest that competency, as defined by certain legal tests, may depend to some degree upon the dimensions of the specific decision making context. (It is noteworthy that according to the

test of understanding, which is the test most consistent with the law of informed consent, the 14-year-olds did not differ from the adults on this dilemma.)

The generalizability of these findings may be somewhat tempered by the fact that subjects were "normal," white, healthy individuals of high intelligence and middle-class background and that the situations they considered were hypothetical. Subjects clearly were not influenced by a current physical illness or psychological disorder or by factors such as weakness, confusion, depression, or anxiety which sometimes accompany such conditions. These factors may decrease individuals' ability to use their cognitive capacities in health-care decision making. Or, by contrast, increased motivation for competent decision making, "in vivo," may result in greater attention and concentration and lead to enhanced decision making. Further research must examine developmental differences in competency to make treatment decisions in naturalistic settings.

Competency is one factor among many relevant to legal policies governing consent requirements for minors. Lawmakers rely primarily upon interpretations of constitutional law and legal precedent when determining consent requirements for the treatment of children. They attempt to balance the interests of parents (e.g., family privacy and discretion in child rearing), of children (e.g., liberty and individual privacy), and of society (e.g., insuring a healthy and educated citizenry). Yet, as the statements of Justices Burger and Douglas suggest, policymakers' concepts of children's psychological capacities also are influential in determining such legal age standards (Werthorn, in press-b). The findings of this research do not lend support to policies which deny adolescents the right of self-determination in treatment situations on the basis of a presumption of incapacity to provide informed consent. The ages of 18 or 21 as the "cutoffs" below which individuals are presumed to be incompetent to make determinations about their own welfare do not reflect the psychological capacities of most adolescents.

Appendix A

Summary of MOC Treatment Dilemmas and Treatment Alternatives

Diabetes

Description	Symptoms of weight loss, fatigue and hunger, diagnosis as type of diabetes which cannot be controlled by diet alone
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- Option 1 No formal treatment
Option 2 Daily insulin injections

Epilepsy

- Description Grand mal seizures of unknown etiology occurring several times in first week
Option 1 No formal treatment
Option 2 Phenobarbital only
Option 3 Dilantin only
Option 4 Sequential trials on each medication if first trial does not control seizures

Depression

- Description Symptoms of depressed mood, absence from school, social isolation, loss of appetite, problems sleeping
Option 1 No formal treatment
Option 2 Outpatient psychotherapy combination family and individual
Option 3 Inpatient treatment

Enuresis

- Description Bedwetting occurring bimonthly and of decreasing frequency since early childhood, diagnosed as psychogenic
Option 1 No formal treatment
Option 2 Verbal psychotherapy
Option 3 Bell and pad
Option 4 Tofranil

Appendix B**Depression Dilemma as Written for a Nine-Year-Old Male**

Tom has been feeling sad and down much of the time for several weeks. Everybody feels sad every now and then, which is normal. But, in Tom's case it is more serious because he refuses to come out of his room or to go to school or to talk to anyone in the family. He has lost his appetite and has had trouble sleeping at night. He doesn't feel like doing anything, and has turned down all chances to go out. No one is sure what is going on with Tom, but they think that it is not a physical problem.

Tom's doctor felt that Tom was seriously depressed. This can happen when there are things on a person's mind which are bothering him, and when he feels that there is nothing to look forward to in his life. If Tom does nothing about the depression, it might get better on its own. However, this only happens sometimes, and there is no way to know for sure if or when it will happen in Tom's case.

Tom's doctor suggested that he see a psychotherapist. A psychotherapist is a person whose job is to talk with people who are upset about things on their mind. The psychotherapist can talk with these people to help them work out their problems, and help them get along better with those people who are important to them. The psychotherapist

met with Tom and said that she thought Tom could do either of two things for the depression.

One choice would be for Tom to set up regular appointments with the psychotherapist in the psychotherapist's office. Each appointment would last about an hour. Once a week, Tom would meet with the psychotherapist alone, and they would talk about whatever was on Tom's mind, or about some subjects the psychotherapist might suggest. On another day during the week, the psychotherapist would meet with Tom and his entire family for an hour. During these meetings, they all would talk about things which were important to them as a family. If Tom and his family kept their regular appointments for several months, it is possible that Tom would be able to get back to a normal routine, although there is no guarantee that the appointments will help the problem.

A second choice for Tom is to be admitted to a mental hospital, which is a special hospital for people with problems with their emotions. Some patients there might be depressed, like Tom, whereas others might have different problems. While there, Tom would share a hospital room with another patient, and would take part in certain daily activities, like art and music. He would meet with the psychotherapist at the hospital twice a week alone, and the entire family would come in for an appointment with Tom and the psychotherapist at the hospital. Tom would also take part in group psychotherapy with other patients, where they all would talk together with the psychotherapist about their problems.

While in the hospital, Tom would be away from his family, friends, and home. He would miss school, although he could arrange to have work brought to him so that he could try to keep up with his studies. He would need to obey certain regulations, such as when to go to bed, and that he could not leave the hospital without permission. If Tom stayed in the hospital for several weeks, and then continued to see the psychotherapist for weekly appointments afterwards, it is possible that he would be able to get back to a normal routine, although there is no guarantee that the hospital will help the problem.

In Tom's case, he has three choices. He can decide to wait, and hope the depression gets better on its own, he can see the psychotherapist in her office for regular appointments, or he can be admitted to the mental hospital. If you were in Tom's situation, and had to decide among these choices, what do you think you might decide to do?

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