

Young Children's Understanding of the Social Roles of Physician and Patient¹

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Received August 1, 1983; revised June 21, 1984

Thirteen 4- and 5-year-old children's understanding of the social roles of doctor and patient was examined by means of a brief clinical interview and puppet play. In the context of a puppet play, each of 12 children first pretended to be either a doctor or a patient in a clinical setting while the experimenter played the complementary role. The experimenter and child then switched social roles and the structure and language of children's interactions were analyzed. While playing the role of physician, most children spontaneously asked numerous questions of the patient, performed therapeutic procedures, and prescribed therapeutic regimens. They often failed, however, to obtain a medical history or perform a physical exam, and their attempts at therapy included administering unspecific medication and prescribing rest, the ingestion of fluids, the avoidance of friends, and "surgery." As patients, they asked few questions, gave few commands, and frequently divulged personal information. These findings suggest that while young children have fairly

¹This work was conducted at the University of California, Riverside. The authors wish to acknowledge the UCR Children's Center for assistance in obtaining subjects, and Paula Treichler, PhD of University of Illinois, Urbana-Champaign for her comments on an earlier draft of the manuscript.

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detailed knowledge of the social roles of physician and patient, their limited understanding of illness and its treatment may restrict their understanding of physicians' and patients' motivations. An understanding of children's health care concepts may better prepare pediatric health care professionals to alleviate their patients' unnecessary anxiety arising from misinterpretation of the professionals' motives or of clinical procedures.

KEY WORDS: medical roles; social roles; puppet play.

Although relatively few studies have investigated children's understanding of concepts of disease and health care, some authors have examined developmental changes in children's affective and cognitive responses to illness (Bibace & Walsh, 1980; Brodie, 1974; Campbell, 1975; Edelson, 1943; Lewis & Lewis, 1974; Mechanic, 1964; Neuhauser, Amsterdam, Hines, & Steward, 1978; Perrin & Gerrity, 1981; Steward & Regalbutto, 1975). Perrin and Gerrity (1981), for example, found a coherent, developmental progression in children's concepts of illness, etiology, and recovery. Defining illness in terms of external stimulus characteristics, many of their kindergarteners suggested that illness is caused by a concrete action or by failure to act (e.g., eating candy or going outside in the rain without a jacket). Similarly, they described recovery as mediated by adherence to a set of rules such as resting in bed, or by performing actions such as listening to the heart or drinking ginger ale.

Research with adults has demonstrated the powerful influence of role expectations of physician and patient on responses to illness and the process of health care (DiMatteo & DiNicola, 1982; Freidson, 1961; Parsons, 1951, 1975). Whether or not an adult patient asks questions of a physician depends in part upon his or her beliefs regarding the "proper" social role of the patient vis-à-vis the physician (e.g., whether or not patients should be passive). Despite the potential significance of social role concepts of children to their perceptions of and responses to health care, investigators have largely ignored children's understanding of social roles and customs in the physician-patient relationship.

The present study adds to the descriptive base of children's understanding of disease and health care by examining their interpretation of the social roles of physician and patient. Since the assessment of social role understanding is often complicated by the covert, unarticulated nature of such understanding, we employed two methods: (a) an open interview to assess the child's *overt* knowledge of social roles in medical settings, and (b) an analysis of children's "doctor-talk" and "patient-talk" taken from puppet games to assess their more *covert* knowledge of social roles. In addition, the interview included questions concerning medical instruments and illness to facilitate comparison with the responses of children in other studies.

METHOD

Research protocols and subject selection procedures were given prior approval by the University Human Subjects Committee.

Subjects

The subjects were nine 4-year-olds (five male, four female) and four 5-year-olds (three male, one female) enrolled in a California university children's center. All children were from middle-class families, were healthy at the time of the study, and had normative medical histories.

Materials

During the interview, each child wore a standard white lab coat and examined a stethoscope, a wooden tongue-depressor, and a hypodermic syringe (with the cap removed only briefly to show the needle). The materials used for the "puppet play" were two cardboard dog and cat puppets, and two sex-neutral hand puppets dressed as a doctor and a patient.

