Knowledge and Attitudes of Occupational Therapy Students Regarding AIDS

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In this pilot study, knowledge regarding AIDS was tested in 36 occupational therapy students and 33 education students. Also measured were the students' attitudes toward AIDS patients and the resulting health care controversies. An analysis of the results revealed no significant differences in knowledge between the two groups. Attitudinal differences between the two groups, however, were significant for two items. Implications for occupational therapy curricula are discussed.

AIDS has gained much public attention through the popular media and has challenged the health care system with legal, moral, and social dilemmas. The surgeon general's report estimated that in 1991, 54,000 people in the United States will die from AIDS (Koop, 1986). Because occupational therapy students are more likely to interact with patients with AIDS and HIV than is the general public, they have a greater need for accurate information about AIDS.

The attitudes and stereotypes held by occupational therapists and fieldwork students will affect their ease in dealing with AIDS patients as well as their interest in and knowledge of the disease. Denton (1987) stressed that therapists who treat people with AIDS must be knowledgeable about the disease, which includes understanding its modes of transmission, its high-risk groups, and the precautions necessary for infection control. The occupational therapist, occupational therapy assistant, and fieldwork student may all be involved in the physical as well as the psychosocial assessment and treatment of persons with AIDS-related neuromotor and neuropsychiatric deficits.

Before this study was conducted, no information existed on the level of knowledge regarding AIDS held by students in occupational therapy programs or other fields of study.

The purpose of our study was to assess the knowledge and attitudes of occupational therapy students regarding AIDS, as compared with those of students in another field. We believe that such information can be used to suggest what curriculum changes, if any, are needed regarding the dissemination of AIDS information.

Health Care Workers' Attitudes Toward AIDS

The media have reported extensively about AIDS since its identification in the United States. This information explosion has resulted in a merging of fact and myth, in which people are still responding to old or incorrect information (Foster, 1987). Because AIDS was viewed initially as a disease that affected only high-risk groups (e.g., homosexuals, drug abusers, and Haitians), facts about the transmission of HIV have been confused with attitudes toward members of these high-risk groups (George, 1987). In addition, the AIDS crisis forced health care workers to confront three sensitive subjects: contagion, homosexuality, and death (McCutchan, 1986).

A 1983 survey taken in a large urban hospital measured the attitudes that 37 physicians and 91 registered nurses had toward homosexuality (Kalman, Kalman, & Douglas, 1985). All of the subjects indi-
cated that, in the course of their job responsibilities, they had cared for a male homosexual with AIDS. The survey consisted of a 5-point scale ranging from strongly agree (1) to strongly disagree (5). A total score of 50 or above indicates homophobia. The scores in this 1983 survey ranged from 21 to 100. The survey results showed that both the physicians and the nurses (with no significant difference between the two) fell within the low-grade homophobic range. Nearly 10% of the respondents agreed with the statement, "Homosexuals who contract AIDS are getting what they deserve." Thirty-two percent of the respondents agreed with statements that patients with AIDS received inferior care in hospitals and that they felt more negatively about homosexuality since the emergence of the AIDS crisis. When the study was repeated in 1986 with a statistically similar population, only 3% of the respondents agreed with the statement, "Homosexuals who contract AIDS are getting what they deserve" (Kalman, Kalman, Connelly, & Perry, 1987). This finding showed that attitudes toward AIDS patients had noticeably improved in just 3 years. Kalman et al. said that these changes demonstrate that "medical staff attitudes are both state and trait phenomena and are therefore best assessed and reassessed over time" (p. 996). In other words, while some aspects of attitudes are relatively stable (trait), others are a function of temporal influences (state) and are therefore subject to change.

In a 1986 study of four New York residency programs, 36% of the medical house officers and 17% of the pediatricians in the study reported needle-stick exposure to the blood of AIDS patients (Walters, 1988). Twenty-five percent of the study respondents would not continue to care for AIDS patients if given a choice. Likewise, a 1984 survey of nurses at the Westchester County Hospital in New York indicated that 39% would ask for a transfer if they had to care for AIDS patients regularly (Blumenfield, Smith, Mazzio, Seropian, & Wormser, 1987).

