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Assessing Children's Conceptions of AIDS[1]

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Assessed intuitive theories of AIDS transmission through clinical method interviews in a cross-sectional design for a sample of 205 1st; 195 3rd; and 208 5th-grade students, balanced by sex and race (black/white). Analyses of relationships between the types of theories children held and their responses to closed-end questions about transmission and willingness to interact with a person with AIDS supported the validity of the interview method. Grade differences were noted for knowledge of high-risk routes, rejection of misconceptions, and cohesiveness and complexity of children's theories. Theories also differed by race and verbal abilities. Implications for most appropriate ways to assess children's understanding of illnesses and directions for future research are discussed.

KEY WORDS: AIDS; children beliefs; attitudes; intuitive theories.

The increase in new cases of HIV/AIDS among adolescents and young adults has led to recommendations that educational intervention to prevent AIDS be introduced in elementary school (Centers for Disease Control, 1993; Vermund et al., 1989). To design educational programs that build on children's previously existing beliefs in ways that minimize fears, enhance effective preventive strategies,

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and promote compassionate views toward persons with AIDS (PWAs), more information is needed about developmental and other subgroup variations in children's conceptions of AIDS. Despite recent gains in information about children's beliefs about AIDS (e.g., DeLoye, Henggeler, & Daniels, 1993; Kistner et al., in press; McElreath & Roberts, 1992; Osborne, Kistner, & Helgemo, 1993; Schonfeld, Johnson, Perrin, O'Hare, & Cicchetti, 1993; Sigelman, Maddock, Epstein, & Carpenter, 1993; Walsh & Bibace, 1991), issues about how best to measure these beliefs remain.

Most studies use closed-end questions to assess children's conceptions of AIDS. The advantages of this method include ease of data collection, standardized information for items of interest, and access to information that children may be unwilling or unable to express verbally. However, the benefits of this method may be outweighed by concerns about validity when administered to young children (e.g., Do children comprehend the items and response format?). Also, this method provides information about pieces of information children may have, but offers little insight into how this information is organized, or the complexity of children's thinking about AIDS.

To circumvent limitations associated with closed-end questions, some investigators have turned to interviews in which open-ended questions are presented. This method has the potential to reveal how and what children think about AIDS without limitations imposed by closed-end questions. However, practical concerns (i.e., amount of time and effort needed to collect and code these data) and challenges to the validity of data derived from this method must be considered. That is, this method assumes that if children do not mention certain things in their open-ended responses, it is because they do not know about them, but there may be other reasons for omissions (e.g., forgetfulness, discomfort in the interview, or limited verbal abilities).

How children's responses to open-ended questions are coded also has implications for the strengths and limitations of this method. Some coding systems do not take advantage of the richness of responses to open-ended questions. If the only information obtained from open-ended questions is a list of children's beliefs, or an indication of the accuracy of children's beliefs, then this method offers little more than closed-end questions.

Several investigators have applied a Piagetian perspective to assessing children's conceptions of AIDS (Osborne et al., 1993; Schonfeld et al., 1993; Walsh & Bibace, 1991), in which children's responses to clinical method interviews are coded for complexity of reasoning independent of accuracy or content of beliefs. There are numerous criticisms of Piagetian theory, both with respect to general cognitive development (Carey, 1985; Flavell, 1985) as well as its application to the study of children's understanding of AIDS (Sigelman, Estrada, Derenowski, & Woods, in press). Of particular concern is the exclusion of information about accuracy and content of children's beliefs about AIDS. This information is of interest to those developing and evaluating AIDS educational interventions. Furthermore, there is growing consensus that complexity of reasoning is strongly related to one's knowledge base within a domain (Chi, 1978; Schneider, Gruber, Gold, & Opwis, 1993). Rather than relying exclusively on complexity of reasoning to describe children's conceptions of AIDS, information about content should also be included.

Carey (1985) argues that children's thinking about illnesses and other biological phenomena are not simply collections of accurate and inaccurate pieces of information, but constitute intuitive theories. In an attempt to characterize children's theories of AIDS, Sigelman et al. (in press) applied cluster analysis to children's responses to a questionnaire that assessed knowledge of AIDS transmission (i.e., children were asked to rate the probability that a list of 32 behaviors cause AIDS). The focus on children's intuitive theories of AIDS is an important direction for research, but the theories derived from their study were based on a rather limited view of children's beliefs about AIDS (i.e., information on "facts" but not depth or organization of their thinking about AIDS).

