HEALTH CARE WORKERS' KNOWLEDGE OF HEPATITIS C AND ATTITUDES TOWARDS PATIENTS WITH HEPATITIS C: A PILOT STUDY

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ABSTRACT

A questionnaire was developed to determine health care workers' (HCWs) knowledge of, and attitudes towards, hepatitis C in order to inform an education strategy to prevent discrimination towards hepatitis C-positive patients. The study's aim was to determine the questionnaire's reliability and validity. Fifty-eight of 100 questionnaires distributed to HCWs were returned. The internal consistency of the scale was 0.7 following the removal of one item. The face validity of the instrument was high. It was found that a number of demographic variables impacted on HCWs' level of knowledge regarding hepatitis C and their willingness to care for patients with hepatitis C. Further research with a larger sample size is needed to clarify these issues.

INTRODUCTION

Hepatitis C is an infectious disease caused by the hepatitis C virus (HCV) (National Health and Medical Research Council (NHMRC) 1997). Hepatitis C is still poorly understood, in part because the virus has only recently been identified. The genome of HCV was isolated in 1988, and a serological test was developed in 1990 (Crofts et al 1999a; Lowe and Cotton 1999). The HCV has a tendency to mutate rapidly, which makes it genetically unstable (Olmstead 1996). The rapid change in viral antigens makes it difficult for the immune system to clear the virus, consequently there is a high rate of chronicity (Farci et al 1994). Around 80% of HCV-infected persons go on to develop chronic hepatitis, up to 20% will develop cirrhosis of the liver and around 5% will develop hepatic cancer (Lowe and Cotton 1999; NHMRC 1997). The rapid mutation rate also means that there is no licensed, effective vaccine against HCV, and that gamma globulin is not an effective prophylactic therapy (NHMRC and ANCA 1996). Persons with chronic hepatitis C can be treated with interferon monotherapy, or with interferon and ribavirin combination therapy (Hepatitis C Council of NSW 2001). Neither of the treatments is highly effective with only 15-20% of patients treated with interferon alone, and 35-50% of patients treated with combination therapy showing a sustained response (ie absence of viral RNA for at least six months after cessation of treatment) (NHMRC 1997).

Recent estimates indicate that approximately 210,000 persons are chronically infected with HCV in Australia (Hepatitis C Council of NSW 2001). An additional 11,000 people are becoming infected each year (NHMRC 1997). The primary mode of transmission in Australia is via injecting drug use (IDU) (~90% of cases) (Lowe and Cotton 1999). Sexual transmission and mother-to-child transmission are rare. Transmission via contaminated blood transfusion has been a major factor in the past, however, a recent study estimated that the risk of acquiring HCV from a blood transfusion in Victoria was around one in 234,000 donations (Whyte and Savoia 1997).

The greatest risk of transmission to health care workers is via a contaminated needlestick or sharps injury. There

have been 31 documented cases of transmission by this mode, whereas there have been only three documented cases of transmission by a blood splash to the conjunctiva or mucous membranes (Crofts et al 1999a; Ippolito et al 1998; Rosen 1997; Sartori et al 1993). The risk of contracting HCV from a contaminated needlestick or sharps injury depends on factors such as the infected person's viral load and the amount of blood transferred (Olmstead 1996). The rate of seroconversion following a needlestick has been as high as 10% when viral RNA was detected in the serum of the source (Mitsui et al 1992). The NHMRC and ANCA (1996) suggests that transmission rates via needlestick injuries range from 2-10%. However, a review by Crofts et al (1999a) showed an average seroconversion rate of 1.9%, whilst Olmstead (1996) reported an average seroconversion rate of 3.5% based on five studies which used more accurate second generation diagnostic tests.

The NHMRC and ANCA (1996) recommend that all health care workers follow 'standard precautions' to protect against the transmission of all blood-borne viruses. These precautions include safe handling and disposal of sharps into sharps containers, the use of personal protective equipment to prevent exposure to blood or body fluids, and hand washing following patient contact. A recent study that examined the efficacy of chlorine-based solutions versus polyphenolic disinfectants in inactivating HCV, found that the latter solutions inactivated the virus more completely and more quickly, thus polyphenolic disinfectants may be more useful for managing blood spills (Agolini et al 1999).

