Children’s Perceptions of Peers with AIDS: Assessing the Impact of Contagion Information, Perceived Similarity, and Illness Conceptualization

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Assessed factors that affected acceptance of a hypothetical peer with AIDS. Children in Grades 4–6 read vignettes containing one of four levels of contagion information and one of two levels of perceived similarity. Illness conceptualization was measured as a continuous variable. Results indicated that the type of AIDS information given to children affected their perception of the peer. Specifically, informing children about the modes of HIV transmission was not sufficient to increase acceptance, but clearing misconceptions by describing ways HIV is not transmitted positively affected children’s reactions to the peer. No other significant results were found. Results of the current study have clear and practical implications for AIDS education programs in schools.

KEY WORDS: AIDS; children’s perceptions; health attitudes; conceptions of disease.

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Each year, over 1,000 children are added to the list of people infected with HIV (Centers for Disease Control, 1993). An increasing number of children who are HIV-positive are attending schools. At school they come into contact with classmates and teachers—many of whom fear being near them or have stigmatized views of people with AIDS. Peer perceptions play an important role in peer interaction. Rejection and isolation can lead to poor emotional and social adjustment as well as exacerbation of some disease symptoms in children with AIDS (Olson, Hustzi, Mason, & Seibert, 1989). Moreover, noninfected children can worry unnecessarily about catching AIDS from casual contact.

Several investigations have indicated that children's knowledge of AIDS increases with age (Brown, Nassau, & Barone, 1990; McElreath & Roberts, 1992; Sigelman, Maddock, Epstein, & Carpenter, 1993). However, these studies and others demonstrate that children's understanding of AIDS is far from complete. For example, Fassler, McQueen, Duncan, and Copeland (1990) found that 6 to 12-year-olds had several misconceptions about modes of AIDS transmission. Osborne, Kistner, and Helgemo (1993) corroborated these results with ages 5–13. Among the most frequent myths reported concerned being near a person with AIDS, sneezing, kissing, and donating blood. Brown et al. (1990) postulated that differences among the age groups were due to the younger children's concrete understanding of publicized AIDS knowledge.

Recent attempts to understand children's reactions to AIDS have delineated developmental stages of beliefs about contagion (e.g., Osborne et al., 1993, Walsh & Bibace, 1991). Walsh and Bibace (1990, 1991) concluded that children's causal understanding of AIDS directly parallels the developmental pattern seen in children's illness conceptualization. Children in less advanced stages have general, more ambiguous, fears about getting AIDS, with these fears being primarily dispelled by receiving reassurance from authority figures. Children in the most advanced stages are able to categorize and better understand mechanisms of transmission, although not without some errors. From gaining knowledge of transmission, these children can deduce strategies for prevention.

However, those in the middle stages of development have very concrete views of how one does and does not get AIDS. At this level, children view causes as discrete from each other and do not use any classification rules to group these causes. Hence, "they are unable to exclude supposed causes which they overhear or imagine on the basis of classification rules" (Walsh & Bibace, 1990, p. 259). Several investigators (DiClemente et al., 1990; Walsh & Bibace, 1990) have suggested that such individuals also require concrete information about how one does not contract AIDS.

There is modest support that fear of contagion influences children's acceptance of peers with illness or disability (e.g., Santilli & Roberts, 1993). However, only one study has manipulated information about contagion across different stages of illness conceptualization. Osborne et al. (1993) found that an
educational intervention targeting modes of AIDS transmission and nontransmission produced more positive attitudes toward people with AIDS, relative to a control group. In addition, higher levels of illness conceptualization among the subjects (ages 5–13) were associated with more positive attitudes.