The present study extends previous research of children's conceptions or theories of AIDS by combining a Piagetian approach of clinical method interviews (i.e., children's initial responses to questions are followed-up, in order to provide more in-depth assessment of their thinking) with a coding scheme that includes complexity as well as content of children's beliefs about AIDS. Based on prior research (e.g., Osborne et al., 1993; Sigelman et al., in press; Sigelman et al., 1993; Walsh & Bibace, 1991), we hypothesized that children's theories of AIDS would become more complex (i.e., more logical in describing the process of transmission), cohesive (i.e., recognize only one type of causal agent, or identify commonalities in causal agents), and more accurate (i.e., inclusive of more accurate information and fewer misconceptions) with increasing age.

We were also interested in the types of misconceptions about AIDS that are characteristic of elementary school-aged children. In the absence of direct instruction about AIDS, children are likely to generalize from their experience with common illnesses, or from information about AIDS that they piece together from the media and other sources (Sigelman, Maddock, et al., 1993). Thus, we predicted that many elementary school-aged children would have theories of AIDS that reflected overgeneralization of knowledge about common infectious illnesses, or of media messages about AIDS.

Children's responses to closed-end questions about transmission were examined as an indication of the validity of our assessment method. Children with theories defined by precausal reasoning and multiple, unrelated misconceptions were expected to endorse more misconceptions in response to closed-end questions. Those with theories that reflected overgeneralized knowledge of common infectious illnesses were expected to endorse items concerning transmission through low-risk fluids as much as children with less cohesive theories, and more than children whose theories did not include transmission through casual contact. To address concerns that open-ended questions underestimate knowledge and understanding of children with less developed verbal abilities, we examined comparability of results for children's responses to open-ended and closed-end questions (i.e., grade, race, and verbal ability group differences).

Finally, we compared groups with different theories of AIDS for their willingness to interact with a PWA. While attitudes toward PWAs are thought to have multiple influences, it is likely that for elementary school-aged children an important determinant of their willingness to interact with a PWA would be concerns for their personal safety. Thus, we hypothesized that children whose theories include transmission through casual contact would be more reluctant to interact with a PWA than would children whose theories do not include this belief.

METHOD

Subjects

The sample, randomly selected from those with positive parent and child assent, included approximately equal numbers of children by grade (205, 195, and 208 in Grades 1, 3, and 5, respectively), sex (303 boys and 305 girls), race (302 white and 306 black), and county (305 in the Core and 303 in the Periphery). Socioeconomic status (SES) of children was indexed by number of years of maternal education (M = 12.97, SD = 2.26) and annual household income (median = $22,500).

Procedure

Parental consent forms were sent to all 1st, 3rd, and 5th graders attending 15 schools in a small metropolitan area in the Southeast (none of the schools included AIDS education in the curriculum). Children were given small prizes for returning these forms, even if parents did not give assent. Between 70 and 80% of parent permission slips were returned and the percentage of returned slips with positive permission ranged from 61–100% across 15 schools, with an average of 72%.

After obtaining child assent (3 declined to participate), children were individually interviewed at their schools by same-sex, same-race senior undergraduate or graduate students who completed 24 hours of training and conducted several practice videotaped interviews that were reviewed with them prior to data collection. All interviews were audiotaped and periodic checks on each interviewer were conducted throughout the study to insure that they followed the interview protocol. Closed-ended questions about transmission and willingness to interact with a PWA were presented at the end of the interview.

Measures

Clinical Method Interviews

Our interview protocol was adapted from Walsh and Bibace (1991) and Osborne et al. (1993). The interview included four open-ended questions: (a) Have you ever heard of AIDS, what can you tell me about it?; (b) How do people get AIDS?; (c) What happens to a person's body once they have AIDS?; and (d) How can people keep from getting AIDS? Interviews were structured to maximize children's free responses, with frequent encouragement to provide as much information as they could (e.g., using prompts such as, "What else can you tell me about AIDS?" and "Are there any other ways a person can get AIDS?"). After children said that they had nothing left to add to their responses, general probes designed to elicit children's reasoning about the disease (e.g., "Can you tell me more?" or "How does _____ give a person AIDS?") were introduced. Interviewers used children's own words in phrasing their follow-up questions. This paper focuses on children's beliefs about transmission.

