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THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

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ENTITLED: The Effect of Psychiatric Exposure on the Competency of

Children and Adolescent to Consent to Mental Hospitalization

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Abstract

The present study investigated the effects of different degrees of subjects' experience on competency to make decisions in mental health settings. The study was guided in part by recent theories of cognitive development (Byrens, 1988; Siegler, 1981) explaining age differences in cognitive ability in terms of domain specificity and acquisition of expertise and, in part, by Welthorn and Aber's study (1988) comparing competency of children and adolescents to that of adults in actual/hypothetical situations across patient and non-patient groups. The first hypothesis of a positive relationships between the latency period (number of days passed between admission and competence assessment) and the competency scores was not supported. However, the second hypothesis of higher competency scores for the subjects having experiences relevant to the hypothetical situations yielded some promising results. Limitations of the present study are discussed.
The Effect of Psychiatric Exposure and Experience on the Competency of Children and Adolescents to Consent to Mental Hospitalization.

The increasing admission rate of children and adolescents to mental hospitals poses a serious social problem. The admission rate of children and adolescents in state and county mental hospitals jumped four-fold between 1980 and 1984. This is in contrast to the decreasing admission rate of adults in mental hospitals in recent decades.

It is believed that adult patient populations are intrinsically different from those of children/adolescents regarding their diagnosis and the nature of their problems. Supporting this view, Welthorn (1988) found that most of adult inpatients are diagnosed as psychotic or emotionally disturbed. On the other hand, juvenile inpatients are diagnosed as conduct disorder, personality disorder, childhood disorder, or transitional disorder. In fact, less than one third of the juvenile inpatients are diagnosed as having any severe or acute mental disorders (Welthorn, 1988). Welthorn (1988) further argued that the above data might suggest the misuse of mental hospitals as "dumping grounds" for many troublesome youths who seem to have relatively mild psychological problems. For instance in Georgia, many children are being hospitalized because of their families' incapability and unwillingness to care for them and
the state's lack of alternative residential services (Reppucci et al., 1984).

It has been also shown that community based intervention programs (alternative residential services) are far more effective than mental hospitalization. Kiesler found that the alternative programs are more effective in fostering patients' adaptations to the community (Reppucci et al., 1984). Furthermore, it was found that community based intervention programs are substantially less expensive than hospital care. In spite of the above findings, increasing numbers of children and adolescents are admitted to mental hospitals each year. One of the explanations can be that these children and adolescents are simply neglected by the states.

There are no clear-cut criteria guiding the admission of juveniles to mental hospitals. Neither the American Psychological Association nor the American Psychiatric Association have developed a set of formal criteria for the admission of children and adolescents to mental hospitals (Welthorn, 1988). Furthermore, the currently used clinical diagnostic systems are poorly conceptualized for children and adolescents and, at the same time, are unrelated to the empirical literatures (Reppucci et al., 1984). Even if the diagnostic systems are valid, in many cases, clinicians rely heavily on parental reports of juveniles' behaviors as the basis of admission decisions (Reppucci et al., 1984). This poses a potential problem since most
decisions regarding admission of children and adolescents are finalized by parents, psychiatric health professionals, or the child welfare system. However, children and adolescents themselves typically do not participate in the decision making process.

To complicate matters even more, there are also legal issues that need to be addressed if the situation is to be understood completely. With the rising consciousness of individual rights, the law has started to recognize the rights of mentally ill people and implemented many judicial due process hearings to carefully investigate the admissions of the involuntarily committed patients to the mental hospitals. In contrast, there are no required due process hearings for children and adolescents who are involuntarily admitted. In fact, the Supreme Court has ruled that parents have the right to commit their children to mental hospitals without any formal due process hearings.

In 1979, Parham v. J. R. the Supreme Court ruled that parents may "voluntarily" commit their children to mental hospitals without any formal due process hearings (Parham v. J. R. 422 U.S. 584 cited in Reppucci et al., 1984). This ruling is based on (1) a characterization of the commitment decision as a "medical" decision; (2) a denial of risks or errors in the admitting physician's assessment of the situation; and (3) the assumption that the risk of an error would not be reduced by the provision of judicial law (Reppucci et al., 1984). Furthermore, the decision is based on the court's analysis
that interests of families outweigh those of minors (Reppucci et al., 1984). Concerning this issue, Melton has stated that parents' perceptions of their disturbed children are frequently distorted by their own needs (Reppucci et al., 1984). Furthermore, Reppucci (1984) argued that it is a mistake to assume that the parental concern for children can be applied uncritically to parents of children who are considered for admission to mental hospitals. Even in cases where the state acts as the parent, the court still assumes that the state (the child welfare system or the foster care system) will not act differently from real parents. This is an inadequate assumption since a lot of parents have failed to act upon the best interest of their children. On the whole, there exists a conflict of interest between the state, parents, and children when it comes to committing adolescents to mental hospitals. Croxton, Churchill and Fellin (1988) identified three sets of interests that are in conflict: (1) the interest of the minors in privacy and saving themselves from perceived harm; (2) the interest of parents in family autonomy and raising their children as they see fit; and (3) the interest of the state in social stability.

It is important to note that the law has recognized the rights and privacy of adolescents in cases of treatments of venereal disease and drug and alcohol abuse without parental knowledge or consent (Croxton et al., 1988). Furthermore, the Supreme Court has repeatedly recognized the pregnant minor's right to obtain an abortion, if that minor is considered to be "mature" enough to make a
competent abortion decision. For example, in the case of Bellotti v. Baird (II), the court ruled that minors can have an abortion independent of parental consent based on their maturity or their competency to consent (Reppucci et al., 1984). This position of the Supreme Court regarding the competency of adolescents is very different from the position held in the case of Parham v. J. R., in which the court automatically assumed that adolescents are incompetent to make a decision regarding their own psychiatric treatments. Contrary to the Supreme Court's position in the case of Parham v. J. R., the lower federal courts had addressed the constitutionality of parental admission of juveniles to mental hospitals and held the statutes that parental discretion checked only by psychiatric judgment was insufficient to protect minor's liberty interests (Weithorn, 1988).

To sum up, the law has long recognized that children differ psychologically from adults and has presumed that adolescents are incompetent to make many decisions regarding their medical/psychiatric treatment (Reppucci et al., 1984). In fact, it has been argued that the courts are incapable of properly analyzing psychiatric practices since they do not analyze and interpret empirical finding the same way researchers do (Malcom, 1986).