Kelly, St. Lawrence, Smith, Hood, and Cook (1987), in their survey of 2nd- and 3rd-year medical school students, found that the students viewed AIDS patients and homosexual patients, regardless of their illness, more negatively than they viewed heterosexual or non-AIDS patients. These students were far less willing to interact casually with an AIDS patient than with a leukemia patient, even though the activities involved no risk for HIV exposure, on the basis of the Centers for Disease Control's guidelines. The students indicated on a Likert-type scale (strongly agree [1], strongly disagree [7]) their degree of agreement or disagreement with the survey statements. They indicated that they believed that AIDS patients were more deserving than leukemia patients of their illness ($M = 4.69$) and were more deserving to die ($M = 1.75$), to lose their jobs ($M = 2.50$), and to be quarantined ($M = 2.60$).

**Occupational Therapy and the Treatment of Patients With AIDS**

Occupational therapy personnel are trained to treat the physical and psychosocial deficits resulting from AIDS for all age groups (Staff, 1988). AIDS dementia complex is now known to be a common cause of death in patients in the advanced stages of infection. Neurological symptoms develop in 30% to 40% of all AIDS patients (Goldmeier, 1987). These symptoms are caused by HIV itself and not by secondary opportunistic infections. The symptoms of AIDS dementia complex include (a) slowing and loss of precision in mentation and motor control; (b) loss of interest in work, social, and recreational activities; (c) increasing apathy; (d) slowing of speech and mental impoverishment; (e) near or absolute mutism; and (f) severe dementia. HIV invades the central nervous system early in the course of systemic infection and can exist even in the absence of the above symptoms (Price et al., 1988). According to Goldmeier (1987), the principal psychosocial problems affecting a person with HIV are the bereavement process, organic brain disease, and social problems resulting from society's reaction to the disease.

For adults with AIDS, occupational therapy addresses the dysfunctional occupational roles and necessary adjustments and the psychosocial problems that arise from being out of work (Pizzi, 1988). For infants born with AIDS, occupational therapy addresses gross psychomotor retardation and behavioral problems (Goldmeier, 1987; Price et al., 1988). For children with AIDS, occupational therapy addresses play and self-concept (Pizzi, 1988).

AIDS in children of high-risk parents (e.g., intravenous drug users and their sexual partners, bisexuals and their sexual partners) usually presents between the ages of 1 and 21 months. In addition to the other diagnostic criteria (i.e., presence of HIV antibodies and opportunistic infections), the major symptom in children is failure to thrive (Elias-Jones, Larcher, & Price, 1987). Seventy-five percent of the children infected perinatally have progressive encephalopathy, microcephaly, or both, resulting in gross psychomotor retardation, behavioral problems, or both (Goldmeier, 1987).

The American Occupational Therapy Association (AOTA) has begun to address the legal, professional, and ethical responsibilities of occupational therapy personnel regarding employees and patients with AIDS, stressing the importance of a current and factual medical knowledge base. According to AOTA's general counsel, "the two most critical issues confronting occupational therapy personnel when treat-
ing patients are confidentiality, and the potential for discrimination by therapists who may refuse to treat HIV infected patients” (Steich, 1987, p. 17).

Assumptions and Limitations

Theorists have long disagreed on the conceptualization of attitudes, and the relationship between attitudes and knowledge for the purposes of systematic study is still debated (Kiesler, Collins, & Miller, 1969). For the purpose of the present study, the operational definitions of attitudes and knowledge are contained in the measurement instruments. Furthermore, no specific relationship between the two is posited. We believe that both are relevant to the topic of AIDS within occupational therapy curricula.