Children's responses to the interview protocol were coded separately for complexity (independent of accuracy or specific content) and for content (presence or absence of accurate and inaccurate beliefs about transmission). The complexity code was adapted from Walsh and Bibace (1991) and Osborne et al. (1993). Categories 1 and 2 reflect precausal reasoning or explanations based on association of events. Categories 3 and 4 represent explanations that involve sequences of events, with the primary distinction between the two based on whether children describe internalization of a causal agent. Children in Categories 5 and 6 explain transmission through interaction of internal organs or malfunctioning physiological systems, with those in Category 6 including some mention of transformations at the cellular level.

The Content code measured children's knowledge of true risks (i.e., sex, shared needles, blood mix, or mother to baby) and internalization of either blood or sexual fluids of a PWA. Inaccurate beliefs about transmission were divided into four types: Nonhuman (e.g., from plants, pets, foods); Proximity or touch of a PWA; Low-risk fluids (e.g., coughing, sneezing, saliva) of a PWA; and Behaviors that are considered by society to be undesireable for moral or health reasons (e.g., smoking cigarettes, using drugs, drinking alcohol). This code was based on pilot data collected for 50 1st and 5th graders (copies of all measures and coding systems used in this study are available from the corresponding author).

Closed-End Questions

Children were read a list of 13 misconceptions about transmission (e.g., standing near a PWA; being coughed or sneezed on) and pointed to a visual display to indicate if they thought the item reflected a way that people can get AIDS. Response options included a range from 1 (*definitely YES*) to 5 (*definitely NO*), with *don't know* as the midpoint. Mean responses to these items ($\alpha = .84$) were used to index children's misconceptions about AIDS transmission, with higher scores reflecting more accurate beliefs (i.e., rejection of misconceptions). Children's responses to 2 items (i.e., would be friends with a PWA; PWA should have to stay away from others) were used to index their willingness to interact. Items were presented in the following format: "Some kids think . . . but other kids do not think . . . ." After making this decision, children were asked to state whether that is "really true" or "sort of true" for them. This provides a 4-point scale ($\alpha = .75$), with high scores representing greater desired social distance (i.e., more reluctant to interact with a PWA).

RESULTS

Initial Analyses

Interrater Reliabilities. Two graduate students independently coded children's responses to the interviewers' questions about AIDS, and overlapped on a randomly selected subset (23%). Kappa for interrater reliability for the complexity code was .93. For the 9 categories of the Content code, kappa ranged from .89 to .99. Children's responses to the interviewers' first question ("Have you heard of AIDS?") were used to screen out children who lacked awareness of AIDS (i.e., did not know that it is a medical condition; $\kappa = .99$).

Awareness of AIDS. Overall, 81.1% of our sample exhibited awareness of AIDS as an illness. Results of logistic regression analysis indicated that awareness of AIDS varied by grade, but not by race, sex, or SES. Of the children who were aware of AIDS, 38 (7.8%) gave no response to the question about how people get AIDS. Rather than assume that these children had no beliefs regarding AIDS transmission, they were dropped from the study. For the remainder of our analyses, only children who exhibited awareness of AIDS as an illness and who made some response to the question of how people get AIDS were included (n = 452; 94 1st graders, 162 3rd graders, and 196 5th graders).

Complexity of Children's Responses. Children's responses fell between Levels 2 and 5 of the complexity code, with only one unscoreable protocol. A Kruskal-Wallis one-way analysis of variance indicates that the grade levels significantly differed from one another in the distribution of responses across categories ($H = 64.58$; $p < .01$). Among 1st graders, 53.2% gave Level 2, 27.7% gave Level 3, and 17% gave Level 4 responses. One 1st grader's response was judged to be a Level 5. Third graders' responses were somewhat more complex than those of 1st graders, with 29.2% categorized at Level 2, 42.2% at Level 3, 23% at Level 4, and 5.6% at Level 5 responses. As expected, 5th graders' responses were judged to be more complex than those of younger children. Only 11.7% gave Level 2 responses and 17.3% of 5th graders' responses were categorized as Level 5. The majority of responses of 5th graders were categorized as either Level 3 (38.3%) or 4 (32.7%). Our findings are similar to those reported by previous researchers (Osborne et al., 1993; Walsh & Bibace, 1991), with the exception of no Category 1 responses among 1st graders. This may be a result of screening out children who lacked awareness of AIDS as an illness.