HCV presents a substantial cost to the community. Shiell (1998) estimated that the direct and indirect costs associated with those persons already infected with HCV in Australia were $107 million per year. Each new 1,000 persons infected are estimated to cost an additional $46.6 million over 50 years. Any strategy that can slow the rate of new HCV infections has the potential to result in substantial savings for the community and benefit those individuals who would otherwise be infected.

Difficulties with access to health care may arise for persons with HCV due to the stigma attached to the disease and to IDU (Crofts et al 1999a). One study found that 83% of 37 HCV-infected persons surveyed experienced substantial discrimination as a result of their illness, and around 46% of the incidents occurred in a health care setting (Crofts et al 1999b). A previous study of discrimination against persons with another blood-borne virus, Human Immunodeficiency Virus (HIV), demonstrated that discrimination may be manifested by:

- avoidance of contact with infected persons;
- use of unnecessary isolation precautions;
- refusal to care for infected patients; and,
- staff differentiating between what they see as innocent victims deserving of care and those who brought the disease on themselves (Wang and Patterson 1996).

A review of Australia's response to HCV by the Commonwealth Department of Health and Aged Care (Lowe and Cotton 1999), indicated that discrimination by HCWs may act as a barrier preventing HCV-infected persons from accessing diagnostic services and treatment. One of the recommendations of the review was that training programs be developed and implemented to reduce discrimination against HCV-infected persons in the health care environment. This may reduce the transmission of HCV by:

- improving access to diagnostic testing thus increasing the awareness of HCV status in at-risk persons; and,
- improving access to treatment, thus reducing infectivity and risk of further transmission.

In order to develop a successful program, it is important to determine what HCWs know about hepatitis C and how this knowledge informs their actions and attitudes towards HCV-positive persons. While no data have been published on these factors in relation to HCV, several factors have been shown to influence the attitudes of HCWs towards persons infected with HIV. Health care workers tend to react more positively towards patients with HIV if:

- the staff member personally knows someone with Acquired Immunodeficiency Syndrome (AIDS) or has had experience caring for a patient who is HIV positive (Bowman et al 1994; Gershon et al 1994);
- they have higher scores on knowledge tests in relation to HIV (Gignac and Oermann 1991); or,
- the HCW has a lower perception of their own risk of contracting HIV (Ficarotto et al 1991).

Health care workers' knowledge of HIV/AIDS tends to be higher if they personally know someone with AIDS (Gershon et al 1994) or if they have a lower perception of their own risk of contracting HIV (Ficarotto et al 1991). The association between either homosexuality or IDU and AIDS caused respondents in some studies to feel negatively towards persons with AIDS (Lohrmann et al 2000; Bormann et al 1995; Glad et al 1995; Leasure et al 1995).

STUDY DESCRIPTION

A search of Medline and CINAHL revealed no studies that examined these factors in relation to HCV. Thus, a questionnaire was developed to determine HCWs' knowledge of, and attitudes towards, HCV in order to inform a strategy to prevent discrimination towards HCV-positive patients and thus improve patient access to testing and health care programs.

The questionnaire was designed to answer the following questions (adapted from Lohrmann et al 2000):

1. What is the level of knowledge of HCWs regarding hepatitis C?
2. What attitudes do HCWs have regarding HCV-positive patients?

3. How willing are HCWs to care for people who are HCV-positive?
4. Is there a relationship between HCWs' backgrounds and their knowledge levels, attitudes towards, and willingness to care for HCV-infected persons?
5. Is there a relationship between HCWs' knowledge levels, and their attitudes towards, and willingness to care for HCV-infected persons?

The specific aim of this study was to determine the reliability and validity of the questionnaire and highlight any problems in its design prior to administering it to a wider sample.

