

Attitudes of School Environment towards Integration of HIV-Positive Pupils into Regular Classes and Knowledge about HIV/AIDS: Cross-sectional Study

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Aim	To estimate the attitudes of teachers, parents, and pupils in primary schools towards the integration of HIV-positive pupils into regular schools, and their knowledge about HIV/AIDS.
Methods	Teachers (n=64), seventh and eight grade pupils (n=108), and their parents (n=124) from a big city and a small town in Croatia were examined by two specially designed instruments which measured their attitudes towards the integration of pupils with HIV/AIDS and knowledge about HIV/AIDS.
Results	All three populations showed positive attitudes towards the integration of children with HIV/AIDS into regular schools. A group of parents had lower attitude score (mean±standard deviation, 3.1±0.6) compared with teachers or pupils (3.5±0.4 and 3.4±0.4 respectively, $P<0.001$, ANOVA, and <i>post hoc</i> Tukey test). Knowledge about HIV/AIDS was high in all three groups. Pupils scored lower (8.2±4.1 out of maximum 15) than their teachers or parents (11.2±3.8 and 10.3±3.5 respectively, $P<0.001$). In all three subsamples, groups with higher level of education had more positive attitudes towards the integration of children with HIV/AIDS into regular schools as well as higher knowledge scores. No significant correlation was found between participants' attitudes and knowledge.
Conclusion	School environment – teachers, pupils, parents – had generally positive attitudes towards the integration of HIV positive pupils and high level of knowledge about HIV/AIDS. Generally, parents showed less favorable attitudes than teachers and pupils and this may be a possible obstacle to the integration of HIV positive students into regular schools. There is obviously a need for a coordinated public intervention aimed at informing the public about HIV/AIDS.

Attitudes of the social environment have an important role in the integration of people living with HIV/AIDS into the community (1). There is a physical and functional aspect to the social integration, meaning that people living with HIV/AIDS are not only physically present in the community but also function as its equal members (2). The school environment can serve as a basis for the development of positive attitudes towards the integration of people living with HIV/AIDS (3). In this way, integration of not only children with HIV/AIDS but also of all persons with special needs becomes natural for children with and without special needs (4).

Living with HIV/AIDS is a unique problem because patients have to deal not only with the disease itself but also with reactions from their environment (5). The specific way of transmission leads to stigmatization of HIV/AIDS patients and their direct social environment (family, peers, school). This also induced changes in values and moral beliefs in the society (6).

The Croatian and European public was alerted to an incident in 2002 and 2003 in which parents of primary school pupils had refused to accept an HIV infected girl into the same class with

their children. The same situation occurred the following year when the girl moved to another town (7). These situations showed prejudice and low level of knowledge about HIV/AIDS (8).

In Croatia, there was no research investigating the attitudes of teachers, pupils, and parents towards HIV positive pupils in regular classes. In this research we tried to get insight into the attitudes of school environment towards the integration of HIV positive pupils, as well as to the level of general knowledge about HIV/AIDS today.

Subjects and Methods

Sample

The study sample consisted of 64 teachers, 108 pupils, and 124 parents from 2 regular primary schools in Croatia (Table 1). Schools were selected by the place of residence; one school from a small town (Nova Gradiška) and one school from the Croatian capital (Zagreb). All teachers from both schools were included in the study. They filled out the questionnaires during their free time in the teachers' room. Randomly chosen seventh and eighth grade pupils filled out the questionnaires during regular classes. Their parents filled out the questionnaires at home and children brought them back the following day.

Demographic data was taken for each sample: place of residence (smaller town or city), age, gender, level of education, and employment status in the sample of parents and teachers.

Table 1. Characteristics of respondents in the study

Variables	No. (%) of subjects		
	teachers	pupils	parents
Place of residence:			
Zagreb	34 (54)	55 (51)	47 (38)
Nova Gradiška	30 (46)	53 (49)	77 (62)
Sex:			
male	12 (19)	61 (56)	58 (47)
female	52 (81)	47 (44)	66 (53)
Education:			
7th grade for pupils		54 (50)	
8th grade for pupils		54 (50)	
not finished primary school			3 (2)
primary school			33 (27)
high school	1 (1)		66 (54)
2-3 years of college	33 (52)		9 (7)
higher education	30 (47)		12 (10)
Age:			
≤25	1 (2)		
26 to 30	7 (11)		25 (20)
31 to 35	8 (12)		46 (37)
36 to 40	11 (17)		34 (27)
41 to 45	10 (16)		13 (11)
≥46	27 (42)		6 (5)

Questionnaires, Variables, and Item Selection

We developed two instruments: "Attitudes towards integration of HIV positive pupils in regular classes" and "What do I know about HIV/AIDS?"