Procedure

Subjects were randomly assigned to each of two counterbalanced conditions reflecting the possible sequences of the two assessment tasks: the interview and the doctor-patient puppet play. The interview and puppet play were conducted on two separate occasions, approximately 1 week apart by a female experimenter familiar to the children.

During the interview, the child was seated behind a low table and wore a white lab coat. The experimenter opened the interview with the following instruction: "Pretend that you're a doctor and I'm visiting you. I don't know what you're doing, so you have to tell me. I'm very curious, so I ask a lot of questions." Most of the interview questions assessed the child's knowledge of social roles in medicine. Questions were asked about doctors' role function, acquisition of the role, and payment. The child's knowledge of typical instruments used in pediatric practice—a stethoscope, a hypodermic syringe, and a tongue depressor—was also assessed by asking the child to demonstrate the use of each instrument and explain its purpose. The child's concepts of illness, etiology, and recovery were also explored.

The puppet play session began with a warm-up task in which the child was presented with a choice of making the cat or dog puppet "talk." The experimenter responded with the other puppet until the child had made 10 statements. With the animal puppets out of sight, the experimenter then oper-

ated either the doctor or patient hand puppet and presented the child with the other. Half of the children were randomly chosen to play the doctor puppet first, with the other half of the children playing the patient puppet first. The experimenter introduced the game by saying, "Let's pretend I'm the (doctor/patient) and you're the (patient/doctor), and we're in the doctor's office. Okay?" After a break from the first puppet play, the child and experimenter exchanged puppets and played the game again (after the appropriate introduction). The experimenter avoided biasing the child's responses by limiting her verbal responses to repetition of what the child had said and simple affirmation or disconfirmation. For example, if the child said, "Are you sick?," the experimenter would respond, "Yes, I'm sick." If the child did not respond verbally within 10 seconds, the experimenter would use a standard prompt. If a greeting or farewell were appropriate, the experimenter would say "hello" or "goodbye." While playing the physician role, the experimenter might prompt with, "Are you sick?" While playing the patient role, the experimenter might prompt with, "Am I sick?"

Analysis

All interviews were transcribed and scored independently by two trained raters. Rater agreement in categorizing responses to questions about medical instruments and social roles described below ranged from 80% to 99%. Disagreements were resolved by a graduate student who served as a third rater. The audio recordings of the puppet shows were transcribed verbatim shortly after each session. Systematic variations in grammar were analyzed using three verbal response modes from Stiles (1978) (described in Table 1). Two graduate students, blind to the social roles (physician or patient) played by the child and the experimenter, independently rated the transcriptions, labeling each utterance as a question, advisement, disclosure, or other category. Overall, there was 98% agreement between the raters in choice of label (based on 569 responses, including 318 responses by the experimenter). The few disagreements were resolved through discussion and reference to the categories described by Stiles (1978) (see Table 1).

RESULTS AND DISCUSSION

Interview

During the first portion of the interview, each of the 13 children spontaneously placed the instruments appropriately on the experimenter following her inquiry, "What's that?" For example, they would pretend to give an

Table 1. Common Verbal Response Modes

"*Question* concerns the other's experience in the speaker's frame of reference, focused on the speaker. The speaker attempts to fill a gap in his or her own frame of reference with information supplied by the other. Question form is interrogative with inverted subject verb order and/or interrogative words such as who, what, when where, why, or how."

(Stiles, 1978, pp. 695-696)

"*Advisement* concerns the speaker's experience in the speaker's frame of reference focused on the other. The speaker presumes to express what he or she wants done (experience) given his or her view of the situation (frame of reference) . . . Advice, command, suggestion, instruction, permission, and prohibition are scored as advisement."

(Stiles, 1978, p. 696)

"*Disclosure* concerns the speaker's experience in the speaker's frame of reference, focused on the speaker. That is, the speaker reveals something about his or her own internal experience or point of view. Disclosure form is first person singular (I) or first person plural (we)."