METHODS

The survey instrument

Following a literature review, a questionnaire was created to examine the knowledge, attitudes and practices of HCWs in relation to hepatitis C. The questionnaire had a demographics component that elicited information on the age, gender, profession, years of experience as a HCW, and highest qualifications of the respondents. Four questions examined whether the respondent personally knew anyone who had HCV, if they had cared for a HCV-positive person in the last six months, or if they had either a needlestick/sharps injury in the previous 12 months or a splash of blood or body fluids to the eyes or mucous membranes. The answer alternatives were 'yes', 'no' or 'don't know'. There was also a 13-question component that examined the HCWs' knowledge of HCV (Table 1) (see the sources of information in the introduction) followed by a Likert scale consisting of 17 statements on attitudes and practices in relation to HCV-positive persons. Some of the questions in the 'attitudes and practices' section were adapted from the Fear of AIDS scale developed by Wang and Paterson (1996). A score of one indicated the person strongly disagreed with the statement, while five indicated strong agreement. The final section was designed to test the face validity of the questionnaire and asked for any comments on the issues raised or on the clarity and design of the questionnaire.

Subjects

The questionnaire was piloted in 2001 with a group of registered nurses (RNs), doctors, wardspersons (WPs),

Table 1: Responses to knowledge questions (correct answers in brackets).

QUESTION	%
9. The risk of contracting hepatitis C from a contaminated needlestick injury is: (1-10%)	**20.7% correct** 10.3% underestimated 43.1% overestimated 25.9% don't know
10. The number of people currently infected with hepatitis C in Australia is thought to be (pick the closest number): (200,000)	**19% correct** 15.5% underestimated 13.8% overestimated 51.7% don't know
11. New hepatitis C infections are thought to be occurring at the rate of approximately: (10,000/year)	**8.6% correct** 39.6% underestimated 1.7% overestimated 50% don't know
12. The primary way hepatitis C is transmitted in Australia today is: (injecting drug use)	**48.3% correct**
13. Hepatitis C is caused by a: (virus)	**72.4% correct**
14. The greatest risk of contracting hepatitis C in a health care setting is via: (needlestick/sharps injury)	**34.5% correct**
15. The precautions that I should take to avoid infection with hepatitis C in the health care setting include: (hand washing; not recapping needles; wearing mask, gown and gloves when I suspect I might be exposed to blood or body fluids; disposal of sharps into sharps containers) Source: NH&MRC (1996)	**All right 0%** Some right 94.8% None right 5.2%
16. Blood spills from someone infected with hepatitis C are most effectively cleaned up with: (phenolic) Source: Agolini et al. (1999)	**1.7% correct**
17. There is an effective vaccine for hepatitis C. (false)	**75.9% correct**
18. If one is exposed to hepatitis C via a needlestick injury, there is an effective, licensed prophylactic therapy in Australia. (false)	**34.5% correct**
19. What percentage of people who are infected with hepatitis C develop chronic hepatitis? (~80%)	**12.1% correct** 51.7% underestimated 36.2% don't know
20. What percentage of people infected with hepatitis C develop liver cancer? (~5%)	**13.8% correct** 10.3% underestimated 31% overestimated 44% don't know
21. The current drugs licensed for the treatment of chronic hepatitis C in Australia are (tick any that apply): (interferon, interferon and ribavirin combination therapy)	**All right 0%** Some right 20.7% None right 79.3%

and physiotherapists (PTs) at a 250-bed Australian hospital. One hundred questionnaires were distributed to the critical care unit, the medical superintendent, and the physiotherapy and wardspersons departments.

Study design

Directors of the various participating departments were given a copy of the information sheet, which described the study aims, one week prior to the study being conducted and were asked to bring the study to the attention of their staff. Following distribution of the questionnaires, respondents were given the option of returning the questionnaire by mail, or by placing it in one of several ballot boxes in the hospital, which were cleared daily by the researcher. The researcher was available two hours daily in the critical care unit to answer queries regarding the study. The answers to the knowledge questions were made available to each department a week after completion of data collection. The anonymity of respondents was maintained throughout the study. Participation in the study was voluntary.