The attitude questionnaire was a 5-point Likert type scale (1 – strongly disagree, 2 – disagree, 3 – undecided, 4 – agree, and 5 – strongly agree) which originally contained 21 items for teachers and pupils and 22 items for parents. Differences in these populations prompted us to adjust the statements included in each form of the questionnaire, therefore the three versions of the questionnaire slightly differed in their content. However, the content of the questionnaires was comparable across groups, which was confirmed by factor analysis (data not shown).

We performed discriminant validation of the items, examining inter-item correlations and the correlations between the score on an item and the total score (item-total correlation). Items with either item-total correlation and inter-item correlations close or equal to zero, which implied that the item did not belong to the scale, or with very high correlation with another item, which implied tautology (9), were excluded from the scales.

Three items from the teachers' and pupils' attitude scale and five items from parents' scale were excluded, because they did not satisfy the chosen criteria. Reliability of all three instruments was satisfactory (Cronbach α was 0.82 for the teachers' scale, 0.86 for the pupils' scale, and 0.92 for the parents' scale). The final versions of the questionnaire contained 18 items on the pupils' scale and 17 items on the teachers' and parents' scales (Table 2). For the purpose of easier comparability, and taking into account differences in length of the three instruments, the total scores were calculated as averages.

The second instrument was a 15-item knowledge test, the same for all three samples, which contained 12 True/False/Not sure questions and 3 multiple choice questions. The participant got one point for each correct answer, and lost a point for each incorrect answer, whereas undecided answers in the first 12 questions brought no points.

This test was constructed to investigate the level of participants' knowledge about HIV

Table 2. Attitude questionnaires towards the integration of HIV positive pupils

Teachers' attitude questionnaire towards the integration of HIV positive pupils in regular classes:	
1	Communing with other pupils is good for socialization of an HIV positive pupil.
2	Teachers will be preoccupied with an HIV positive pupil and ignore other pupils in the class.
3	I wouldn't like to have an HIV positive pupil in my class.
4	I think that an HIV positive pupil couldn't attend regular classes because of his or her medical problems.
5	I think that an HIV positive pupil, as a source of possible infection, can't attend regular classes.
6	A pupil with HIV can accomplish school success like all other pupils.
7	An HIV positive pupil can participate in with others all school activities.
8	I think that an HIV positive pupil couldn't master regular syllabus.
9	It will be the best that an HIV positive pupil attends classes separately from other pupils.
10	A Pupil in a regular class can have an HIV positive pupil for a friend.
11	For the acceptance of HIV positive pupil into a regular class, teachers should be educated about what to do if a person gets in touch with the infected blood.
12	I could prepare pupils in my class to accept an HIV positive pupil reasonably.
13	An HIV positive pupil needs constant medical help in school.
14	I want to know more about medical problems of HIV positive people.
15	Integration of an HIV positive pupil in regular classes is good for his or her personal progress.
16	An HIV positive pupil can participate with others in every play activity.
17	I could prepare my class to accept an HIV positive pupil like a friend.
Pupils' attitude questionnaire towards the integration of HIV positive pupils into regular classes:	
1	I would like to be in company of an HIV positive pupil.
2	An HIV positive pupil needs to participate in every play activity.
3	An HIV positive pupil can infect me easily.
4	I would invite an HIV positive pupil to my home to play.
5	An HIV positive pupil can have the same hobbies like everyone else.
6	An HIV positive pupil could be my best friend.
7	I wouldn't like that an HIV positive pupil goes into my class.
8	I would sit next to an HIV positive pupil.
9	I would invite an HIV positive pupil to my birthday party.
10	I would defend an HIV positive pupil if others were rude to him or her.
11	I wouldn't shake hands with an HIV positive pupil.
12	I wouldn't mind if an HIV positive pupil went to a school trip.
13	I would always help an HIV positive pupil if he or she needed help with homework.
14	It would be the best if an HIV positive pupil did not attend school with others.
15	I would like to make friends with an HIV positive pupil.
16	I would help an HIV positive pupil if he or she got hurt.
17	An HIV positive pupil could easily infect other pupils in class.
18	I would like to attend school lectures about HIV/AIDS.
Parents' attitude questionnaire towards the integration of HIV positive pupils into regular classes:	
1	I think that an HIV positive pupil cannot attend regular classes because of his or her medical problems.
2	I wouldn't like that my child goes to (the same) class with an HIV positive pupil.
3	Being with other pupils is good for socialization of an HIV positive pupil.
4	School environment can be prepared to accept an HIV positive pupil.
5	It will be better for an HIV positive pupil to attend classes separately from other pupils.
6	I would be worried if my child would invite an HIV positive pupil home to learn together.
7	An HIV positive pupil should participate in all school programs with others.
8	I wouldn't like my child to have an HIV positive pupil as a best friend.
9	I wouldn't like my child to play with an HIV positive pupil.
10	I wouldn't like my child to sit next to an HIV positive pupil.
11	I wouldn't like my child to invite an HIV positive pupil home to play.
12	Integration of HIV positive pupil into regular classes is useful for his or her personal progress.
13	I wouldn't like an HIV positive pupil to shake hands with my child.
14	School environment can be prepared to accept HIV positive pupil.
15	I wouldn't let my child to go to the same school with an HIV positive pupil.
16	I should be informed about HIV status of a pupil who goes into same class with my child.
17	I wouldn't let my child to go to a school trip with an HIV positive pupil.