In order for patients to participate in a medical/psychiatric decisions, professionals usually provide the opportunity for informed consent. Informed consent is a process in which a patient can use his
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or her right to participate in the decision making process. Moreover, the informed consent process protects the values of Individualism and autonomy in the medical/psychiatric context by: (1) promoting the individual's status as an autonomous human being; (2) protecting the individual's right to make his/her own medical decision; (3) protecting the patient against overreaching by the professionals; and (4) protecting the patient's privacy by protecting his/her physical and psychic integrity (Malcolm, 1986). In addition, informed consent is one way of facilitating greater patient involvement in decision-making process (Peter, Josephson, & Frey, 1989). It has been found that the participation of patients in their own treatment decision has a positive effect on the outcome of the treatment (Bastien and Adelman, 1984; Adelman, Lusk, Alvarez, Acosta, 1985).

Furthermore, it has been argued that increased participation in treatment planning may enhance the motivation for treatment and prepare the adolescent for the psychotherapy process (Kiser-Boyd, Adelman, & Taylor, 1985). Psychological research and theory also suggest that having some control over the process would enhance a sense of perceived justice and decrease resistance to the treatments (Melton, 1983).

To obtain legally informed consent from the patient, medical/psychiatric professionals are required to provide full information concerning the benefits and the risks of the chosen treatment as well as those of alternative treatments. Second, the act
of an involvement in informed consent should be voluntary. And finally, the patient has to be competent to make a decision. However, with adolescents, the issue of competency is problematic because the law perceives the minor as incompetent. People under the age of 18 are automatically presumed to be incompetent and they have never been allowed to participate in the decision making process (Parham v. J.R.). Still, the law has not provided any definite criteria for evaluating competency.

As I have said, the third and the most controversial component of informed consent is competency. The first principle of competency with adults is that patient is presumed to be competent unless proven otherwise (Arboleda-Izoret, 1988). Even with the involuntarily committed adult patients, most jurisdictions recognize their presumed competency and their rights to refuse the treatment proposed by the professionals (Schwartz, 1986). Yet, non-adult patients are presumed by the law to be incompetent except in the cases of abortion, use of contraceptive, drug and alcohol treatment, and child-abuse counseling.

Although, there is no clear-cut legal standard of competency, many psychologists have derived four possible standards of competency from the analysis of the court decisions. These standards of competency were used in the Weithorn study (1982), investigating the competency of adolescents to consent to medical treatment. The first is "evidence of risk", which requires that the
patient should show a preference regarding treatment (Reppucci et al., 1984). The second is "reasonable outcome of choice" which can be determined by comparing the patient's choice to prevailing professional opinion as to what are the best choices, or by comparing to a standard of the choice of what a "hypothetically reasonable person" might select (Reppucci et al., 1984). The third standard is "rational reasons" or reasonable decision making process, the manner in which the patient arrives at a decision. According to the "reasonable reasons" standard, the patient needs to consider the risks and the benefits of various treatments provided by attending professionals (Reppucci et al., 1984). The fourth standard is "understanding" which can be divided into two parts; "factual understanding" and "appreciation".

"Factual understanding" is simply a capacity to recall factual information and is used for informed consent in most treatment settings (Welthorn, 1984). However, in reality, factual understanding might not be an adequate measure of a patient's competency (Schwartz, 1986). For example, it favors patients with verbal skills and good recall but is disadvantageous to patients with inferior verbal skills (Schwartz, 1986). A second component of "understanding," "appreciation," is a capacity to appreciate the nature, the extent, and "probable consequences of the proposed treatments or procedures" (Welthorn, 1984). It has been viewed by some as a higher level of understanding, requiring the individual to
think abstractly and to make inferences about the implications of the proposed treatments for oneself (Reppucci et al., 1984). From the cognitive developmental point of view, the presence of formal operational thinking is required to appreciate the nature and the consequences of the proposed treatments and the alternatives (Welthorn, 1984).

There has been little research on the relationship between cognitive development and competency or on the difference between the competency of adults and adolescents. In her 1984 study, Welthorn compared the competency of adolescents with adults to make a decision among alternative medical treatments. Her study was based on the theory of Piaget's theory of formal operational thinking. According to Piaget's theory, the first two years are the sensori-motor stage, the next stage is preoperational or representational stage (until age 6), then the concrete operational stage (age 7 to 11), and the final stage is the formal operational stage (age 12 to 15) (Inhelder & Piaget, 1958). As one can note, formal operational thinking is the highest stage and is presumable reached at the age of twelve to fifteen. The stage of formal operational thinking is "a development of the ability to use hypothetical reasoning based on a logic of all possible combinations and to perform controlled experimentation" (Inhelder & Piaget, 1958). Reppucci et al. (1984) stated that formal operational structures allow individuals to conceptualize multiple abstract possibilities and to
hypothesize about the consequences of various courses of action. Furthermore, formal operational thinking is essentially hypothetico-deductive, which means that the deduction no longer refers directly to perceived realities but to hypothetical statements (Inhelder & Piaget, 1958). Piaget’s theory of cognitive development has been dominant in the field for the past 2 decades. Nevertheless, recent theoretical approaches have shifted away from the view of cognitive development as a series of stages toward the idea that similar skills in different task domains develop at different rates (Siegler, 1981). Piaget (1958) hypothesized that, once the child develops formal operational thinking, he or she will have homogeneous skills in different task domains. In contrast to Piaget’s position, Siegler (1981) stated that homogeneous skills develop in different task domains at different rates. Moreover, Siegler was concerned about developmental sequence, the rule assessment approach. The basic assumption is that cognitive development can be characterized by an acquisition of increasingly powerful rules for solving problems (Siegler, 1981). Siegler (1981) divided the developmental sequence into two parts, the first being within-concept and second, between-concept. The within-concept sequence involves a series of knowledge states leading to mastery of particular concepts, whereas the between-concepts sequence involves the order in which different concepts are understood (Siegler, 1981). Siegler (1981) also stated that "children may begin by reasoning about diverse concepts in..."
similar ways, but their reasoning may become increasingly
differentiated as they acquire specific information about particular
concepts". When faced with familiar contexts, the child gives more
sophisticated responses than with novel contexts (Siegler, 1981).