(Stiles, 1978, p. 695)

injection with the syringe, or would ask the experimenter to say "ah" while using the tongue depressor. The percentages of children explicitly describing the use or naming the instruments correctly were 92% (stethoscope), 78% (syringe), and 90% (tongue depressor). (Rater agreement on the correct vs. incorrect categorizations was 92%, 90%, and 90%, respectively.) As might be expected from the findings of Steward and Regalbuto (1975) and Bibace and Walsh (1980), however, children's understanding of precise instrument function and the clinical motivations for the use of each were limited. In response to questions by the examiner, about half of the children failed to explicate the functions of the medical instruments, and while the other children apparently recognized the need for functional explanations, their formulations were incomplete or incorrect. For example, one child placed the stethoscope on the experimenter correctly and explained that he was listening to her heart, claiming that hearts prevent blood from going around your body because your blood carries things, but could not explain what the "things" were or why doctors (or the child) listen to the heart.

Another portion of the interview probed the children's understanding of illness etiology. The explanation by a child that illness serves as punishment by the doctors or parents would be clearly of clinical significance. Beverly (1936), for example, reported that 90% of children with chronic heart disease or diabetes blamed their illness on their own "bad" behavior. The children in the present study had never been seriously or chronically ill, and it is interesting that *none* of them offered a "punishment" explanation of illness in the interview. However, many did mention illness as a consequence of

Table II. Summary of Responses to Physician Social Role Questions

Percentage	Response category
	What do doctors do? (<i>n</i> = 13) (coder agreement = 80%)
46%	Child identified a single, superficial function. "They give shots."
46%	Child gave a generalized description of doctor-patient relationships. "They make you well." Failed to recognize basic functions of doctors.
0%	Child identified role or function of doctor in society.
8%	Child did not respond or was unclear.
	How do you get to be a doctor? (<i>n</i> = 13) (coder agreement = 85%)
46%	You acquire external apparatus, like a lab coat or instruments.
23%	You ask permission of an authority figure like a teacher or principal.
31%	You have to go through special training or school.
0%	Child did not respond or was unclear
	How are doctors paid? (<i>n</i> = 13) (coder agreement = 99%)
46%	Doctors are not paid.
15%	Nurses pay doctors.
23%	Nonmedical authorities like teachers or stores pay doctors.
8%	Patients or their parents pay doctors.
8%	Child did not respond or was unclear.

specific behaviors without implying that it served as punishment. For example, in response to a question concerning how measles are transmitted, one child asked the experimenter, "Did you take a bite of the snow? Well, it's pretty chilly and it goes into your warm body and makes you have a cold . . . [measles] come out of the snow, it comes into your body and turns to ice and then comes out." Sometimes personalistic elaborations of the physician-patient relationship were the basis of recovery: "How will I get well?" "You have to get pills from the doctor's house, and you slide down the slide." Ritual behaviors within the physician role were often used to explain recovery without reference to causation. For example, simply going to the doctor or taking medicine was the preferred treatment of all children, but they could not explain how that would promote recovery. The children in this study restricted the therapeutic procedures they mentioned in the interview to medication which makes you well (usually immediately) or to prompt surgery (simply opening the "stomach"), and the prescription of rest, the ingestion of fluids, and the avoidance of friends.

The children's responses to the social role questions are summarized in Table II. The response categories are paraphrased with percentages of children responding within each category. The numbers of children responding to the various questions are also indicated in Table II.