and AIDS, the difference between these two terms, as well as about their way of transmission, prevention, time of first appearance, and possibilities of cure (Table 3). Cronbach α for the test across all three subsamples was 0.70.

Statistical Analysis

Pearson's correlation coefficients were used as indicators of item-total and inter-item cor-

relations, as well as for investigating the association between total attitude and knowledge scores, between age and attitudes or knowledge for parents and teachers. Cronbach α was used as a measure of internal consistency. Principal components analysis was used to confirm the structure of the attitude questionnaire.

Analysis of variance was used to investigate differences in attitudes and knowledge be-

Table 3. Knowledge tests about HIV/AIDS

HIV is: behavior disorder; virus*; mental deficit; disease
Mother to child transmission during childbirth is possible. (T)
Transmission is possible by hugging. (F)
HIV causes weakening of the immune system. (T)
HIV can be cured. (F)
Transmission is possible through sexual activities. (T)
When was HIV discovered? 1830; 1890; 1980*; 2000
Using condoms decreases the risk of HIV-infection. (T)
AIDS is: behavior disorder; disease*; mental deficit; virus
HIV is the same as AIDS. (F)
HIV can be transmitted by shaking hands. (F)
Transmission is possible during pregnancy. (T)
It is possible to get HIV by using the same toilets, bathrooms, and saunas with HIV infected people. (F)
It is possible to get HIV by kissing. (F)
HIV can be transmitted by sneezing and coughing. (F)

*Correct answer; T – true; F – false.

tween the three groups, whereas t-tests were used to investigate differences within groups based on their place of residence or education. The α -level was set at 0.05. Statistical analysis was performed with SPSS Software version 11.5 (SPSS Inc, Chicago, IL, USA).

Results

The participants showed positive attitudes towards the integration of children with HIV/AIDS into regular schools. The comparison of the total scores between the three groups revealed somewhat lower attitudes in the group of parents (Table 4).

We found no statistically significant differences in any of the subsamples according to the place of residence. However, teachers with a university degree had lower attitudes than teachers with a college degree (3.3 ± 0.5 vs 3.6 ± 0.4 , $P=0.034$, *t* test) indicating that teachers who work with younger children have more positive attitudes. One teacher was omitted from the analysis because he or she had lower educational status. There were no differences in attitudes between seventh and eight grade students, as well as between parents with different educational status.

Knowledge about HIV/AIDS was high in all three groups, with pupils showing a lower level

of knowledge than their parents or teachers (Table 4).

Place of residence was a discriminating variable for knowledge about HIV/AIDS in groups of parents and pupils. In both groups, the participants from the small town had lower score on the knowledge test (9.6 ± 3.7 vs 10.9 ± 3.2 for parents, $P=0.047$; 6.8 ± 4.6 vs 9.6 ± 3.0 for pupils, $P<0.001$, *t* test).