In accordance with Siegler, Byrnes (1988) has stated that there
is a declining interest in the formal operations model which
emphasizes the generality of the structures. He further argued that
recent cognitive theory is more focused on conceptual development
and the explanation of age differences in terms of domain specificity
and the acquisition of expertise (Byrnes, 1988). Contrary to Piaget's
theory, Byrnes (1988) argued that the child does not necessarily
move through the stages in a predictable manner across the domains
reaching the formal stage at a certain age, but theoretically and
empirically it is possible to reach formal operational thinking earlier.
From Byrnes' theory, it is safe to conclude that the experience of the
child, rather than his or her age, is the main determinant of
developing the formal operational thinking, at least during the
transition from concrete to formal operation. However, there may be
an interaction between age and experience of the child in developing
formal operational thinking. For example, Kaser-Boyd et al. (1985)
found that older and more experienced minors have a tendency to
identify more risks and benefits and to be able to use more abstract
concepts in their discussion of risks and benefits than their
counterparts. Concerning the difference between adult and
adolescent decision making processes, Croxton et al. (1988) state that the difference between the teenager and the adult in decision making is experience in the decision making process. In other words, knowledge and depth of understanding can be increased but capacity and competency for rational decision-making are in place by early adolescence.

As a result, assessments of people’s competency in one particular medical/psychiatric situation (real or hypothetical) may not generalize to another situation (Gardner et al., 1989). This makes it even harder to assess people’s competency in medical/psychiatric setting.

Belter and Grisso (1984) were concerned with informing adolescents of their rights in a mental health setting and their ability to recognize them in case of violations and whether they are able to take appropriate action to protect those violated rights. The results indicated that 9 year-olds were incapable of comprehending and exercising their rights, however, 15 year-olds were fully capable. In a similar manner, Kaser-Boyed et al. (1985) set up the study investigating whether adolescents are capable of understanding their rights and making practical use of information given about their rights. They found that 14 year-olds were competent but children under age 10 were not. In contrast to the above studies which used a general adolescent population, Adelman et al. (1985) used minors with moderate to severe learning and related behavior problems in
their study. However, the findings were similar to previous studies. The subjects were able to identify relevant therapy risks and benefits. These results show that the majority of the participants demonstrated a relatively high level of ability to understand, evaluate, communicate, and perform (Adelman et al., 1985).

In 1982, Weithorn designed a study to examine developmental differences in competency to make informed treatment decisions. The research was designed to investigate the difference in the context of legal age standard and chronological development of psychological skills of adolescents. The study was concerned with people’s competency to make a decision in hypothetical medical situations (Weithorn, 1982). In her study, she used four different age groups, (9, 14, 18, and 21) and found that 14 year olds did not differ from adults in their competency to make a decision according to the four legal standards (Weithorn, 1982). However, since the subjects of the study were from a general population, there is a question of generalizing the finding to an inpatient group. In fact, most of the studies investigating minor’s competency used either a general population or outpatient clinical samples. Moreover, the treatment decisions involved general medical, not psychiatric issues.

In 1988, Weithorn and Aber conducted a study comparing the competency of inpatients and the general population across different age groups. The present study will use their data but will address different questions based on the current cognitive developmental
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theory. This theory states that similar skills in different task domains develop at different stages due to domain specificity and the acquisition of expertise (experience).

My hypotheses and analyses are based on recent cognitive theory and Welthorn and Aber’s study (1988) comparing the competency of children and adolescents to that of adults in hypothetical/actual psychiatric situations across patient and non-patient groups. My main hypothesis is that different degrees of experience and exposure in mental health settings have an effect on the competency to make a treatment decision in that particular setting. The first sub-hypothesis is that the longer the latency period (number of days passed between admission and competence assessment), the higher the competency scores will be for the patient group. The second sub-hypothesis is that the more similar are the actual experiences of the subjects to the three hypothetical situations, the higher the competency scores will be for non-patient groups.

Method

The Original Data from Welthorn and Aber’s Study in 1988.

Sample

The sample consisted of 180 subjects, 60 at each of three age levels: 10-11 (child); 14-15 (adolescent); and 21-25 (adult). Thirty subjects in each age level were patients recently hospitalized in Virginia state psychiatric facilities and 30 subjects in each age level
were non-patient controls drawn from the general population. The child and adolescent patient subjects were solicited from four facilities within the state of Virginia that together served the majority of hospitalized juveniles: Dejarnette Center for Human Development in Staunton, Eastern State Hospital in Williamsburg, Virginia Treatment Center for Children in Richmond, and the University of Virginia Hospital in Charlottesville. The agreement of both a parent (or guardian) and a prospective minor subject was required for participation. Adult patients were sampled from two facilities; Western State Hospital in Staunton and University of Virginia Hospital.

On average, child patient subjects were 11 years, 3 months, adolescent patient subjects were 15 years, 2 months, and adult patient subjects were 23 years, 3 months of age. Of the 50 subjects in the child patient group, 25 were male and 7 were female. Of the 30 subjects in the adolescent and adult patient groups, 16 were male and 14 were female. The child, adolescent, and adult groups were each between 73% to 83% white. No statistically significant differences among the patient groups were observed on socioeconomic status.

For child and adolescent control groups, the Albemarle County Public school system served as the primary source of the samples. Adult controls were sampled from three sources; participants in the Federally-Funded-Women, Infants, and Children program and door
to door solicitation in trailer parks. For patient and non-patient groups, socioeconomic status, sex, age, and intelligence were matched. However, intelligence scores were slightly higher for the non-patient groups.

The agreement of each subject was obtained prior to participation in the study. If the subject was a minor, permission of that individual's parent or guardian also was required. Weithorn and Aber prepared separate consent forms for minors and adults.

Procedure.

Subjects in the hospitals were seen individually by one or two examiners. Non-patient juveniles were seen by one of the two examiners either at their school during a free period, or after school. Subjects in the hospitals were sampled as they were admitted. At the start of each interview, subjects were reminded of the purpose and nature of their participation in the study. The subject's agreement for audio-taping was sought. Patient subjects were asked questions relevant to their own hospitalization situation first, and the hypothetical dilemmas second. Non-patient subjects were administered only the hypothetical dilemmas. The procedures for patients and non-patients were given in following order: Patients: 1) PDF first from records 2) MOAC 3) hypotheticals 4) Woodcock-Johnson 5) remaining questions from PDF 6) after the interviews; BPRS/CPRS; Non-Patients: 1) hypothetical dilemmas 2) Woodcock-Johnson 3) PDF 4) after interview; BPRS/CPRS.
Experience and Competency Measurement Instruments.