It is likely that children's understanding of social roles and customs is influenced by their limited experience with some aspects of those roles. For example, most or all of the children in this study had limited acquaintance

with monetary transactions in clinical settings—probably because their parents had health insurance. Even fee-for-service transactions were likely handled by check, and certainly not with the piles of coins probably most salient to young children. Consequently, 46% of the children believed that doctors are not paid, and only 8% believed that their parents pay for medicine. The doctor's lengthy training is also remote from the child's domain of experience, so it is not surprising that almost half of the children believed that a physician's credentials are acquired by donning a white coat and using medical instruments. Since 54% of the children answered "no" to the question "Can a person be a doctor without wearing a white coat?" (with 92% agreement between raters), such an accoutrement may be very important to the child in the clinical setting. Almost half of the children identified the doctor's work as a single, superficial function (e.g., "They give shots"), demonstrating their lack of multiple role concepts. It is also interesting to note that if they mentioned social role attributes during the interview, the children always described physicians in positive terms, ranging from singular external behaviors (44%) (e.g., "They give you candy") to generalized behavior or personality (33%) (e.g., "They make you better." "They are good.") (84% agreement between raters.) None of the children mentioned physicians' motivations or intentions, and none described physicians in negative terms (e.g., "Doctors are bad.").

Puppet Play

The psycholinguistic analysis of children's doctor-talk and patient-talk in this study assessed their more covert knowledge of social roles in the clinical environment by categorizing their utterances while operating doctor and patient puppets. The analysis focused on the systematic, context-dependent variation in language that reflected covert patterns of the children's understanding of health care roles.

The children's use of verbal response modes should partly reflect their understanding of the social roles they played. Questions constituted 20.4% of all doctor-role responses, but only 4.6% of all patient-role responses. Similarly, advisement responses constituted 23.9% of all doctor-role responses, but only 0.9% of all patient-role responses. This asymmetric use of grammatical forms includes the disclosure mode, constituting 29.4% of the patient-role responses but only 8.4% of the doctor-role responses.

Table III compares the mean percentages of advisement and question response modes for the patient and physician roles from four sources: actual adult-patient and doctor interactions (Stiles, Putnam, Wolf, & James, 1979); actual mother and doctor interactions in pediatric settings (Freemon, Negrete, Davis, & Korsch, 1971); actual child-patient and doctor interactions

Table III. Comparison of Nonpediatric, Pediatric, and Child-Version Interactions

Clinical environment	% Advisement responses		% Question responses	
	Patient	Doctor	Patient	Doctor
Actual adult patient & doctor ^a	0.3	10.1	2.6	28.5
Actual mother & doctor ^b	0.2	8.0	5.3	23.3
Actual child & doctor ^b	0.1	26.5	4.6	8.9
Child-operated puppets ^c	0.9	23.9	4.6	20.4

^aFrom Stiles et al. (1979).

^bFrom Freeman et al. (1971). Advisement category corresponds to "gives instructions" category.

^cFrom present study.

(Freeman et al., 1971); and child-operated puppet-patient and puppet-doctor interactions from the present study. These percentages reveal that actual patients, regardless of age, typically ask very few questions and give very few advisements or commands.

As revealed in Table III, actual physicians ask less than half as many questions of child patients as they do of adult patients, but the doctor puppets asked a relatively high proportion of questions of their puppet patients. Perhaps the children remembered their own experience of physicians' questions as memorable and rewarding adult attention. On the other hand, the children may have been imitating the doctors' questioning behavior toward their own parents—something they probably had witnessed. The relatively high proportion of advisements directed by actual physicians toward child patients may be related to the doctor puppets also using a high proportion of advisement responses. In this respect, the children's doctor-talk and patient-talk resembled that of actual doctors and patients. Questions and advisement modes are comparatively easy for young children to use, but the use of edification and disclosure modes seems to be more difficult. Most of the edification responses (either in form or intent) of the actual patients were references to body parts or to antecedent clinical factors (Stiles, 1978). The child-operated patient-puppets made very few responses of this sort, so that most of their exposition was simple disclosure or acknowledgment.

One potential source of bias in these findings needs to be ruled out. Since the child-operated puppet always played opposite the adult experimenter in this study, it is possible that the experimenter's responses were later imitated when the child assumed the experimenter's puppet-role. This modeling most likely would be reflected in the response modes (which would be expected to vary with the role portrayed). If modeling significantly influenced the child's responses in the second puppet show, then the factor "order" would have a significant main effect (reflecting, for example, the child's modeling

of the experimenter's excessive use of questions regardless of role) or a significant interaction with the factor "role" (reflecting, for example, the child's modeling of the experimenter's version of doctor-talk).