Perceived similarity is another variable that may influence one's perception of another person. Studies of both adults' and children's perceptions of non-disabled, physically disabled, and intellectually impaired individuals have often shown that similarity leads to greater acceptance (e.g., Siperstein & Chatillon, 1982). However, perceived similarity has not been examined in relation to children's perceptions of physically ill individuals. In contrast to the similarity-breeds-attraction hypothesis, Harper, Wacker, and Seaborg Cobb (1986) suggested that there may be some disabilities that children reject "irrespective of the social context" (p. 340). They contended that AIDS may be in such a category. Indeed, Novak and Lerner (1968) suggested that when persons perceive themselves as similar to an individual and vulnerable to some negative characteristic of this individual, attraction decreases due to the sense of personal threat. In this particular case, perceiving themselves as dissimilar to the peer increases attraction. Thus a similar peer "may elicit the threatening thought 'Can this also happen to me?'" (Novak & Lerner, 1968, p. 148).

The present study assessed the impact of illness conceptualization, contagion, and perceived similarity on children's reactions to a hypothetical peer with AIDS. Our investigation extended prior research by (a) more extensively differentiating the type of AIDS information to evaluate which might be most effective in altering children's reactions to a hypothetical peer with AIDS and (b) evaluating the impact on one's reactions of one's perceived similarity to the peer. Through vignettes, two variables were manipulated: (a) four levels of contagion information (how AIDS is transmitted; how AIDS is not transmitted; how AIDS is and is not transmitted; and no information about contagion) and (b) two levels of perceived similarity (similarity of preferences and interests matched between peer and subject; neutral information about the hypothetical peer). Illness conceptualization was measured as a continuous variable.

A main effect for contagion was predicted. Subjects receiving information about how AIDS is and is not transmitted were expected to have the most positive reactions towards a hypothetical peer with AIDS in comparison to those in the other contagion information groups. Children receiving information about how AIDS is not transmitted were predicted to have fewer positive reactions than those receiving all information, followed by those receiving only information about how AIDS is transmitted and those in the no information group. The ordering of conditions was based on the suggestion of prior investigations (DiClemente et al., 1990; Walsh & Bibace, 1990) that children need non-transmission information to dispel fears about contagion.

A disordinal interaction between contagion information and perceived sim-
ilarity was tentatively predicted. Subjects in the matched similarity group who received either all information about HIV transmission or information on how HIV is not transmitted were expected to be more accepting of the hypothetical peer than their counterparts in the neutral similarity condition. Conversely, children in the neutral similarity group were predicted to be more accepting than children in the matched similarity condition when they received no information about HIV transmission or only information on how HIV is transmitted. Prior research (e.g., Lerner & Agar, 1972, Novak & Lerner, 1968) has yielded a similar interaction in studies with adults. Our hypotheses involved a range of contagion information and the assumption that when children fail to understand that AIDS cannot be transmitted through casual contact with a peer, similarity to that peer is expected to increase perceived vulnerability and therefore decrease acceptance.

Finally, subjects at higher levels of illness conceptualization were anticipated to have more positive reactions to the peer than did those at lower levels. In addition, an ordinal interaction between contagion information and illness conceptualization was tentatively predicted. Children at higher conceptualization levels (compared to those at lower levels) were expected to better use contagion information to dispel fears, thus leading to more positive reactions toward the peer.

METHOD

Subjects

Subjects were 254 fourth-, fifth-, and sixth-grade students from schools selected for their range in socioeconomic status. Of the parental permission slips distributed, 52.4% were returned with a positive response and 11.0% were returned indicating a disinterest in their child participating in the study. One child did not give his assent in spite of parental consent and hence did not participate in the study. Nineteen children who had AIDS or knew someone who had AIDS were excluded from the study to control for direct experience, which has been documented as mediating children's responses to ill or disabled children (Siperstein & Chatillon, 1982; Zimet et al., 1991).