Weithorn and Aber designed measures which were appropriate for administration to all age levels participating in the study. A measure of competency to consent to or refuse Mental Hospitalization (MOC-MH) was developed and adapted from the measure used in Weithorn and Campbell's investigation (1982). The MOC-MH was designed to evaluate competency according to several different legal tests and was administered in a structured interview format. Weithorn and Aber developed standardized questions and scoring criteria that would synthesize diverse patient experiences into comparably coded units. The measure examining patients' competency concerning their actual decision is referred to as the measure of competency to consent to and refuse Mental Hospitalization, or MOC-AC (actual). Weithorn and Aber also developed a measure allowing for complete stimulus control. The measure contained standardized hypothetical dilemmas and a more conventional type of standardization of scoring. This yielded the Measure of Competency to Consent to and Refuse Mental Hospitalization, or MOC-HYP (hypothetical). There are three dilemmas which were selected from among a larger pool developed after extensive review of charts at the various facilities from which subjects would be sought: Doug - behavior that would be criminal if committed by an adult (such as fire-setting); Carol - "status offense"
behavior that would not be criminal, but would make a juvenile subject to the jurisdiction of juvenile court (such as running away from home); and Tom - behavior that reflects more traditional psychological problems (such as depression).

Weithorn and Aber also structured the dilemmas so that they would reflect a range of complexity and difficulty. They defined complexity as the number of options available to subjects. And they defined difficulty as reflecting the degree to which the dilemma seemed to suggest a "correct" choice or led to a range of ostensibly "correct" choices.

The Competency Measures

After the interview, the subject's responses were scored to measure his/her competency according to strict criteria. The competency measures can be divided into two categories, the reasoning category and the understanding category for both MOC-AC (actual) and MOC-HYP (hypothetical). For MOC-HYP, there are three reasoning variables and two understanding variables. Reasoning variables are: (1) weight - ability to weigh benefits and risks involved in the alternative treatment options; (2) numsum - total number of response categories represented in question 1 (which of the following choices do you think is the best choice for Doug?); and (3) totnum - total number of scorable responses to all of the reasoning questions. There are fifteen response categories corresponding to all of the reasoning questions in the interview.
which include such categories as consideration of outcome/effectiveness of chosen/alternative treatment options, consideration of comprehensiveness/intensiveness of chosen/alternative treatment options, and consideration of degree of restrictiveness of chosen/alternative treatment options and etc. Furthermore, numsum represents the breadth of relevant issues considered, while totnum represents the number of different responses regardless of conceptual category. Understanding variables are: (1) facund - extent of factual understanding; and (2) infund - extent of inferential understanding. For MOCA-C, there are two reasoning variables and two understanding variables. Reasoning variables are: (1) weight - ability to weigh benefits and risks involved in the present treatment options; and (2) totnum - total number of scorable response in the present treatment options. Understanding variables are: (1) facun - extent of factual understanding; and (2) Infund - extent of inferential understanding.

Other Measurements.

Measurement of Intellectual Functioning - The Brief Scale of the Woodcock-Johnson Psychoeducational Battery Cognitive Ability test was used as a screening measure of intellectual functioning.

Socioeconomic , Educational , and Clinical Background Information- The Interviewers completed a Personal data Form (PDF) for each subject. Items were tailored to status as patient versus non-patient (e.g., information on diagnosis, reasons for admission and
related clinical information were sought only for patients). In
general, the data recorded on the PDF's for all subjects included
information about parental education and occupation, self education
and occupation (for adults), date of birth and custody.

Measurement of Nature and Severity of Psychopathology-
Welthorn et al. used the Brief Psychiatric Rating Scale (BPRS) and the
Children's Psychiatric Rating Scale (CPRS) for the patient groups'
behavioral functioning during the research interview.

Experience Measurements

Doug (Summary) - Doug had set fires in his neighbor's house
and then his own house a few months later. He also had problems in
school and couldn't get along with his peers and his teachers. The
judge told him that he had two choices: (1) keep seeing Dr. Anderson
(therapist); or 2) go to the treatment center.

Creating Experience Variables - From P.D.F. (Personal Data
Form), the non-patient was asked about their experiences relating to
the hypothetical dilemmas. For the Doug vignette, the experience of
fire-setting, therapist, and treatment center are important. The
sources of experiences are stated as the following: (1) personal
experience; (2) family member experience; (3) other vicarious
experience; (4) media experience; and (5) other. The total experience
variable is a sum of all the experiences. A person can have up to
three different sources in each experience. Total experience =
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experience of fire-setting + experience of therapist + experience of treatment center.

Tom (Summary) - Tom was feeling sad most of the time. He would not go to school or talk to his family. His depression was so serious that he had not eaten or slept well. He had three choices: (1) go to see a therapist; (2) try the treatment center; (3) Elavil; or (4) not to do anything. Total Experience = experience of depression + experience of therapist + experience of treatment center + experience of using Elavil.

Carol (Summary) - Carol has repeatedly run away from home. Carol ran away about 10 times during the past year. She said the reason she runs away from home is because she can't stand her parents' fighting all the time. Because she had not eaten in a long time and it was very cold outside, she was taken by the police to the hospital emergency room. She had three choices: (1) go to a family therapist; (2) treatment center; or (3) decide not to do anything for her problems. Exposure variables = experience of running-away + experience of family therapist + experience of treatment center.

Secondary Data Analysis

1. Relationship between Latency Period and Competency scores

The first sub-hypothesis was that the longer the latency period (number of days passed between admission and competency assessment), the higher the competency scores will be for the patient group. To address this hypothesis, the relationship between latency
period and competency scores in both MOC-HYP and MOC-AC were analyzed.

2. Relationship between Similarity of Non-Patient's Experiences to Three Dilemmas - The second sub-hypothesis was that the more similar the actual experiences to the three hypothetical situations, the higher the competency scores for non-patient groups. To address this hypothesis, the relationship between similarity of non-patient's experiences and competency scores in MOC-HYP were analyzed.

Results

In order to examine the first sub-hypothesis (the longer the latency period, the higher the competency scores will be for the patient group), the first part of the results section deals with the relationships between latency period and competency scores. For the second sub-hypothesis (the more similar the subjects' actual experiences to the hypothetical situations, the higher the competency scores will be for non-patient group), the latter part of this section deals with the analyses for the non-patient group.

1. Relationship between Latency Period and Competency Scores

The latency period (number of days between the admission and the competency assessment) was taken as one index of the degree of patients' exposure (experience) to mental hospitals. The relationship between latency variable and competency scores was examined to investigate the first sub-hypothesis that the longer the
latency period, the higher the competency scores will be for the patient group.

