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University of Zimbabwe

HIV/AIDS knowledge and attitudes amongst pharmacists in Zimbabwe

D E BALL, P MAZARURWI

Objective: To examine the knowledge of HIV/AIDS amongst pharmacists in Zimbabwe.

Design: Cross sectional survey.

Setting: National survey of pharmacists in major urban areas and final year pharmacy students at the University of Zimbabwe.

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Subjects: 250 pharmacists and 47 pharmacy students with 126 completed questionnaires returned (42,4%).

Interventions: The questionnaire asked for demographic details of the respondent, sources of knowledge about HIV/AIDS and measured knowledge (KW), fear of contagion (FC), negative emotions (NE) and professional resistance (PR) using a Likert scale of 1 to 5.

Main Outcome Measures: Computed scores of KW, FC, NE and PR and reported sources of knowledge on HIV/AIDS.

Results: All pharmacists scored highly on KW (mean [SEM] = 4.0 [0.0] with academics scoring the highest (4.2 [0.5]; n = 7) and private hospital pharmacists the lowest (3.7 [0.2]; n = 5). Medical books/journals and professional colleagues were the most important sources of information. Scores for FC (2.7 [0.1]), PR (2.4 [0.1]) and NE (2.1 [0.1]) were low. Government hospital pharmacists tended to have a higher KW score than those in private hospitals (4.1 [0.3] vs 3.7 [0.2] respectively). Most of the respondents believed that HIV/AIDS had increased their workload. However, they saw a role for pharmacists in the prevention and management of HIV/AIDS but felt there were important time constraints.

Conclusion: Pharmacists can play an important part in the strategy to manage the national HIV/AIDS epidemic, but negative attitudes towards HIV/AIDS sufferers may adversely affect their efficiency.

Introduction

Human Immunodeficiency Virus (HIV) infection and the Acquired Immune Deficiency Syndrome (AIDS) pose a serious threat to the health of persons living in developing countries as well as impacting on each nation's economy through lost man-hours and depletion of the skilled workforce.¹ This is particularly true in Southern Africa with an estimated prevalence of HIV of around 20 to 25% in adults.² HIV/AIDS is associated with social stigma both in developed and developing countries, a factor which can impact on the attitudes of health care workers to HIV/AIDS patients as well as the quality of care provided.³ Pharmacists are important members of the health care team involved in drug supply and provision of both medication-related and purely health information. For this role to achieve its full potential with regard to HIV/AIDS, pharmacists need to be sound in their knowledge of the disease and free of misconceptions about AIDS patients. Whilst the attitudes of pharmacists and pharmacy students have been examined in the USA,^{4,5} no work has been done with this health professional in developing countries, specifically Zimbabwe, where the epidemiology of HIV infection is very different and access to information limited. This descriptive study investigated the HIV/AIDS knowledge and attitudes of pharmacists and pharmacy students in Zimbabwe which could impact on educational policies for the profession.

Materials and Methods

The study design was a cross sectional survey using a postal self-administered anonymous questionnaire based on previous studies, examining attitudes towards HIV/AIDS^{5,6} modified to suit local epidemiology and cultural attitudes. All pharmacists in six major urban areas in Zimbabwe were selected providing a sample of 250, representing approximately 69% of all registered pharmacists. In addition, 47 pharmacy students from the University of Zimbabwe in their penultimate and final year

of study were included (all registered students in these years of study excluding those used to pre-test the questionnaire). The questionnaire was designed with a five point Likert scale (a number of statements for each subscale scoring strongly agree [5 points], agree [4], don't know [3], disagree [2], strongly disagree [1]; an average score over the components for the subscale, falling between one and five, is computed, a higher score indicates higher knowledge, and so on) with statements examining knowledge (KW) of HIV/AIDS and its transmission (20 statements), negative emotions (NE) towards HIV/AIDS sufferers (10), professional resistance (PR) to having to treat HIV/AIDS patients (five) and fear of contagion (FC) (five). A final section also asked open-ended questions regarding the role of the pharmacist in preventing and managing AIDS.

After pre-testing (data not shown), questionnaires were distributed to 250 pharmacists throughout Zimbabwe (about 60% of all pharmacists) and 47 pharmacy students in their final or penultimate year of study at the University of Zimbabwe (the study was conducted during July to August 1995). One hundred and twenty six of the 297 questionnaires were completed and returned (42.4%). Data was analysed and comparisons made using the Minitab® statistical package (one-way ANOVA was used to test for differences in scores between groups utilising Tukey's method for multiple comparisons).

Results

Of the 126 respondents, 71 (56.3%) were male. The mean (SEM) age was 28.2(0.8) years, with 38.9% of respondents less than 25 years of age and 92.5% of all respondents below the age of 40 (range 19 to 71). Just over a third (34.1%) had qualified in the last four years and 97 (87.4%) had no other qualification other than their professional pharmacy degree. Students accounted for 23.0% (29) of the questionnaires and 41.3% came from pharmacists in retail practice (Table I). Responses from pharmacists working in wholesale, regulatory affairs, industry and not

in practice were combined due to the small numbers in each class and since they represent those not in direct contact with patients.