Analyses of variance were performed on three of the response modes: question, disclosure, and advisement. The design was a 2×2 (Order of role assignment \times Assigned social role) mixed design analysis of variance in which the latter was a repeated measures factor. Role represented a significant main effect for all three response modes: the children asked significantly more questions as physicians than as patients, $F(1, 10) = 5.56, p < .05$; disclosed significantly more in the patient role than in the physician role, $F(1, 10) = 28.25, p < .001$; and advised significantly more in the physician role than in the patient role, $F(1, 10) = 30.04, p < .001$. The order factor (doctor role played first or second) was not significant for any of the response modes and there were no significant Order \times Response-mode interactions. Since these frequently used and role-dependent response modes were the most likely to reflect modeling effects, these results suggest that little modeling of experimenter responses occurred.

The structure of the clinical interaction during the puppet plays is outlined in Table IV. The child-operated puppet controlled the conduct of the interaction, since the experimenter used nondirective responses. Table IV lists the seven aspects of clinical interaction used by the children while operating the doctor-puppet. These ranged from the initial greeting to the closing farewell. The percentage of children initiating each aspect of the clinical interaction is listed. If the child gave the greeting first or asked the patient to come in, for example, the child was considered to have initiated the greeting. When prompting "patients" for descriptions of their medical problem, children portraying doctors asked such questions as, "How are you?" or "What's the matter?" When determining the "patient's" medical history, children asked

Table IV. Structure of Child's Version of Clinical Interaction

Responses of child playing doctor	% Responding
Child initiates greeting	58
Child asks patient to describe problem	33
Child asks patient about medical history	25
Child performs examination	50 ^b
Child performs therapeutic procedures	83 ^c
Child prescribes regimen for patient	92 ^d
Child initiates closing of interaction	83

^a $n = 12$.

^bFive of the six examinations consisted of "lay down," with one examination of the patient's throat (say "ah").

^cAll but one of the therapeutic procedures were injections or oral medication.

^dAll prescriptions were either for rest, fluids, or isolation.

questions about age, name, or occupation. Performance of a physical exam included commands to lie down (five of the six children employing exams did *only* that) and any standard examination procedures. None of the children referred to laboratory tests, X-rays, or cardiopulmonary exams. Therapeutic procedures used by the children included commands to take medicine by mouth, receive an injection, or have surgery. No other therapeutic procedures were mentioned. Prescriptions included recommendations to drink fluids, to rest at home, or to stay away from friends. The closing of the interaction involved saying farewell or stating something like, "That's all for now."

Descriptions of genuine pediatric interactions indicate that the physician generally initiates both the start and the close of the interaction (Korsch & Aley, 1973). Although some components of the interaction may occasionally be absent, most children have some experience with discussion of the principal complaint, taking of a medical history, conduct of a physical exam, administration of therapeutic procedures, and prescription of a behavioral or medical regimen. Korsch and Aley (1973) note that most of the interaction during the complaint discussion and medical history occurs between the doctor and the attending parent, so it is not surprising that few children include this in their version (Table IV). Interestingly, a few of the children depicted the physical exam as consisting only of the command to "lay down." With very concrete, superficial concepts of medical care, most of the children seemed to believe that doctors simply eliminate illness with prompt medication. These beliefs expressed in the interviews are corroborated by the high percentage of children medicating their "patients" during the puppet play. In addition, almost all of the children prescribed simple behavioral changes for their patients. Physical activity, social play, and diet may be very salient to the young children, so they may have attended closely to these prescriptions when applied to themselves. Finally, most of the children controlled the closure of the interaction, perhaps in recognition of the subtle behaviors used by physicians to facilitate closure of a clinical interview (Foley & Sharf, 1981).