Our beliefs regarding knowledge and attitudes were as follows:

1. Occupational therapy students will be more knowledgeable about AIDS than will students in a non-health-related field.
2. Occupational therapy students will have a more favorable attitude toward AIDS patients than will students in a non-health-related field.

Method

Subjects

A convenience sample of 36 junior-level occupational therapy students and 33 junior- and senior-level education majors at the Denton campus of Texas Woman’s University were surveyed. Because the university does not offer undergraduate course work in the non–health sciences to men, we limited the sample to women. We decided to use junior-level students for two reasons: We assumed that they were advanced enough in their academic studies to be committed to their career choices, and that they would not yet have received AIDS education, which is part of the senior-level curriculum.

Instrument

The questionnaire used in the study had two distinct components. The first consisted of a short test (55 questions) on facts about AIDS. This test, the National AIDS Awareness Test (Metropolitan Life Insurance Company, 1987), is used to survey the general public. It is criterion referenced and not a standardized or validated instrument. We chose it because of its simplicity and brevity.

The second component consisted of six attitudinal statements regarding AIDS patients and their care. The statements were rated on a 5-point Likert-type scale ranging from most negative (1) to most positive (5) (Cox & West, 1986). As with the knowledge portion of the study, no validated attitudinal scales were available, so we constructed this section on the basis of the literature. We also tabulated the sources from which the subjects obtained most of their information and the number of subjects who expressed a need for more information on AIDS.

Procedure

We obtained permission to administer the survey to classes in which the majority of junior-level occupational therapy and education majors would be enrolled, because we felt administering the survey in the classroom would improve the chances of a high response rate. Participation in the survey was voluntary, but no one refused to participate. The participants recorded all of their answers on scan-trons (computer-graded examination forms for multiple-choice examinations) for ease of scoring.

Four classes (two in each field) were surveyed, with a total of 54 education students and 36 occupational therapy students. Because of the large mix of students in the education classes, the students were requested to indicate their classification; from this, we planned to assess only the junior-level students. Only 20 students, however, indicated that they were junior-level education majors. Because the mean knowledge and attitudinal scores of the 20 juniors and the 13 seniors did not differ significantly ($t(31) = 0.08, p = .933$), we combined their scores to more closely equate the sample sizes. Thus the actual sample size for the education students was 33.

Results

The nonparametric Mann Whitney $U$ test for two independent samples was used, because assumptions underlying the parametric $t$ test could not be met. Because the hypotheses were directional, we used one-tailed tests to assess significant differences between groups above and below the median (Siegel & Castellan, 1988). When the sample size is large ($>20$), the $U$ value is converted to a $z$ score and compared to the normalized probability tables.

No difference in knowledge between the two groups of students was found ($z = .876, p < .19$). Thus, our belief that occupational therapy students would be more knowledgeable about AIDS than would students in a non-health-related field was not supported. The sources from which respondents received their information on AIDS were similar for the two groups. Seventy-nine percent of the respondents obtained their information from the media, 14% from public health publications, 5% from word of mouth, and 5% from classes and seminars specifically about
AIDS. Thirty-three (92%) of the occupational therapy students and 20 (61%) of the education students expressed a need for more information regarding AIDS.

The results of the statistical analyses of the attitudinal scales are shown in Table 1. Although mean scores were not used in this particular statistical analysis, they are included as a means of comparison. Each scale was analyzed separately. Two of the scales yielded a significant result, with the occupational therapy students demonstrating more agreement with the statement that health care workers have a right to refuse to treat AIDS patients (occupational therapy students, 58%; education students, 45%). On the other hand, the occupational therapy students indicated more disagreement with the statement that AIDS patients should be quarantined (occupational therapy students, 72%; education students, 55%).

Discussion

Despite the study's limitations of the use of only women and the use of nonstandardized instruments, some tentative conclusions are warranted regarding occupational therapy students' knowledge of and attitudes toward AIDS and AIDS patients.