Ethics clearance

Approval for this study was gained from the relevant Human Research Ethics Committees (HREC), which were constituted and operated according to the guidelines of the National Health and Medical Research Council of Australia. In order to satisfy conditions imposed by the HREC, the hospital in which the study was conducted, and the exact time period during which the study was carried out have not been identified.

Statistical analyses

Data analyses were carried out using the Statistical Package for Social Sciences (SPSS 6.1). Descriptive statistics were initially used to analyse the variables. As it was a condition imposed by the HREC that participants' responses be anonymous, it was not possible to use a test-retest technique to assess the instrument for reliability, however, Cronbach's alpha was used to assess the reliability index of items in Section C 'attitudes and practices'. A relationship of 0.7 was selected as the acceptable criterion level (Jackson and Furnham 2000). Three groupings of related items had a Cronbach's alpha score of greater than 0.7 (Table 2). The relationships between these groupings, and between the knowledge scores and groupings were examined using a Pearson's correlation test. The sample size was insufficient to conduct a factor analysis (Munro 1997).

Table 2: Results of subscale analysis

Name of subscale	Question number	Cronbach's alpha
Willingness to treat	25,32,33,34,37,38	0.7026
Perception of personal risk	22,26	0.7035
Risk-taking personality	24,29	0.7466

The relationships between score on the knowledge test and demographic variables were examined using one-way analysis of variance (ANOVA) for items with more than two groups, and with an independent samples t-test for items with two groups (Zar 1999). Similar approaches were used to analyse the relationships between knowledge score and personally knowing someone with HCV, caring for someone with HCV in the previous six months, having a sharps injury in the previous 12 months or having a splash to the eyes or mucous membranes of blood or body fluids. Tukey's Honestly Significant Difference (HSD) test was used for post hoc analyses to determine which of the groups differed from each other (Pallant 2001). As this was a pilot study, the sample size within the different demographic groups was insufficient to conduct multivariate statistical analyses.

RESULTS

Respondents

One hundred questionnaires were distributed and 58 questionnaires were returned: 15 from WPs, 18 from PTs, 20 from RNs and five from doctors.

Demographics

The bulk of participants were between the ages of 20-30 (43%; n=25), while 34.5% (n=20) were aged 31-40, 15.5% (n=9) were aged 41-50, 5% (n=3) were aged 51-60, and 2% (n=1) were over 60. 35% (n=20) had 1-5 years of experience as a health care worker, 29% (n=17) had 6-10 years, 14% (n=8) had 11-15 years, 3% (n=2) had 16-20 years, and, 19% (n=11) had greater than 20 years experience. Tertiary qualifications were held by 78% (n=45) of respondents, while 22% (n=13) had either secondary school qualifications, certificate level qualifications or other unspecified qualifications. 64% (n=37) of respondents were females and 36% were males (n=21).

16% (n=9) of respondents personally knew someone who had HCV, 59% (n=34) had contact with a HCV-positive patient in the previous six months, 9% (n=5) had experienced a sharps injury in the previous 12 months, and over one-third (36%; n=21) had a splash to the eyes or mucous membranes of blood or body fluids whilst at work.

Knowledge of hepatitis C

The majority of staff answered 11 of the 13 questions incorrectly (Table 1). Questions 15 and 21 were worth two marks each as one mark was awarded for getting the answer partially right and two marks were awarded for getting all the answers right. Thus, the total marks were out of 15. Knowledge scores ranged from 1-10 (mean 4.6 $\pm$ 0.3 sem).