Latency Distribution

First, the distribution of the length of the latency period was found to range from 3 to 139 days for the overall patient group; 9 to 139 days for the child patient group; 8 to 111 days for the adolescent patient group; and 3 to 84 days for the adult patient group. Within each age group, the range of the latency period was quite extensive with some differences between three age groups. To reduce the potential of obtaining spurious results due to outliers, subsequent analysis involving the latency variable were conducted first on the full sample, and rerun again on the subsample that excluded cases with latencies 2 S.D. or more above the mean.

Relationship between Latency Period and Competency Variables for MOC-HYP (Doug)

Correlation between Latency Period and Competency Scores - Pearson Product-Moment correlations revealed negative relationships between the latency variable and each of the five different competency variables. Previous analysis of this data set revealed significant mean differences for both competency and latency across age with the younger groups having longer latency periods and lower competency scores. To examine the possibility that these relationships were accounting for the negative relationship between latency and competency, Pearson Product-Moment were
computed separately within each of the three different age groups. When this was done most of the negative relationships between latency and competency disappeared. In the adult group, positive but nonsignificant relationships emerged between latency and competency, with the strongest relations existing for number of response categories (numsum) and total number of scorabie responses (totnum). In the adolescent and child groups, most relations remained negative but were no longer statistically significant. These results are reported in Table 1. Furthermore, when the analysis was rerun after removing cases that were outliers on latency, the relationships were no longer statistically significant.

When the analysis was divided by three age groups, only one relationship in the adolescent group was significant. These data are presented in Table 2.

Confounding Variables to Latency

To further understand the relationship between age and latency, it was thought important to consider the patients’ psychological functioning. Longer latency periods between admission
to the mental hospital and the time of interviews were known to occur for particularly troubled patients. To verify this, first, an ANOVA was performed on the latency period with two independent variables: age groups (child, adolescent, adult) and five diagnostic groups (1. no-diagnosis group, 2. psychotic group, 3. impulsive group, 4. intelligent deficit group, and 5. depressive group). The overall model was significant ($F(12, 90) = 10.72$, $p<0.0001$). There was a significant main effect of age groups ($F(2, 90) = 11.07$, $p<0.001$). However, latency did not differ across the diagnostic groups ($F(4, 90) = 2.25$, $p<0.07$) and there was no significant interaction between the age groups and the diagnostic groups ($F(5, 90) = 1.54$, $p<0.19$).

When ANOVA was performed on latency after removing the outliers, the results were similar. There was a main effect for age groups ($F(2, 86) = 8.34$, $p<0.0005$), but not for diagnostic groups ($F(4, 86) = 1.96$, $p<0.11$). There was no interaction between the age groups and the diagnostic groups ($F(5, 86) = 0.00$, $p<1.00$). Further analysis of the mean values of the latency period by the diagnostic groups and the age groups are shown in Table 3. In this table, one can see that the patients were unevenly distributed across different diagnostic groups and there were several cases in which a particular diagnosis was absent for an age group.
Second, in order to examine how much of the variance in latency can be explained by variables other than competency scores, a stepwise regression analysis was performed with latency as the dependent variable, and with five different predictor variables: diagnostic groups, medication (number of current medications ranging from 0 to 3), health problems (present, not present), general academic achievement (low, average, high), and age groups. These variables were thought to be confounding variables for latency since more difficult and lower functioning patients might not be readily accessible for the interview. The relationship between latency and competency might be confounded by relationships between latency and these variables. The result for the overall model was statistically significant ($F(1,74) = 13.10, p<0.0005$). However, the only significant predictor in this model was age. It was found that the younger patients tended to have longer latency periods. When separate stepwise regression analyses were performed within each of the three different age groups, different sets of variables were predictive of latency. For the child group, the model was significant due to the diagnostic groups ($F(1,24) = 7.49, p<0.01$). For the adolescent group, the model was not significant. Finally, for the adult group, the model was significant ($F(3,23) = 6.06, p<0.004$) due to three different variables: medication ($F(1,23) = 5.3, p<0.03$); health ($F(1,23) = 5.17, p<0.03$); and sex ($F(1,23) = 4.61, p<0.04$).
Confounding Variables to Competency Scores

In order to examine if the competency scores truly reflect subject's competency to make the decisions in MOC-HYP and MOC-AC, MANOVA (Multivariate Analysis of Variance) was conducted on five competency measures (weight, numsum, totnum, infund, and facund) with six independent variables: (1) age groups (child, adolescent, and adult); (2) sex; (3) diagnostic groups (no-diagnosis group, psychotic group, impulsive group, intelligent deficit group, and depressive group); (4) number of current medication (ranging from 0 to 3); (5) health problems (present, not present); and (6) general academic achievement (low, average, high). Also, intelligence (IQ scores ranging from 50 to 155) was treated as a covariate. Since, latency was confounded by several different variables across age groups, competency scores were also examined to see if other variables can be accounted for their variances. Especially, intelligence might be closely related to competency scores more than any other variables. The results revealed that the model had an statistically significant effect for age groups (F(5,60) = 2.90, p<0.02); sex (F(5,60) = 4.10, p<0.01); and intelligence (F(5,60) = 2.74, p<0.03).

Regression Analysis of Competency on Latency - In order to control for the effect of severity of psychological symptomatology during the interviews on competency, BPRS (Brief Psychiatric rating Scale) and CPRS (Children's Psychiatric Rating Scale) were incorporated into the stepwise regression model. Adult patients'
psychopathological functioning was measured by BPRS. In a similar manner, child patient and adolescent patients' psychological functioning were measured by CPRS.

The stepwise regression analysis was performed on each competency scores as the dependent variables with BPRS/CPRS and latency variable as the independent variables: competency variables = BPRS + Latency, and competency variables = CPRS + Latency. The results were statistically significant for most of the competency variables. These effects were due to the significant negative relationships between BPRS/CPRS and competency, and significant negative relationships between latency and competency. In other words, competency increases as psychological symptoms decrease. The results are presented in Table 4 (BPRS) and Table 5 (CPRS).

Removing outliers on latency had little effect on the results.

Relationship between Latency Period and Competency Variables for MOG-AC.

Correlation between Latency and Competency Variables - Pearson Product-Moment Correlation revealed negative relationships.
between latency and four competency variables, especially stronger for the understanding variables. Since there was a significant main effect for age with latency and competency scores, further analysis within age groups was investigated. When the analysis was conducted within age groups, the significant negative relationships were no longer present. These results were presented in Table 6.

When the outliers on latency were removed, half of the negative relationships were no longer present. These results are presented in Table 7. These results suggest that the relationship between latency and competency is confounded by age. When age effects were controlled for in the analysis, most of the negative relationships between latency and competency disappeared.