Knowledge

The occupational therapy and education students did not differ in their knowledge regarding AIDS. Because both groups obtained their AIDS information primarily from the media, this finding is not surprising. The test used to assess knowledge had been designed for the general public. If the information had been more specific to the health care field, perhaps there would have been a difference between the occupational therapy and education students.

Comparisons of three similar items from the National Center for Health Statistics' August 1987 National Health Interview Survey (Fineberg, 1988), the Metropolitan Life Insurance Company's National Aids Awareness Test (1987), and the education and occupational therapy students' results from the present study show that the students from both groups better understand the transmission of AIDS than does the general public (see Table 2).

Attitudes

The attitudes of health care professionals can affect the attitudes of other people and can affect the quality of care given to AIDS patients or to patients suspected of having AIDS. Although the literature discusses the attitudes of occupational therapy personnel toward persons with disabilities (e.g., Benham, 1988), we assumed a difference between disabling conditions that are both communicable and fatal (e.g., AIDS) and those that are not (e.g., genetic disorders). We believed that as the incidence of AIDS in persons not considered to be in high-risk groups increases, occupational therapy personnel might view themselves as more vulnerable to contracting AIDS and thus manifest more empathy and attitudinal changes in others. Although our study did not test this belief, perhaps future studies could.

On one of the items in which there was a significant difference, the occupational therapy students' attitudes were more positive than those of the education students (i.e., that AIDS patients should not be quarantined). The other statement regarding the right to refuse to treat AIDS patients, for which the occupational therapy students showed a more negative attitude, elicited a response that can be interpreted in two ways due to the statement's ambiguity. Although the occupational therapist indeed has the right to refuse to treat any patient and a refusal to treat an AIDS patient might be nothing more than an exercise of that right, such a refusal might also mask fear of contracting the disease or of contact with homosexuals.

The results of this study might be biased due to

Table 1
Comparison of Occupational Therapy Students' and Education Students' Attitudes Toward AIDS Patients

<table>
<thead>
<tr>
<th>Statement</th>
<th>Occupational Therapy Students (n = 36)</th>
<th>Education Students (n = 33)</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current infection control precautions are sufficient to protect a health care worker from AIDS.</td>
<td>2.38&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.30&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.384</td>
<td>.56</td>
</tr>
<tr>
<td>Health care workers have a right to refuse to work with AIDS patients.</td>
<td>2.44&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.03&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.850</td>
<td>.06</td>
</tr>
<tr>
<td>Health care workers who work with AIDS patients should not work with non-AIDS patients.</td>
<td>3.69&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.15&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.400</td>
<td>.06</td>
</tr>
<tr>
<td>AIDS patients are not necessarily responsible for their illness.</td>
<td>3.94&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4.03&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.264</td>
<td>.80</td>
</tr>
<tr>
<td>All AIDS patients should be quarantined.</td>
<td>4.06&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.57&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.590</td>
<td>.05</td>
</tr>
<tr>
<td>Public funding should be provided to help care for AIDS patients who may no longer support or care for themselves.</td>
<td>3.52&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.33&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.660</td>
<td>.25</td>
</tr>
</tbody>
</table>

<sup>a</sup> A 5-point scale was used, strongly disagree (1) to strongly agree (5). <sup>b</sup> A 5-point scale was used, strongly agree (1) to strongly disagree (5).

<sup>c</sup> Statistically significant with a one-tailed test.
the exclusive use of women as subjects. More testing is needed with a larger sample more representative of the population of practicing occupational therapists. Future studies should include men in both the occupational therapy and non–occupational therapy subject groups.

Both groups were given the opportunity to request feedback about their test results by signing their names on their papers. Only 36% of the occupational therapy students and 20% of the education students requested feedback on their test results.