Knowledge scores were significantly higher if the staff member had recently had contact with an HCV-positive patient (mean 5.24±0.59) when compared with those who couldn't remember if they had (mean 2.55±0.50) (1-way ANOVA, F=7.2160, p=0.0017; Tukeys HSD 0.05). Knowledge also differed significantly between professional groups (1-way ANOVA, F=10.5779,

p=0.000). Post hoc analysis (Tukey's HSD 0.05) showed that doctors (mean 8.0±0.83) scored significantly higher on the knowledge test than the other groups, and RNs (mean 5.35±0.37) scored significantly higher than PTs (mean 3.72±0.48) and WPs (mean 3.40±0.45). Scores on the knowledge test were also higher in the group with more than 15 years experience (mean 5.77±0.47) compared to those with one to five years experience (mean 3.75±0.52) (1-way ANOVA, F=3.2666, p=0.0282; Tukey's HSD 0.05). There were no significant relationships between the level of knowledge and the other demographic variables: age, gender and qualifications.

Attitudes towards HCV-infected persons

The majority of respondents (88%; n=51) reported that they did not treat persons with HCV differently to other patients, did not try to avoid looking after patients with HCV, (87%; n=50), or avoid spending time with them (85%; n=49), and 69% (n=40) reported that they were comfortable touching someone with HCV (Table 3). Almost 90% (n=52) felt that it was the duty of health care workers to care for people with HCV and 85% (n=49) were not influenced by the way the person acquired HCV. Three-quarters of respondents (n=43) rarely if ever worried about acquiring HCV in the workplace, although only 45% (n=26) felt they were at low risk of contracting HCV in the workplace.

Forty five percent (n=26) agreed or strongly agreed that mandatory testing upon admission to hospital was not necessary, although just over half (n=30) of the respondents felt that patients undergoing surgery should be tested compulsorily. Just under three-quarters (72%; n=42) agreed or strongly agreed that patients who were

Table 3: Responses to the attitudes and practices statements

STATEMENT	STRONGLY DISAGREE	DISAGREE SURE	NOT AGREE	AGREE	STRONGLY
22. I frequently worry about acquiring hepatitis C because of my work.	13.8%	**55.2%**	5.2%	20.7%	3.4%
23. Our profession has a responsibility to treat people infected with hepatitis C.	1.7%	3.4%	3.4%	**46.6%**	43.1%
24. I prefer an exciting, unpredictable life.	19.0%	**44.8%**	15.5%	10.3%	6.9%
25. I try to avoid looking after patients infected with hepatitis C.	29.3%	**56.9%**	3.4%	3.4%	5.2%
26. My risk of becoming infected with hepatitis C through my work is low.	12.1%	25.9%	15.5%	**36.2%**	8.6%
27. It is not necessary for patients to undergo mandatory testing for hepatitis C upon admission to hospital.	6.9%	27.6%	19.0%	**31%**	13.8%
28. All patients undergoing surgery should be tested for hepatitis C to protect the staff looking after them.	1.7%	31%	13.8%	**37.9%**	13.8%
29. I enjoy taking risks in life.	22.4%	**46.6%**	8.6%	17.2%	1.7%
30. Patients who know that they have hepatitis C should disclose their infective status to the people caring for them.	5.2%	15.5%	5.2%	**43.1%**	29.3%
31. I use Standard Precautions to protect myself when ever I suspect I might be exposed to body fluids.	0	1.7%	0	**50%**	46.6%
32. The way the patient caught hepatitis C influences the way I treat him/her.	37.9%	**46.6%**	6.9%	5.2%	1.7%
33. When looking after a patient with hepatitis C, I try to spend as little time with them as possible.	25.9%	**58.6%**	8.6%	5.2%	0%
34. If I know someone has hepatitis C, I treat them differently to other patients.	31.0%	**56.9%**	6.9%	3.4%	0%
35. I have no problem looking after someone with hepatitis C regardless of how they caught the disease.	1.7%	3.4%	3.4%	**63.8%**	25.9%
36. Touching someone infected with hepatitis C doesn't make me uncomfortable.	1.7%	10.3%	17.2%	**48.3%**	20.7%
37. I can't always follow Standard Precautions because my patient's needs come first.	27.6%	**55.2%**	8.6%	3.4%	3.4%
38. My workplace has a strong commitment to occupational health and safety.	12.1%	8.6%	13.8%	**39.7%**	24.1%

HCV-positive should disclose their infective status to their carers.