Content of Children's Responses. Table I presents the percentage of children within each grade with accurate and inaccurate beliefs about AIDS transmission, along with results of logistic regression analyses for grade differences. Across the elementary school years, children were more likely to have accurate information (i.e., sex and shared needles; transmission through body fluids) and less likely to believe some misconceptions about transmission (i.e., proximity/touch and nonhuman). The belief that AIDS is transmitted through casual contact similar to other illnesses did not decrease with grade, nor did the belief that engaging in unhealthy behaviors causes AIDS. The latter misconception included transmission through use of illegal drugs (9.6%); smoking cigarettes or

Table I. Results of Logistic Regression Analysis for Grade Differences in Children's Beliefs About Transmission and Prevention of HIV/AIDS

	Grade[a]			Odds ratio[b]		
Type belief	1	3	5	1st	3rd	R^c
Transmission						
Sex	3.6_a	27.0_b	59.0_c	0.02	0.24	$.305^d$
Needles	7.3_a	17.8_b	38.0_c	0.09	0.35	$.221^d$
Blood	4.5_a	$13.8_{a,b}$	25.4_b	0.10	0.30	$.192^d$
In utero	9.0_a	7.5_a	14.6_a	0.66	0.42	.062
Fluid exchange	9.9_a	$20.1_{a,b}$	47.8_c	0.12	0.24	$.157^d$
Low-risk fluids	27.0_a	36.8_a	33.2_a	0.80	1.15	.000
Behavior	27.0_a	27.0_a	19.0_a	1.78	1.75	.050
Proximity	38.7_a	27.0_a	11.7_b	1.77	1.34	$.189^d$
Nonhuman	15.7_a	6.3_b	8.3_b	5.31	0.86	$.278^d$
No idea	15.3_a	6.9_b	4.4_b	4.89	1.73	$.173^d$

[a]Percentage of children with awareness of AIDS who mentioned each type of belief. For each row of data, percentages with the same subscript do not differ significantly.
[b]Grade 5 is the referent group.
[c]Partial correlation for Grade and each dependent variable.
[d]$p < .01$.

drinking alcoholic beverages (6.5%); taking improper care of oneself through inadequate diet, rest, exercise, and so forth (9.2%); and nonspecific references to being bad or immoral (4.7%).

Formation of Theory Groups. Complexity of reasoning and patterns of accurate and inaccurate beliefs about transmission of AIDS were used to categorize children's theories of AIDS. Children's responses to open-ended questions about transmission were first divided into two groups, based on whether their responses included only accurate information or if some misconceptions about transmission had been mentioned. The group with only accurate information was further divided into those who understood that internalization of high-risk body fluids was necessary for transmission versus those whose knowledge appeared to be rote. Among children with misconceptions about AIDS, subgroups were formed based on complexity of reasoning (i.e., precausal vs. causal reasoning) and types of misconceptions (i.e., multiple vs. overgeneralization from common illnesses vs. overgeneralization of AIDS media messages). The following groups were formed: Magical—complexity code of less than 3 (all other groups reasoned at Level 3 or above) and at least one inaccurate route of transmission; Diverse—multiple types of misconceptions (i.e., casual contact vs. behavior vs. nonhuman); Germ—overgeneralization from common illnesses (i.e., identification of casual contact with a PWA as sufficient to transmit AIDS), no mention of nonhuman routes but possible overgeneralization of media messages; Behavior—overgeneralization of AIDS media messages (i.e., get AIDS by engaging in specific behaviors considered either unhealthy or socially undesireable). Rote Knowledge—no mention of misconceptions, identification of at least one high-risk route of transmission but no explanation of how that route transmits AIDS; and Integration—no mention of misconceptions, at least one high-risk route named, and description of internalization of blood or sexual fluids of a PWA. Groups were formed to reflect somewhat homogeneous beliefs about AIDS and do not form a distinct hierarchy with respect to cognitive development. Magical and Diverse theorists are expected to be less advanced than other groups but children with Germ and Behavior theories may not differ in cognitive development from each other or from groups with more accurate theories.