ISSUES FOR FUTURE RESEARCH AND APPLICATION

Several important issues remain unresolved in this analysis of children's knowledge of health care. The first issue concerns the origins of the children's knowledge. Children likely derive their health knowledge from many sources — from personal observations of the world, from information given by parents, school, or the media, or from idiosyncratic, imaginative associations. The child who observed a faster pulse during exercise learned from

his own experience. The child who claimed that hearts "beep" may have assimilated the noise of the cardiac monitor during the high point of a television drama. The child who claimed that ice or snow causes colds may have been confused by the two meanings of the word "cold." Thus, because we depend on straightforward verbal reports, the present study of children's health care concepts does not reveal the origins of their ideas. Conclusions about their developmental meaning may therefore be limited.

A second issue concerns the validity of adult interpretations of children's language. When asked to define the flu, for example, one child responded, "You whistle with it." From this response alone, the experimenter is unable to determine whether the child misunderstood "flu" for "flute," or was referring to noises of bronchial congestion. This ambiguity raises havoc with assumptions about concept origin. References to cold weather and virus colds, for example, sometimes cannot be differentiated according to their origins in linguistic idiosyncrasy, parental instruction, or personal observations. This problem also occurs on a more practical level. For example, we noted that one child apparently confused the covered syringe for a thermometer ("You have 45 . . . once my cat got real hot . . . and she died."). In a clinical setting this misunderstanding might have gone unobserved by the health professional and resulted in an unpleasant surprise for the child.

A third issue concerns the relationship between children's health care concepts and their actual experiences with health care delivery. According to Freidson (1961), both pediatrician and patient act within the guidelines of their social roles and pattern their behavior to meet personal goals. The pediatrician's complex goals might include educating the parent, reassuring the child, making an accurate diagnosis, and determining treatment. The child's goals might be to avoid an injection or to play with the stethoscope. These goals may occasionally conflict, but (theoretically) their social roles should guide the physician and child towards a negotiated resolution (Freidson, 1961). The present study suggests that in the pediatric setting, this negotiation may be particularly complex, since children's social role concepts may be quite different from those held by the adult health professional. While pediatric health professionals with considerable experience probably already recognize the implications of children's confusion about social role, newly trained pediatric professionals may be dismayed at their lack of success in communicating with children about issues of illness and health care. For example, a pediatric resident might try to quiet a child's incessant questions about a tongue depressor by carefully explaining its function. The child, on the other hand, may be impatient with and unable to comprehend difficult concepts of inflammation or infection and would be happier with a concrete demonstration of use by looking into the resident's throat. Additionally, children's somewhat rigid conceptions of social role suggest that clinical staff

need to pay close attention to defining themselves clearly by uniform or title. This study is limited, of course, by the small sample and the middle-class socioeconomic status of the children. For this reason and the limitations described above, the results merely suggest these clinical considerations and should not be taken as directly applicable findings.

Pediatric health professionals generally adhere to a social role model in which the physician actively guides the therapy and the patient passively cooperates. In view of the limited judgment and autonomy of children, this model is appropriate. It is important to realize, however, that children are not totally passive. They apparently strive to understand many aspects of the medical interview, and even when they fail to ask questions or offer opinions, they are often busy constructing explanations. These explanations are often quite different from those of nearby adults. As this study suggests, young children acquire a great deal of information about social roles in the clinical environment, much of which may, under the wrong circumstances, be translated into erroneous conclusions. This suggests that health care providers should avoid treating children as passive patients and instead encourage their questions, disclosures, and opinions. Such discussion can be used to evaluate their understanding of procedures and to educate them at a level appropriate to their understanding. Each child should be approached as an individual, so that patient education, social interactions, and even procedures are adjusted to compensate for the young patient's unique understanding of what is happening to him or her. Pediatric health care practitioners who have an understanding of how children's health care concepts develop and how they can be analyzed may be better able to ameliorate children's anxiety and misapprehension of the clinical environment and enjoy greater patient satisfaction and cooperation.

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