Regression Analysis on the Latency Period with Competency Variables (MOC-AC) - BPRS and CPRS were incorporated into the stepwise regression model; competency variables = BPRS + Latency, and competency variables = CPRS + Latency. The stepwise regression analysis was performed with each competency score as dependent variables and with BPRS and latency as the independent variables.
for the adult group. The results were statistically significant for approximately half of the competency variables. These effects were due to significant negative relationships between BPRS and competency, and significant negative relationships between latency and competency. Removing outliers on latency had little effect on the outcome. The results are presented in Table 8.

---

Insert Table 8 about here

---

For the child and adolescent groups, the stepwise regression analysis (competency variables + BPRS + Latency) was performed on each competency variable and the results were similar to the analysis with BPRS. Table 9 shows these results.

---

Insert Table 9 about here

---

2. Effect of Similarity of Non-patient’s Experiences to Three Dilemmas

The relationships between non-patients’ actual experiences and their similarity to the three hypothetical dilemmas were examined to answer the hypothesis that the similar experiences in those contexts (Doug, Tom, Carol) have an effect on the competency to make a decision in those particular settings. In this section, only the Doug vignette will be presented in detail.
Confounding Variables to the Competency Scores - In the previous analyses, age and intelligence had confounding effects on the competency measures for the patient groups. To examine the effects of several variables on the competency measures for the non-patient groups, similar analysis were performed. When MANCOVA was performed on the competency measures with intelligence as a covariate (IQ scores ranging from 53 to 135), and in addition, health, sex, and age group as the independent variables, intelligence (F(5,70) = 4.98, p<0.001) and age (F(5,70) = 7.99, p<0.001) had significant effects on the competency measures. Further analysis on intelligence revealed that there were significant correlations between competency measures and intelligence. Analysis conducted within age groups, revealed that the relationships were weaker for the adolescent and weaker still for the adult group. Table 10 shows the comparisons.

Insert Table 10 about here

The above results reveal that age is closely related to both intelligence and competency scores and that there are significant positive relationships between intelligence and competency scores.

Relationship between experience and competency - To examine the influence of experience on competency
Experience and Competency

measures, several MANOVAs were performed. To examine the
effects of particular types of experience, separate MANOVAs were
performed on competency with each of the following, in turn, as
independent variables: (1) fire (fire setting experience); (2) tc
(treatment center experience); (3) therapy (therapy experience).
Next, experience with fire, tc, and therapy were combined into an
omnibus exposure variable (exposure to any one of these
experiences). Finally a variable representing total exposure (fire
setting experience + treatment center experience + therapy
experience) was used as the independent variable. All of the
following analyses on the competency measures were performed
controlling for intelligence as a covariate. Multivariate analysis
revealed that, when viewed individually, most of experience
variables had no main effect on the competency measures. Separate
univariate analysis on each competency scores revealed some
significant effects of these variables on the competency measures.
However, when experience was combined into an omnibus measure,
it had significant effects on the competency measures but not within
age groups.

The MANOVA performed to investigate if exposure to fire
settings had any effect on the competency measures revealed no
significant effect at the multivariate level ($F(1,85) = 1.57, p<0.18$).
When univariate analyses were performed on each competency
measure, only infund ($F(1,85) = 4.76, p<0.04$) was significant.
Moreover, fire-setting experience was further analyzed by creating variables indicating different sources of experience, \text{fire1} (personal experience), \text{fire2} (family experience), \text{fire3} (vicarious experience), \text{fire4} (media experience), and \text{fire5} (other experience). The multivariate analysis (MANOVA) revealed that these variables had no significant effect on the competency measures. The univariate analysis of these variables on each competency measure revealed no significant effects. The \text{firextot} variable (total number of different experience sources of fire-setting) was also analyzed with MANOVA on the competency measures. The multivariate analysis revealed that this variable had no effect on the competency variable (F(3,85) = 0.77, p<0.71). The univariate analysis also revealed that there was no significant effect of the \text{firextot} on competency measures.

The MANOVA performed to investigate if exposure to treatment centers (TC) had any effect on the competency measures revealed no significant effect (F(1,85) = 1.10, p<0.46) at the multivariate level. Univariate analyses performed on each competency measure revealed no significant effects. Treatment center experience was further analyzed by creating variables indicating different sources of experience, \text{tc1} (personal experience), \text{tc2} (family experience), \text{tc3} (vicarious experience), \text{tc4} (media experience), and \text{tc5} (other experience). The multivariate analysis (MANOVA) revealed that these variables had no significant effect on the competency measures. Univariate analyses of these variables on
Experience and Competency

Each competency measure revealed no significant effects. A final variable was created to measure the different sources of exposure to the treatment center. A MANOVA examining the effect of this variable on competency revealed no significant effect ($F(2,84) = 1.08, p<0.38$). The univariate analysis also revealed that there was no significant effect.

The MANOVA performed to investigate if exposure to therapy had any effect on the competency measures revealed no significant effects ($F(1,85) = 0.88, p=0.50$) at the multivariate levels. When univariate analyses were performed on each competency measure, no significant effects were found. Therapy experience was further analyzed by creating variables indicating different sources of experience, therapy1 (personal experience), therapy2 (family experience), therapy3 (vicarious experience), therapy4 (media experience), and therapy5 (other experience). MANOVA revealed that these variables had no significant multivariate effects on the competency measures. Univariate analysis of these variables on each competency measure revealed no significant effects. A final variable was created to measure the sources of exposure to therapy. A MANOVA examining the effects of this variable on the competency measures revealed no significant effect ($F(2,84) = 0.71, p<0.71$) at the multivariate level. The univariate analysis also revealed that there was no significant effect on the competency measures.
A MANOVA was performed on the competency measures with the exposure variable (exposure to any one of fire-setting, tc, and therapy experiences) and age groups as the independent variables. The multivariate analysis revealed that both exposure and age had significant effects on the competency measures ($F(1,85) = 3.44$, $p<0.007$) and, for age ($F(2,85) = 2.83$, $p<0.003$) respectively. Whether a person had any experiences relating to the vignette had a significant effect on the competency measures.

When MANOVA was performed on the total experience variable with competency measures, the multivariate analysis revealed that the experience variable did not have any effect on the competency measures ($F(5,81) = 1.30$, $p<0.16$). The age groups also had no effect on the competency measures. When the univariate analysis was performed on each competency measure, most of the results were not significant. Furthermore, there was no significant effect of total experience on competency measures when the multivariate analysis was performed within three age groups. However, the univariate analysis within three age groups, revealed some significant effects of total experience on some competency measurements. The results are reported in Table 11.
For the Carol and Tom vignette, similar statistical analysis were conducted and the results were similar to Doug vignette.