An attempt was made to balance for grade and sex with at least five boys and five female girls from Grades 4, 5, and 6 being placed in each of the eight vignette conditions. The mean age of the sample was 11.4, with a range of 9.0–13.9 years. Children identified themselves as white (84%), African American (14%), Hispanic (1%), or Native American (1%).
Stimulus Materials and Conditions

Vignettes depicting a hypothetical peer with AIDS were used. The peer was described as someone (same-sex and same-age) who might be coming to the subject's school. A Grade 4 readability level was estimated based on Fry's (1977) procedure. In the one-page vignette the factors of similarity and contagion information were manipulated.

Perceived Similarity

Two similarity conditions were employed: (a) matched interests and disinterests or (b) neutral information about the hypothetical peer. This information was drawn from a questionnaire, administered earlier, that was adapted from The Favorite Things Questionnaire (Siperstein & Chatillon, 1982). Our instrument consisted of 16 open-ended questions assessing such things as favorite sport, game, restaurant, movie, color, food, television program, school subject, song, aspect of school, animal at the zoo, and after-school activity. In addition, questions tapped children's least favorite school subject, what they would purchase with $10, their family constellation, and type of family pet (if any). Of these 16 items, 8 were included in the vignettes for subjects in the matched similarity group. The other 8 items served as back-up responses when either a child failed to answer an item in one of the eight areas included in the vignette, or gave a very salient response that could have resulted in the child becoming suspicious that the hypothetical peer's responses were not genuine. The neutral condition contained general statements (e.g., “I like to play a few sports,” “I like some school subjects better than others”).

Four items, each on a 5-point scale, were summed to form a composite rating of perceived similarity to the peer. The sum was used as a manipulation check. Sample items were “How much the same or alike are you to this child?” and “What chance is there that you and this child would like to do the same things?” Response options differed slightly among items (e.g., no chance, almost no chance, some chance, a good chance, a very good chance). Sums could range from 4–20 with higher sums indicating greater perception of similarity.

Contagion Information

In manipulating contagion, vignettes included (a) a statement about how AIDS is and is not transmitted, (b) a statement limited to how AIDS is transmitted, (c) a statement limited to how AIDS is not transmitted, or (d) no statement about contagion. Information was adapted from Fassler and McQueen's (1990) chil-
dren's workbook. Specifically, information about how AIDS can be transmitted included statements that a person can get AIDS from any of three modes: (a) sexual intercourse with a person infected with HIV, (b) sharing needles with a HIV-infected person, and (c) prenatal or perinatal transmission. Although there are a plethora of ways HIV cannot be transmitted, six modes of nontransmission were included in the vignettes. In particular, noncontagion information consisted of explanations to children that HIV cannot be contracted from drinking fountains; sitting next to, touching, or hugging an infected person; sharing food with a HIV-infected person; or visiting the home and playing with the toys of a person infected with HIV.

Nine items, each on a 5-point scale, assessed the impact of the contagion information in the vignettes. Three items concerned HIV transmission (e.g., "Do you think that a person who takes drugs through needles could get AIDS by using the same needles as someone with AIDS?") and six items assessed HIV nontransmission (e.g., "Do you think that you could catch AIDS if this child sneezed or coughed on you?"). As with the similarity manipulation check items, response options for contagion information differed slightly from item to item. Sums could range from 3–15 for transmission and 6–30 for nontransmission, with higher scores reflecting greater knowledge.

Dependent Measures

Illness Conceptualization

Three questions measured the subject's understanding of illness and health. The questions were "What does it mean to be healthy?", "What does it mean to be sick?", and "How do people get sick?" These items are based on the work of Bibace and Walsh (1980) and Perrin and Gerrity (1981). They were employed successfully to categorize children by Bloom (1988) and Santilli and Roberts (1993).

A standard clinical interview technique, as described by Perrin and Gerrity (1981), was employed to ensure the complete assessment of each child's understanding. Thus, the set probes of "Can you tell me more about that?" and "What else?" followed initial responses to the first two interview questions. In addition to these two general probes, another probe was utilized for the third question which assessed children's understanding of illness causation. More specifically, when a child would state a way that one becomes ill, he or she was then asked "How do you get sick from [insert mode of transmission stated by child]?" This probe continued to be used until the child could not further elaborate. This additional probe was introduced after several children in pilot studies expressed uncertainty about what was being asked of them when only the two other probes
were employed. By adding the third probe, less confusion was evident in the children's responses.