Descriptive Characteristics of Theory Groups

Table II presents descriptive information about the 6 theory groups (97% of the sample was classified). Children's theories of AIDS varied by grade ($\chi^2 = 109.33, p < .001$). First graders were more likely to be classified as Magical and Diverse theorists than were 3rd and 5th graders. The majority of Integration theorists were 5th graders, although some 3rd graders and even a few 1st graders were included. Third graders tended to have theories that were more complex and

Table II. Descriptive Characteristics and Types of Knowledge Mentioned by Children in Each of the Theory Groups

	Theory group					
	Magical	Diverse	Germ	Behavior	Rote Knowledge	Integration
True risks						
Sex	7.8	20.3	37.4	42.3	66.1	66.7
Shared needles	3.9	12.5	22.2	11.5	40.3	59.8
Blood mix	1.9	4.7	17.7	11.5	6.5	58.6
Mother to baby	5.8	12.5	8.1	23.1	14.5	18.4
Misconceptions						
Nonhuman	17.5	50.0	—	—	—	—
Proximity	58.3	45.3	25.3	—	—	—
Low-risk fluids	27.2	71.9	87.9	—	—	—
Unhealthy behavior	34.0	64.1	26.6	100.0	—	—
Grade						
1	53.3	23.9	10.9	2.2	4.3	5.4
3	23.8	13.1	25.0	8.8	16.3	16.9
5	8.5	11.1	25.9	5.3	16.9	32.3
Race						
White	16.1	12.8	26.1	6 0	11.0	28.0
African American	30.5	16.1	18.8	5.8	17.0	11.7
Sex						
Male	20.6	15.0	24.3	7.0	13.1	20.1
Female	26.0	14.1	20.7	4.8	15.0	19.4
Complexity[a]						
M	1.98_a	3.59_c	3.61_c	3.46_c	3.02_b	3.80_c
SD	0.20	0.66	0.70	0.58	0.86	0.79
Vocabulary[a]						
M	8.42_a	$9.33_{a,b}$	$10.13_{a,b}$	$10.77_{b,c}$	8.90_a	10.87_c
SD	3.00	3.01	3.44	4.29	3.21	3.16

[a]Means with the same subscript do not differ significantly.

cohesive than 1st graders but included more misconceptions about transmission than 5th graders.

Children's theories differed by race ($\chi^2 = 31.66$, $p < .001$) but not sex ($\chi^2 = 3.22$, $p > .10$). White children were more likely than black children to be categorized as having an Integration theory and less likely to be categorized as Magical thinkers. There were also differences in verbal abilities (i.e., WISC-R Vocabulary scores) across theoretical groups, $F(5, 431) = 7.23$, $p < .01$. Those with Integration, Germ, and Behavior theories had significantly higher vocabulary scores than did those with Magical, Diverse, and Rote Knowledge theories. Grade, race, and verbal ability differences in conceptions of AIDS are consistent with prior research (e.g., Sigelman, Derenowski, Mullaney, & Siders, 1993) but these findings are also consistent with the hypothesis that open-ended questions underestimate some children's knowledge and understanding (e.g., younger children; those with less verbal ability). We examine this hypothesis in the next section.

Responses to Closed-End Questions of Theory Groups

A one-way ANCOVA, with grade as a covariate, revealed a significant effect of theory, $F(5, 431) = 17.75, p < .01$, for children's responses to closed-end questions about transmission (see Table III for mean scores). Post-hoc analyses of differences between theory groups revealed that children who had not mentioned misconceptions in the interview (i.e., Rote Knowledge and Integration theorists) were more likely to reject misconceptions than were children with theories that incorporated misconceptions. Also, Integration theorists rejected more misconceptions than children with Rote Knowledge. These findings support the validity of the data obtained from clinical method interviews but do not eliminate concerns about underestimating some children's conceptions of AIDS. As noted previously, the proportion of children classified into theory groups was associated with grade, race, and verbal abilities. Are these developmental and individual differences in children's theories of AIDS transmission simply an artifact of differences in communication of beliefs in response to open-ended questions, or are these differences representative of how the children within these subgroups think about AIDS?

To address this question we examined grade, race, and verbal ability group differences (i.e., Standardized WISC-R Vocabulary scores above or below 10) for children's responses to the closed-end questions about AIDS transmission. Consistent with the findings obtained with the interview data, significant effects of grade, $F(2, 446) = 48.90, p < .01$; race, $t(447) = 3.51, p < .01$; and verbal ability, $t(443) = 4.11, p < .05$, were found (these data are reported in Kistner et al., in press). We also assessed theory group differences for responses to closed-

Table III. Children's Responses to Closed-Ended Items Assessing Knowledge of Transmission and Willingness to Interact with a Hypothetical Child with AIDS

	Theory of AIDS[a]					
	Magical	Diverse	Germ	Behavior	Rote	Integration
Transmission						
M	2.70_a	2.76_a	3.09_b	3.13_b	3.40_c	3.79_d
SD	0.75	0.75	0.64	0.67	0.67	0.63
Willingness to interact						
M	2.79_a	$2.55_{a,b}$	2.37_b	$2.50_{a,b}$	$2.30_{b,c}$	2.03_c
SD	0.71	0.91	0.98	1.08	0.90	0.94

[a]For each row of data, those with the same subscript do not differ significantly.

end questions separately for children of each grade, race, and verbal ability subgroup through a series of one-way ANOVAs. Results of these analyses were virtually identical to those reported for the full sample.