Discussion

Piaget's theory of cognitive development explains cognitive differences in terms of age differences of the child going through the predictable developmental stages. From this perspective, formal operational thinking, the stage in which the child can think reasonably about the actual/hypothetical situations, should be the time when she can make a competent decision. However, recent cognitive development theory (Byrons, 1988; Siegler, 1981) explains cognitive differences in terms of the child's experience and expertise in specific domains. Based on recent cognitive theory and using data from Weithorn and Aber's (1988) study, the question of whether a person can make a more competent decision if he/she has experiences relevant to the actual/hypothetical situation (in this case, mental-health settings) was investigated across different age groups and, across patient and non-patient groups. For the patient groups, the latency period was used as the measure of patient's experience in the mental health settings. After an extensive analysis of the relationships between latency and competency scores across both actual and hypothetical situations, it was found that patients who had longer latency periods tended to have lower competency scores. However, these findings do not necessarily contradict the hypothesis because of the significant effects of age and
severity of symptoms on latency. When the effects of age and severity of symptoms were controlled for in the analysis, most of the negative relationships disappeared. Moreover, the removal of latency outliers from the analysis also cancelled the negative relationships between latency and competency scores. Given these results, it appears that latency was not an appropriate measure of patients' experiences in mental hospitals, but rather was a better measure of the patients' difficulties and disturbances. Patients with more severe symptoms and younger age had longer latency periods. This might have been the case since more disturbed and younger patients could not be readily accessible for the interview. For future research, more sensitive and valid measures are needed to tap the patient's true experiences independent of severity of psychological symptoms.

Age played a significant role in the prediction of latency and competency scores. Age was related to both latency and competency scores; it was negatively related to latency and positively related to competency. These results suggest that age accounted for the negative relationship between latency and competency scores. Care must be taken to design future studies to remove the effects of age from both measures of experience and measures of competency.

The second sub-hypothesis which predicted positive relationships between subjects' similar experiences to the hypothetical dilemma and their competency scores, yielded some
promising results. The average mean competency scores were significantly higher for subjects who had experiences (fire-setting, treatment center, and therapy in the Doug vignette) relating to the hypothetical situations than for the subjects who had no such experience. The understanding scores were more strongly related to exposure than were the reasoning scores. Understanding is the highest legal standards of competency. The data suggests that the experience might help people to have deeper understanding of the decision making situations and thus make them more competent decisions makers. While whether or not the subjects had any experiences relating to the hypothetical vignettes was significantly related to competency, the amount of the subjects' experiences appeared to make no difference. This might be the case not because the amount of experiences is not important in making more competent decisions but because of the way the amount of experiences was measured. The amount of experiences were based on how many different sources of experience the subject had instead of on the depth of those experiences. On the other hand, it might be the case that only initial experiences are relevant to competency to make decisions and that, incremental experiences add nothing beyond that. Future research should take care to distinguish the number of sources of experience from the depth of those experiences.
Overall, this study found limited support for the hypothesized positive relationship between experience and competency. The limitations of this secondary analysis made it very difficult to come up with variables which measured exactly the concept of the experience. For future research, it might be helpful to measure not only the different sources of experiences but the depth of those experiences as well. However, one of the biggest drawbacks of this study was the fact that intelligence was significantly related to competency. Intelligence was more strongly related to reasoning than to understanding. Although, the effect of intelligence on competency was statistically controlled for in the analyses, the adequacy of this statistical control is still questionable. Furthermore, because competency is composed of reasoning and understanding, its strong positive relationship to intelligence might be inevitable.

Adolescents under the age of 18 can not legally participate in psychiatric treatment decisions. However, according to Piaget's theory, children reach formal operational thinking (which enables them to make competent decision) between age twelve to fifteen. Instead of explaining cognitive development in terms of age, recent cognitive theory focuses more on conceptual development and experience. In other words, recent cognitive theory states that the experience of the child is the main determinant of cognitive development. From the theoretical perspective, it is even possible for the child to reach formal operational thinking before or after that
certain age. However, there seems to be a strong interaction between age and experience. For example, the best indicator of people's experience might be age. To sum up, the initial experiences of the child in specific domains play a very important role in the child's cognitive development to be a competent decision maker.

This argument supports Cronxton's (1988) study which states that the difference between the teenager and the adult in decision making is experience in the decision making process. Likewise, this study supports the recent cognitive theory explaining cognitive differences based on experiences relevant to the decision making situations (psychiatric settings). Even though, age factor has been controlled for in this study, the interaction between age and experience should be carefully examined for future research. Finally, future research investigating the relationship between experience and competency is needed to address the question of how people's experiences relevant to the decision making situations affect their competency to make decisions in that particular setting.

Furthermore, for the policy makers, each individual's capacity to make competent decision in psychiatric situations should be carefully examined. If the hypothesis gets strong support, policy makers should give more autonomy to adolescents who are capable of making competent psychiatric treatment decisions (including their admissions to mental hospitals).
Experience and Competency

References


## Experience and Competency

### Table 1

Correlation between Latency and Competency Variables for Full Patient Sample. (MOC-HUP)

<table>
<thead>
<tr>
<th>Competency Variables</th>
<th>Full Sample</th>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td>90</td>
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</tr>
<tr>
<td>Facund</td>
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<td></td>
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<td>89</td>
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<tr>
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</tr>
</tbody>
</table>
Note. *p < .05
Experience and Competency

Table 2

Correlation between latency and competency variables after removing outliers (MOC-HYP)

<table>
<thead>
<tr>
<th>Competency Variables</th>
<th>Full Sample</th>
<th>Child</th>
<th>Adolescent</th>
<th>Adult</th>
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<td>R</td>
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</tr>
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<td>-0.14</td>
<td>28</td>
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<tr>
<td>Totnum</td>
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<td>86</td>
<td>0.04</td>
<td>28</td>
</tr>
<tr>
<td>Facund</td>
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<td>85</td>
<td>-0.45*</td>
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</tr>
<tr>
<td>Infund</td>
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<td>0.26</td>
<td>29</td>
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</tbody>
</table>
Note. *p < .05.
Table 3