Table I: Characteristics of respondents according to area of primary practice.

Area of practice	Frequency %	Mean age \pm SEM (Median)	Male/female
Retail	46.8 (59)	30.9 \pm 1.3 (28)*	35/24
Student	23.0 (29)	21.3 \pm 0.2 (21)	14/15
Hospital (Govt.)	11.1 (14)	26.5 \pm 1.5 (25.5)	9/5
Academic	5.5 (7)	32.0 \pm 4.5 (29)	5/2
Industry	4.8 (6)	31.0 \pm 1.4 (31)	5/1
Hospital (private)	4.0 (5)	29.6 \pm 3.9 (27)	1/4
Regulatory	2.4 (3)	32.7 \pm 3.8 (31)	1/2
Wholesale	1.6 (2)	30.5 \pm 5.5 (30.5)	1/1
Not practising	0.8 (1)	29	0/1
Non-clinical*	9.6 (12)	31.2 \pm 1.3 (30.5)	7/5

*Combined industry, wholesale, regulatory and not practising.

*One age not given.

Attitude Subscales.

Scores for KW, FC, PR and NE all approximated a normal distribution (as tested by a Ryan-Joiner plot and frequency distributions). The subscale scores are summarised in Table II.

Table II: Mean scores [\pm SEM] for each subscale according to area of practice.*

	Knowledge	Fear of contagion	Professional resistance	Negative emotion
Academic (n=7)	4.2 \pm 0.2	2.5 \pm 0.2	2.2 \pm 0.2	1.9 \pm 0.1
Non-clinical* (n=12)	4.1 \pm 0.1	2.7 \pm 0.2	2.3 \pm 0.2	2.1 \pm 0.1
Public hospital (n=14)	4.1 \pm 0.1	2.9 \pm 0.2	2.3 \pm 0.2	2.3 \pm 0.2
Retail (n=59)	4.0 \pm 0.2	2.6 \pm 0.1	2.5 \pm 0.1	2.2 \pm 0.1
Student (n=29)	3.9 \pm 0.1	2.8 \pm 0.2	2.3 \pm 0.2	2.0 \pm 0.1
Private hospital (n=5)	3.7 \pm 0.1	3.0 \pm 0.1	2.5 \pm 0.2	2.0 \pm 0.3
Overall (n=126)	4.0 \pm 0.0	2.7 \pm 0.1	2.4 \pm 0.1	2.1 \pm 0.1

*Statements within subscales were scored from 1 (strongly disagree) to 5 (strongly agree); an average score for the subscale, falling between 1 and 5, was then computed; a high score represents good knowledge, high fear of contagion, strong professional resistance and high negative emotions respectively.

*Pharmacists in wholesale, regulatory and industrial practice or not practising

All pharmacists scored highly on KW (mean score \pm SEM = 4.0 \pm 0.04). Academic pharmacists had the highest score i.e. showed greatest knowledge of HIV/AIDS pathogenesis (4.2 \pm 0.5; n = 7) and private hospital pharmacists the lowest (3.7 \pm 0.2; n = 5). Male pharmacists tended to have a higher knowledge than females (4.0 \pm 0.4 vs 3.9 \pm 0.4; p=0.7). Difficulties within this area centred around differences between HIV-1 and HIV-2, definitions of the "window period" of infection and AIDS-related complex and only 35 (28.2%) realised that nonoxynol-9 spermicide has a protective effect against HIV transmission. Whilst there was no difference between the mean scores across different areas of practice (as tested by one-way

ANOVA), private hospital pharmacists tended to have a lower KW score than Government hospital pharmacists (3.7 \pm 0.1 vs 4.1 \pm 0.1).

Scores for FC were generally low (mean score = 2.7 \pm 0.1) with a trend for lower FC scores amongst older pharmacists (>45 years). Considering individual statements within the subscale, over two thirds of respondents (76.6%) indicated that in spite of their knowledge they were still afraid of contracting AIDS. Concerns about the work environment being high risk, eating in a restaurant where the chef has HIV/AIDS or about children going to a school where another child has HIV/AIDS were generally low.

Scores under the PR (mean score = 2.4 \pm 0.1) and NE (2.1 \pm 0.1) subscales were low with no differences between males and females. Pharmacists in wholesale and regulatory employment tended to have lower resistance to working with patients with HIV/AIDS than those in community or hospital practice.

The area of practice of pharmacy did not affect KW, FC, PR or NE scores (one-way ANOVA with Tukey's method for multiple comparisons).

Sources of Knowledge about HIV/AIDS.