As predicted, children's willingness to interact with a PWA differed in accord with their theories of AIDS, $F(5, 432) = 4.38$, $p < .01$, even after controlling for grade level. Children with Magical, Diverse, Germ, and Behavior theories were more reluctant to interact with a PWA than were children with an Integration theory. Interestingly, children with Rote Knowledge differed only from Magical thinkers. Means for each of the theory groups along with results of post hoc comparisons are presented in Table III.

DISCUSSION

Our findings indicate that children's beliefs about AIDS transmission become increasingly accurate in terms of true risks and rejection of misconceptions. Misconceptions of this age group most commonly reflected overgeneralization from knowledge of common illnesses and to a lesser extent overgeneralization of media messages about AIDS. Complexity of reasoning did not differentiate groups, other than Magical theorists for whom precausal reasoning was a defining characteristic. This finding is not surprising in that accuracy and content of children's beliefs about AIDS transmission are a function of their exposure to information about AIDS as well as their capacity to understand this information.

Assessing children's conceptions of AIDS through clinical method interviews and coding responses in a manner that is sensitive to the accuracy, organization, and complexity of their thinking has much to recommend it. Research in other areas suggests that intuitive theories have implications for how new knowledge is incorporated and whether or not myths and rumors will be rejected (e.g., Johnson & Seifert, 1994). Consistent with this view, Integration theorists (i.e., those with some understanding of underlying mechanisms of transmission) rejected more misconceptions when directly asked than did children with Rote Knowledge.

The criteria defining theories described in this paper involved subjective judgement and need to be replicated. It may be useful to include additional criteria such as beliefs about disease process and prevention. Also, subdivision of theories to form more homogeneous groups should be considered. Ultimately, decisions about number and defining characteristics of theoretical groups must be guided by further studies of validity, particularly with regard to what these theories tell us about children's comprehension of media messages, parental discussions, and school interventions to prevent AIDS.

Children's responses to closed-end questions about transmission and willingness to interact with a PWA differed across theory groups in accord with predictions thus supporting the validity of our assessment method. Furthermore, this method did not appear to underestimate the knowledge of children of younger ages, minority group membership, or those with less developed verbal abilities. However, some caveats on the comparability of results obtained through the two methods are in order. Failure to mention a misconception about transmission in the interview was not synonymous with rejection of that misconception when directly asked. For example, only 2 (4.3%) of the children in the Rote Knowledge group, and 10 (9.8%) in the Integration group rejected all closed-end items that described transmission through casual contact with a PWA. Despite repeated probes by interviewers for additional information, children in these two groups did not voice their doubts about some types of transmission. These discrepancies may arise because a particular belief was not considered until it was directly asked about. Alternatively, the belief may be one that is salient and children simply did not mention it, either deliberately (i.e., embarrassed) or unconsciously (i.e., did not think of it during the interview). Discrepancies may also arise as a function of children's interpretations of closed-end items. For example, children may agree with a question about getting AIDS by sharing a toothbrush with a PWA, not because they think AIDS is transmitted through internalization of saliva but because of the possibility of contact with blood of a PWA. In this way, a child could endorse so-called misconceptions on a questionnaire yet have very informed and sophisticated theories of AIDS transmission. Regardless of the reason for discrepant information between methods, these findings underscore concerns about interpreting children's omissions.

A combination of assessment methods is likely to be the best approach to take in studying children's conceptions of AIDS. Clinical method interviews are ideal for assessing children's organization of beliefs, complexity of explanations, as well as accurate and inaccurate beliefs about transmission that are salient to them. Inclusion of closed-end questions about common misconceptions increases confidence in the information derived from the interviews. Further clarification of children's theories of AIDS may be obtained by asking children about discrepancies in their responses to open-ended and closed-end questions. The points addressed in this paper are relevant to assessment of children's understanding of illnesses in general. Comparisons of children's theories of AIDS with theories about other illnesses is a direction for future research.

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