The Mean Value of Latency Period by Five Diagnostic Groups and Three Age Groups

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<th>Diagnostic Groups</th>
<th>Child</th>
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<th>Adolescent</th>
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<th>Adult</th>
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<tr>
<td></td>
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<td>N</td>
<td>X</td>
<td>N</td>
<td>X</td>
<td>N</td>
</tr>
<tr>
<td>Non</td>
<td>24.67</td>
<td>3</td>
<td>36.25</td>
<td>4</td>
<td>21.3</td>
<td>10</td>
</tr>
<tr>
<td>Psychotic</td>
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<td>0</td>
<td>30</td>
<td>1</td>
<td>21.55</td>
<td>9</td>
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<tr>
<td>Impulsive</td>
<td>49.38</td>
<td>18</td>
<td>34.46</td>
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<td>Intel. Def.</td>
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<tr>
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<td>42.36</td>
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<td>19.09</td>
<td>11</td>
</tr>
<tr>
<td>Sum</td>
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<td>30</td>
<td>30</td>
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Table 4

**Stepwise Regression Model: Competency Variables = BPRS + Latency (MOC-HYP)**

<table>
<thead>
<tr>
<th>Competency Variable</th>
<th>Normal latency Distribution</th>
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</thead>
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<tr>
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<td>BPRS (F)  B</td>
<td>Latency (F) B</td>
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<tr>
<td>Weight</td>
<td>.</td>
<td>3.23 -0.009</td>
</tr>
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<td>5.12 * -0.048</td>
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<tr>
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<td>6.58 * -0.132</td>
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<tr>
<td>Facund</td>
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<td>4.86* -0.02</td>
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<tr>
<td>Infund</td>
<td>8.39 * -0.080</td>
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</table>
**Table 5**

**Stepwise Regression Model: Competency Variables = CPRS + Latency (MCG-HYP)**

<table>
<thead>
<tr>
<th>Competency Variable</th>
<th>Full Sample CPRS (E)</th>
<th>B</th>
<th>Full Sample Latency (F)</th>
<th>B</th>
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<tr>
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<tr>
<td>Numsum</td>
<td>5.07 * -0.07</td>
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<tr>
<td>Totnum</td>
<td>7.65 * -0.11</td>
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<td>.</td>
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<tr>
<td>Facund</td>
<td>.</td>
<td>.</td>
<td>7.52 * -0.02</td>
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<tr>
<td>Infund</td>
<td>3.10 -0.086</td>
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*Note.* *p* < .05
Table 6
Correlation between Latency and Competency Variables for Full Patient Sample. ( MQC-AC)

<table>
<thead>
<tr>
<th>Competency variables</th>
<th>Full Sample</th>
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<tr>
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<tr>
<td>Infund</td>
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<table>
<thead>
<tr>
<th>Competency Variables</th>
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<th>Adolescent</th>
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<td>-0.10</td>
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Note. *p < .05, ** p < .0005.
Table 7

Correlation between Latency and Competency Variables for Full Patient Sample and After Removing the Outliers (MOC-AC)

<table>
<thead>
<tr>
<th>Competency Variable</th>
<th>Full Sample</th>
<th>After Removing Outliers</th>
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<tr>
<td>Weight</td>
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</tr>
<tr>
<td>Facund</td>
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<td>85</td>
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<tr>
<td>Infund</td>
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</table>

Note. *p < .05, ** p < .0005.
Table 8

Stepwise Regression Model: Competency Variables = BPRS + Latency (Adult Group, MOC-AC)

<table>
<thead>
<tr>
<th>Competency</th>
<th>Full Sample</th>
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<tbody>
<tr>
<td>Variable</td>
<td>BPRS (F) B</td>
<td>Latency (F) B</td>
</tr>
<tr>
<td>Facund</td>
<td>9.74 ** -0.1134</td>
<td>4.15* -0.0201</td>
</tr>
<tr>
<td>Infund</td>
<td>7.15 ** -0.0917</td>
<td>7.30 ** -0.0251</td>
</tr>
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<td>. .</td>
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<tr>
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</tbody>
</table>

*Note. *p < .05  **p < .005*
### Table 9

**Stepwise Regression Model: Competency Variables = CPRS + Latency (Child + Adolescent Groups, MOC-AC)**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Full Sample</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CPRS (F)</td>
<td>B</td>
<td>Latency (E)</td>
</tr>
<tr>
<td>Facund</td>
<td>9.20**</td>
<td>-0.11</td>
<td>5.48*</td>
</tr>
<tr>
<td>Infund</td>
<td>7.19*</td>
<td>-0.10</td>
<td>5.15*</td>
</tr>
</tbody>
</table>

*Note.* *p < .05  **p < .005*
Table 10

Correlation between Intelligence and Competency Measures (Doug)

<table>
<thead>
<tr>
<th>Competency Variables</th>
<th>Full Sample</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>R</td>
<td>N</td>
</tr>
<tr>
<td>Numsum</td>
<td>.44**</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Totnum</td>
<td>.42**</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Infund</td>
<td>.24*</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Facund</td>
<td>.25*</td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competency Variables</th>
<th>Child</th>
<th>Adolescent</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>N</td>
<td>R</td>
</tr>
<tr>
<td>Weight</td>
<td>0.0735</td>
<td>30</td>
<td>0.2970</td>
</tr>
<tr>
<td>Numsum</td>
<td>0.6417**</td>
<td>30</td>
<td>0.4536*</td>
</tr>
<tr>
<td>Totnum</td>
<td>0.6301**</td>
<td>30</td>
<td>0.4511*</td>
</tr>
<tr>
<td>Facund</td>
<td>0.3872*</td>
<td>30</td>
<td>0.2550</td>
</tr>
<tr>
<td>Infund</td>
<td>0.4618*</td>
<td>30</td>
<td>0.3840*</td>
</tr>
</tbody>
</table>

Note. *p < .05   **p < 0.0005
Table 11
The Effect of the Total Experience on the Competency Measurements (Doug)

<table>
<thead>
<tr>
<th>Competency Variables</th>
<th>Child</th>
<th>Adolescent</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Weight</td>
<td>1.24</td>
<td>0.67</td>
<td>1.73</td>
</tr>
<tr>
<td>Numsum</td>
<td>2.25</td>
<td>1.53</td>
<td>1.20</td>
</tr>
<tr>
<td>Totnum</td>
<td>2.85</td>
<td>2.81*</td>
<td>0.70</td>
</tr>
<tr>
<td>Facund</td>
<td>0.52</td>
<td>1.18</td>
<td>1.11</td>
</tr>
<tr>
<td>Infund</td>
<td>0.92</td>
<td>1.73</td>
<td>2.23</td>
</tr>
</tbody>
</table>

Note. *p < .05