Each item was scored 0–6 according to the system developed by Bibace and Walsh (1980) and Perrin and Gerrity (1981) that distinguishes several conceptualization levels: phenomenism, contagion, contamination, internalization, physiologic, and psychophysiologic. A sum of the three items served as the illness conceptualization score. Possible scores ranged from 0–18, with higher scores indicating more sophisticated levels of understanding.

One fourth of the protocols were coded by a second rater who was blind to the purposes of the study. Both the original and second rater worked with audiotaped and written transcripts of each interview. The obtained agreement was .88, .91, and .89 for three questions.

**Acceptance of the Peer**

Children's reactions to the peer with AIDS in the various vignette conditions were assessed through a series of Likert-type items, each scored 1–5. These items were designed to tap affective (6 items, e.g., "How happy would you be about this child coming to your school?"); cognitive (6 items, e.g., "Do you think this child can make friends with others at your school?"); and behavioral (6 items, e.g., "Would you ask this child to come over to your house?") dimensions of their acceptance of this hypothetical peer. Items were adapted from previous work on children's attitudes toward ill and disabled peers (Potter & Roberts, 1984; Santilli & Roberts, 1993) as well as adults' and adolescents' perceptions of persons with AIDS (DiClemente, Zorn, & Temoshok, 1986; Kelly, St. Lawrence, Smith, Hood, & Cook, 1987). Because the correlations between the cognitive, affective, and behavioral sums were high (range = .70–.87), an additive composite of three areas was used in the analyses. Scores could range from 18–90 with higher scores reflecting greater acceptance. Coefficient alpha for the 18 items forming the sum was .94. See Table 1.

**Procedure**

Classroom teachers administered the similarity questionnaire during homeroom class. The children were told that their responses would help researchers better understand children's current likes and dislikes. Three to five weeks later, the remainder of the data for the study was collected. At that time, subjects were assigned to one of the eight vignette conditions using a stratified random procedure considering grade and sex.

A standard set of instructions was used for each subject. The study was described to children (and parents) as involving "thoughts about health and
illness as well as persons with AIDS." The subjects first were interviewed individually to assess illness conceptualization. The interview was conducted by the first author or another experimenter trained by the first author. Subjects were then given the appropriate stimulus materials to read. Subsequently demographic, manipulation check, and dependent variable items were completed individually by each subject. Data collection lasted approximately 30 minutes for each subject. No names were recorded on any of the data collected to ensure confidentiality. Each was coded with a subject number which was a function of the appropriate experimental condition. Upon completion of the questionnaire, a debriefing was conducted in which the subject was explicitly told that the child in the story was fictitious and then allowed to ask questions. Each child was requested to not disclose to other students for 4 weeks the information they received in the debriefing. Upon completion of the full study, parents who consented to their child’s participation were sent material on AIDS written by the Centers for Disease Control and Prevention.

RESULTS

Manipulation Checks

A 2 (Perceived Similarity) × 4 (Contagion Information) ANOVA was conducted on the similarity manipulation check sum. It revealed a main effect for perceived similarity in the expected direction, $F(1, 252) = 19.78, p < .001.$
Descriptively, children in the matched similarity condition felt more similar to the hypothetical peer \( M = 13.74, SD = 3.59 \) than did children in the neutral similarity condition \( M = 11.83, SD = 3.29 \). As anticipated, there was no significant main effect for contagion or significant interaction.