Parents with a college or university degree had higher scores than parents with only high-school or primary school, whereas the two other groups did not significantly differ between each other (12.5 ± 2.7 , 10.1 ± 3.1 , and 8.5 ± 4.0 respectively, $P<0.001$, ANOVA and Tukey post-hoc). Similarly, teachers with a university degree had higher scores than their colleagues with college degree (12.4 ± 3.4 vs 10.4 ± 3.8 , $P=0.036$, *t* test). Eighth grade pupils also scored higher on the knowledge test than seventh graders (9.3 ± 3.4 vs 7.1 ± 4.4 , $P<0.001$, *t* test).

We found no significant correlation between participants' attitudes and knowledge (data not shown). We also did not find any correlation between parents or teachers age and attitudes or knowledge.

Discussion

The participants in our study showed positive attitudes towards the integration of children with HIV/AIDS into regular schools. Parents showed significantly lower attitudes than other groups. This finding could explain the recent incident which happened in 2002 and 2003 when parents did not let their first grade children to attend school with an HIV positive girl (7).

Teachers with a university degree had lower attitudes than teachers with a college degree. Teachers with a college degree work with younger pupils (first to fourth grade) and therefore may be more sensitive and emphatic about the problems of the first grade HIV-positive pupil in Croatia.

Table 4. Attitude towards the integration of HIV positive pupils into regular classes and knowledge about HIV/AIDS of primary school teachers, pupils and their parents

Instrument	Possible range	Total scores (mean±standard deviation)		
		teachers (n=64)	pupils (n=108)	parents (n=124)
Attitude scale	1 to 5	3.5±0.4	3.4±0.4	3.1±0.6*
Knowledge test	-15 to 15	11.2±3.8	8.2±4.1†	10.0±3.5

*Statistically significant difference from teachers and pupils ($P<0.001$, ANOVA and Tukey post-hoc).

†Statistically significant difference from teachers and parents ($P<0.001$, ANOVA and Tukey post-hoc).

Knowledge about HIV/AIDS was high in all three groups, with pupils showing lower levels of knowledge than their parents or teachers. These results may be related to public discussion and general education about HIV/AIDS and education about human rights in Croatia.

As expected, higher education also meant better knowledge about HIV/AIDS. In that context, we found that parents with a college or university degree had higher scores than parents with only high school or primary school, teachers with university degree had higher level of knowledge than their colleagues with college degree, and eighth grade pupils had a higher level of knowledge than seventh grade pupils.

Our study showed that not only the level of education but also the place of residence is a correlate of the knowledge about HIV/AIDS. Parents and pupils from a small town had lower score on the knowledge test than participants from the capital city. The higher level of knowledge in the city could be the result of greater availability of information than in small towns. Therefore, it is important to increase the level of decentralization of education so that information can be accessible to everyone.

Our study suggests that there was no statistically significant correlation between knowledge and attitudes. This is not in accordance with the studies which showed that higher knowledge was strongly associated with more positive attitudes towards people with HIV/AIDS (6,9,10). Similarly, higher knowledge was also shown to be associated with less discrimination and stigmatization of the people living with HIV/AIDS (11).

There are several limitations to this study. Firstly, because target populations were different, we had to employ somewhat different forms of questionnaires for each of the subsamples. Although we made the content of the three versions as similar as possible and the items that were supposed to group together as factors based on content analysis did so when we performed principal component analysis, comparisons of the results obtained in our three subsamples need to be taken with caution. The aim of future research should be directed to the construction of an instrument applicable to all subpopulations. The second limitation is a relatively small sample. However, this study was a result of a recent public incident

(7), and as such gives enough insight into the Croatian situation at the time.

Positive attitudes of our participants may be due to the media interest, which was raised immediately before this study. This leads us to conclude that more public discussion, which would provide information about this sensitive issue, is needed to make the Croatian population more sensitive to the problem of HIV-positive persons in society. Also, not only people living with HIV/AIDS but all "different" people should be accepted in their communities with dignity and care. The incident that happened in Croatia showed that fear is still the most dangerous enemy, which can only be overthrown if people work together towards a more positive and educated community.

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