Medical books/journals (mean rank = 2.2) followed by professional colleagues (3.6) were the most important sources of HIV/AIDS information (Table III).

Table III: Sources of HIV/AIDS information for pharmacists.

Source	Mean rank*
Medical books/journals	2.2
Television	3.3
Friend (professional)	3.6
Foreign newspapers	3.9
Local newspapers	4.0
Professional organisation	4.4
Medical School information board	5.4
Friends (non-professional)	5.9
Other	6.5

*Sources were ranked from 1 (most important) to 8 (least important).

Perceived Roles.

Most of the respondents believed that HIV/AIDS had increased their workload. Many (95%) saw a role for the pharmacist in the prevention of HIV/AIDS through health education and sale of condoms. A majority (85%) envisaged a role of the pharmacist in care of the AIDS patient through provision of medication with appropriate information, and in monitoring for adverse drug effects and drug interactions. However, time was seen as a constraint in implementing appropriate programmes to address these roles adequately or specifically for HIV/AIDS sufferers.

Discussion

The response rate of 42.4% may reflect the secretive nature that people in Zimbabwe still have towards HIV/AIDS as well as the difficulty in following up subjects who had not

responded to the questionnaire due to distances involved and unreliable telecommunications. The results may, therefore, be biased to reflect the views of those who are interested and open about this particular disease and not those who have greater fears and lower knowledge, and this should be borne in mind in their interpretation.

It was found that, in general, pharmacists have a relatively high knowledge of HIV/AIDS. However, the concepts of the window period of infection, AIDS-related complex, different subtypes of HIV and the spermicidal activity of nonoxynol-9 were poorly understood indicating that there is still a need for further education. It is not surprising to find that academic pharmacists had the greatest knowledge since they have greater access to information.⁵ The difference in knowledge between pharmacists in private and public hospitals, although not statistically significant, is interesting and may be due to there being a high turnover of staff in government hospitals resulting in pharmacists being younger (median age 25.5 vs. 27 for private hospitals; $p=NS$). They may thus have a higher retention of knowledge from their university studies. The tendency for males to have a higher knowledge than females could simply be due to chance since there were no differences in mean age between the two sexes. The low score for pharmacy students may reflect that those not in their final year of study had not experienced the clinical training component of the course.

There were no significant differences in the PR, NE and FC scores between the groups. Although FC scores were relatively low, they tended to be higher than those for PR and NE suggesting that this area could be a cause for concern. Older pharmacists tended to have less FC which may reflect that experience is important in developing empathy and in modifying one's attitudes towards death.

Whilst it is commendable that medical books and journals were the most important reference source for HIV/AIDS information amongst the respondents, there was also a dependence on non-professional resources such as television and newspapers. Professional societies could assist in making unbiased information more available through continuing education and professional development courses. Since most of the respondents considered themselves to have an important role in educating and counselling clients about HIV/AIDS, it is essential that they have the correct information.

The majority of respondents believed that they had a role to play in care of the HIV/AIDS patient and in preventing HIV, whether through the traditionally accepted role of provision of drugs or through a more patient-oriented educative and therapy-monitoring function. However, the fear of contagion as measured in the instrument may cause them to not be fully effective in this capacity.

One of the obvious drawbacks of this paper is the delay between the survey and publication. Since the survey, pharmacists have been involved in government taskforces addressing national strategies to tackle the HIV/AIDS pandemic in Zimbabwe, and have organised and have been involved in continuing education seminars for pharmacists

and other health professionals. In addition, information on HIV/AIDS is more widely available both to the public as well as to health professionals and some preconceptions may have been overturned by increased knowledge and experience. However, this makes this study all the more important as a baseline measurement against which the effect of educational interventions and the changes in information availability on pharmacist knowledge and attitudes can be assessed.

It is interesting to note, that whilst similar AIDS attitudes surveys have been performed on pharmacy students,^{4,5} nurses⁷ and student nurses,⁸ and other health professionals,^{6,9,10} this is the first time one has been published looking at pharmacists themselves. However, there are a number of limitations to the present work. The modifications made to the instrument to allow for local attitudes and HIV/AIDS epidemiology preclude comparison to other studies. There is, therefore, a need for it to be used with other groups including doctors, nurses and other health workers in Zimbabwe, to allow for comparisons and more meaningful interpretation. Trends have been discussed even where there is no statistically significant difference, since the multiple comparison analysis was weakened by the small numbers of respondents in some groups. In addition, the study needs to be repeated to examine the current state of knowledge of HIV/AIDS and how it has changed since this first survey.

In summary, pharmacists, as members of the health care team, can play an important part in the overall strategy to manage the national HIV/AIDS epidemic. They show a high knowledge of the disease and its transmission, but negative attitudes towards HIV/AIDS sufferers may adversely affect their efficiency. The pharmacist can play a significant role in preventing and managing HIV/AIDS but there are constraining factors.

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