A 2 × 4 ANOVA was also conducted on the contagion information manipulation check sums. A main effect of contagion information was found on the sum of items tapping knowledge of transmission, \( F(3, 250) = 11.35, p < .001 \), and on the sum of items measuring nontransmission, \( F(3, 250) = 16.67, p < .001 \). Multiple range tests \( p < .05 \) were then conducted. Children who received both types of contagion information and children who received only the HIV transmission information were not different from one another on the transmission sum \( (M_s = 14.61, 14.62, SD_s = .75, .87, \text{ respectively}) \). However, each group was significantly greater than the group receiving only information about nontransmission \( (M = 13.71, SD = 1.36) \) and the no-information group \( (M = 13.83, SD = 1.48) \). The latter two conditions did not differ.

On the nontransmission sum, the subjects exposed to both types of contagion information and those receiving only nontransmission information scored similarly \( (M_s = 28.00, 27.95, SD_s = 2.45, 3.10, \text{ respectively}) \). Each group scored significantly higher than did the group receiving only information about transmission \( (M = 24.52, SD = 4.81) \) and the no-information group \( (M = 24.64, SD = 4.46) \). The latter two conditions did not differ. Taken together, these results indicate that the contagion information variable was successfully manipulated.

**Illness Conceptualization**

The mean of the illness conceptualization sum was 11.07 \( (SD = 1.99, \text{ range } = 7–18) \). The Grade 4 mean was 10.22; Grade 5, 10.95; and Grade 6, 12.00. The scores represent a more restricted range than anticipated. Descriptively, the fourth graders had concrete rules in which specific parent-like guidelines are associated with illness and illness is seen as being caused by physical contact. Children in this stage tend to see themselves as victims of illness “vulnerable to diverse insults from the outside world” (Perrin & Gerrity, 1981, p. 843). The sixth graders were characterized by internalization wherein the source of illness remains external but transmission occurs through some internal action (such as germs being breathed in or swallowed). The fifth graders fell between the two descriptions. Thus, the typical child in our sample was bound by concrete reality and was not able to fill in gaps in knowledge with hypotheses.

**Acceptance of the Peer**

Initially, a regression analysis on the acceptance sum was performed with the independent variables and their interactions as predictors. The regression was
used as it allowed for the inclusion of the continuous variable, illness conceptualization. Perceived similarity and contagion information were coded effect in the analysis. As no significant effects involving illness conceptualization were found, a conventional 2 x 4 ANOVA was then permissible. As anticipated, a main effect of contagion information on acceptance was found, \( F(3, 246) = 3.40, p < .02 \). See Table II for the means of the conditions. Neither the main effect of perceived similarity nor the interaction reached significance (\( p > .49, p > .15 \), respectively).

Multiple range tests (Dunn's procedure, \( p < .05 \)) were conducted to further examine the main effect for contagion described earlier. The two groups of children who received information about the ways HIV is not transmitted (i.e., children receiving all information about AIDS and children receiving only information about how HIV is not transmitted) were significantly more accepting than were either of the groups who did not receive this information, that is, children receiving no information about AIDS (\( dfs = 126, 125 \)) and children receiving only information about HIV transmission (\( dfs = 125, 124 \)). The two nontransmission conditions did not differ statistically (\( df = 125 \)). In addition, the transmission-only condition and the no-information condition were not statistically different from each other (\( df = 125 \)).

**DISCUSSION**

Information about how HIV is not transmitted appears to be a key factor accounting for differences in acceptance among groups of subjects. Subjects in the group receiving information on modes and nonmodes of transmission and the group of subjects receiving information limited to ways HIV is not transmitted were similarly accepting, where the groups of children receiving no information
about AIDS nontransmission had similarly lower ratings of acceptance of the hypothetical peer.