Status of AIDS Policies
Increased public awareness of AIDS has led to public positions and policies. For example, President Reagan's AIDS commission issued an interim statement that identified four critical areas for immediate investigation: (a) the lack of low-cost hospices or home-based care for AIDS patients, (b) the scarcity of drugs to fight the disease, (c) the shortage of treatment programs for intravenous drug users, and (d) the lack of precise figures on the epidemic's extent (Gorman, 1987). One would hope that concerns about AIDS will become expressed in public policy at the federal level and will gain the support necessary for effective implementation. Current and proposed legislation regarding confidentiality and protection of rights for AIDS patients has begun to appear in some states, including Massachusetts, New York, Utah, California, Hawaii, Florida, Colorado, and Texas (Randall, 1988). Additionally, as of December 1987, 17 states and the District of Columbia require AIDS instruction in schools, and 21 states have developed curricula guidelines regarding AIDS instruction in public schools (Painter, 1987).

Implications for Occupational Therapy Curricula
Many feel that until a cure is found, the most effective weapon against AIDS is education (Foster, 1987). The chairman of the editorial board of the Journal of Medical Education said that "every medical center needs to review carefully its own program for treating AIDS patients and consider its preparation of students and house staff members to deal with these unfortunate individuals" (Bowles, 1987, pg. 541).

The U.S. Public Health Service sent an eight-page AIDS booklet, Understanding AIDS, to every household in the United States. It explains in simple but frank language exactly how AIDS is and is not transmitted (Bowen, 1988).

Education may indeed have a positive effect. For example, Wertz, Sorenson, Liebling, Kessler, & Heeren (1987) found positive results when they evaluated the effects of an education program on knowledge and attitudes toward AIDS in 1,247 health care providers. A 1-month follow-up study indicated that the changes had been maintained. However, only 159 of the original subjects chose to participate in the follow-up study and thus were self-selected volunteers, some of whom had cared for AIDS patients and therefore may have been more knowledgeable originally.

In recent articles in the occupational therapy literature, therapists have presented excellent discussions of important issues for therapists working with AIDS patients (e.g., Denton, 1987; Pizzi, 1988; Schindler, 1988). They addressed fears associated with contagion and association with an out-group such as homosexuals. Schindler (1988) suggested that therapists may need to reassess their own beliefs and may overidentify with patients, thus losing objectivity. She recommended education, peer support groups, and sensitive supervision to deal with the psychosocial needs of therapists who treat these patients.

Addressing the cognitive, psychosocial, and cultural needs of both the occupational therapist and the patient regarding any area of practice is a process requiring time and attention. Occupational therapy curricula should provide students with the opportunity to begin that process prior to clinical experience with AIDS patients.

Summary and Recommendations
This survey did not differentiate a significant difference in knowledge regarding AIDS between educa-

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**Table 2**

Respondents' Agreement With Similar Statements From a Sample of AIDS Surveys (in %)

<table>
<thead>
<tr>
<th>Statement</th>
<th>NCHS*  (n = unknown)</th>
<th>Metropolitan Lifeb (n = unknown)</th>
<th>Education Students (n = 33)</th>
<th>Occupational Therapy Students (n = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS can be contracted by sharing eating</td>
<td>47</td>
<td>23</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>utensils.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The AIDS virus is transmitted by mosquitoes.</td>
<td>38</td>
<td>45</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>You can get AIDS by donating blood.</td>
<td>25</td>
<td>29</td>
<td>33</td>
<td>8</td>
</tr>
</tbody>
</table>

*Note. NCHS = National Center for Health Statistics; Metropolitan Life = Metropolitan Life Insurance Company.
* From the National Center for Health Statistics' National Health Interview Survey (Fineberg, 1988).
* From the Metropolitan Life Insurance Company's National AIDS Awareness Test (1987).
tion students and occupational therapy students. Results of the attitudinal scales also produced limited and ambiguous indications of differences between the two groups.

The population of patients with AIDS is growing, and the need for occupational therapy intervention is evident. This intervention, however, must be provided by therapists who are knowledgeable about the disease and who have dealt with and resolved personal issues that challenge existing values and attitudes. Occupational therapy curricula should address not only the need for accurate information but also the need for a framework within which to face the important value issues. ▲

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