Prior pilot work had indicated that a substantial number of children had some knowledge of HIV transmission routes. Similar results were reported by Sigelman et al. (1993) and McElreath and Roberts (1992). In our study, informing children through the vignette about the three modes of transmission appeared to add little to their knowledge level. In a recent study, Osborne et al. (1993) found that providing both transmission and nontransmission information led to greater acceptance of a hypothetical peer with AIDS when compared to a no-information control group. Taken together, these results suggest that explanations about the ways that HIV is not transmitted (e.g., One cannot get AIDS by drinking from a water fountain or by playing basketball with a child with AIDS) may be responsible for increasing acceptance. It may be that information about how HIV is transmitted has little value for children in this age group since very few are likely to be engaged in behaviors such as sex or drug sharing. The behaviors featured in common myths about HIV transmission are more likely to be engaged in by children.

Though not directly tested, fear about contagion may be mediating children’s responses of acceptance, with lowered levels of fear leading to increased positive feelings about a peer with AIDS. This is consistent with DiClemente and his colleagues’ (1990) suggestion that understanding the ways that HIV is transmitted does not necessarily lead one to make clear inferences as to the ways HIV is not transmitted—a necessary step to reduce fears about contagion. DiClemente et al. emphasized the necessity of dispelling misconceptions about casual contact with people with AIDS to reduce needless apprehension.

A number of researchers have maintained that children’s continued misconceptions about HIV transmission stem from less sophisticated levels of cognitive development. Indeed, Osborne et al. (1993) found that illness conceptualization level related to acceptance. Our failure to corroborate may be due to the limited range of conceptualization scores in our sample, with the three grades being characterized by two concrete operational stages. Conversely, it is important to note that other investigators (Potter & Roberts, 1984; Santilli & Roberts, 1993) have also failed to find the developmental understanding-acceptance relation.

Although children in the matched similarity group did feel more similar to the hypothetical peer, they did not view the peer more negatively, as was expected from Novak and Lerner’s (1968) work. Past research involved a target person who was described as being either quite similar or very dissimilar to the subject. Perhaps, a significant interaction may have emerged in the current study had the hypothetical peer been described in more extreme ways. Certainly, additional study of Novak and Lerner’s theory applied to AIDS perceptions is warranted.

Two limitations of our study should be considered. First, just prior to the
study, Magic Johnson, the basketball star, announced being HIV-positive. As a result, acceptance scores may have been somewhat inflated since knowing someone with an illness or disability frequently results in more positive views of that particular illness or disability (Siperstein & Chatillon, 1982; Zimet et al., 1991).

Another concern is the representativeness of the sample. Similar concerns have been voiced by other researchers studying the AIDS issue (e.g., Catania, Gibson, Chitwood, & Coates, 1990; Siegel, 1993). In the present study, only those children whose parents gave consent were allowed to participate in the study. Thus, our sample may only represent children from families with more open and accepting views of people with AIDS. A comprehensive model of AIDS perceptions must include children whose families hold strong negative feelings as well as children who know someone with AIDS.

Our results have implications for AIDS curricula. Specifically, they indicate the need for AIDS educators to address misconceptions. Information about how HIV is not transmitted should be made relevant to the school age child, focusing on day-to-day events wherein the child may fear possibly being in contact with HIV. Important examples include informing children that they cannot get AIDS by drinking from the water fountain after someone with AIDS or by sharing toys with someone with AIDS.

In light of the fact that many schools have begun to employ AIDS education curricula, the effectiveness of these programs should be assessed. During the current study, a few of the participating schools claimed to have an AIDS education program. The amount and type of information provided in their curricula were largely at the discretion of each classroom teacher. However, when children were asked if they learned about AIDS in school, their responses frequently did not coincide with what the school personnel claimed to be doing. For example, in a given classroom that supposedly did not provide AIDS education, many of the children claimed otherwise. Hence, the extent to which children are obtaining information about AIDS through educational programs and their level of retention of AIDS information is unclear. Certainly any confusion has implications for children's perceptions of others with AIDS.

In conclusion, we found that the type of AIDS information given to elementary school age children affected their view of a peer with the disease. In the future, increasing numbers of children will come to know people with HIV. Providing prior comprehensive information about the illness may facilitate their full integration into the daily activities of childhood.

REFERENCES