Attitude scale analysis

Cronbach's alpha was used to measure the internal consistency of the attitude scale. Cronbach's alpha was 0.6671 for the scale overall, however, the scale reached an alpha of 0.7003 if Question 30 was deleted. The value of Cronbach's alpha improved slightly if the scale was divided into three subscales, which were named 'willingness to treat', 'perception of personal risk', and 'risk-taking personality' (Table 2). Willingness to treat persons with HCV was correlated significantly with perceptions of personal risk (Pearson's correlation co-efficient =0.2839, p=0.032), (ie the lower the person perceived their risk the more willing they were to care for persons with HCV). Willingness to treat was not significantly correlated to risk-taking behaviour (p=0.052).

Relationship between knowledge and attitudes

No significant relationships were noted between knowledge scores and attitudes to caring for HCV-positive persons.

Relationships between background factors and attitude subscales

Knowing someone personally who had HCV, having recently cared for a HCV-positive patient, or having had a needlestick injury or splash incident were not related significantly to willingness to treat persons with HCV, with feelings of personal risk, or with a risk-taking personality. There were several significant relationships between demographic factors and the scales. Staff with 11-15 years of experience were less willing to treat patients with HCV than persons with less or more experience (1-way ANOVA, F=2.8241, p=0.0474; Tukey's HSD 0.05). Perceptions of personal risk of acquiring HCV in the workplace were lower amongst PTs than amongst RNs and WPs (1-way ANOVA, F=5.6065, p=0.002; Tukey's HSD 0.05), and staff with degrees saw themselves as at lower risk than staff with secondary school education only (1-way ANOVA, F=2.3592, p=0.0436; Tukey's HSD 0.05).

Validity test

No criticisms were made of the design and clarity of the questionnaire. One person commented that the questionnaire was easy to fill out. Several staff members commented on their lack of knowledge of HCV and on the need for in-service on the topic. One person suggested that the value of a questionnaire was limited if the person who developed it did not have clinical experience. One staff member expressed anger that he or she usually did not find out someone had HCV until a week after they had contact with the patient.

DISCUSSION

Overall, the knowledge of health care workers regarding HCV was poor. Whilst the bulk of respondents identified most of the precautions that should be taken in the workplace to prevent HCV transmission, none of the respondents correctly identified all of the measures required, only one respondent correctly identified the most effective solution to treat blood spills, and only 35% correctly identified the major risk factor for contracting HCV in the workplace. Those staff members who had the most experience, who had recently cared for someone with HCV, and who had the greatest contact with blood and body fluids and the most responsibility for patient care (ie RNs and doctors), had the greatest knowledge regarding HCV. It may be that staff learnt more about HCV through caring for someone who had it, or that the knowledge they had was more easily retained through reinforcement via clinical practice. Similarly, a study which examined the association between nursing students' backgrounds and their knowledge levels regarding AIDS, found that those who had cared for an AIDS patient had a higher level of knowledge than those who had not (Lohrmann et al 2000).

Respondents also had a tendency to underestimate the incidence of HCV infection in the population and the degree of chronicity associated with HCV, but a substantial proportion overestimated the risk of contracting HCV by needlestick injury in the workplace. A previous study demonstrated that staff overestimated the risk of contracting HIV, and that the perception of risk was influenced by occupation and by having cared for a patient with HIV (Brusaferro et al 1997). Similarly, in this study perception of risk was influenced by profession, however, these perceptions were probably relatively accurate as PTs who felt their risk was low were not required to handle used sharps and may have had considerably less contact with blood and body fluids than the other groups. Those staff who perceived their risk of contracting HCV in the workplace was low were also more willing to care for persons with HCV. Similarly, a study by Kagan (1986), found that nursing students who had a lower fear score were more willing to care for patients with AIDS than those who had a high fear score. Despite the fact that it is considerably easier to contract HCV via a needlestick than HIV, the percentage of staff who felt at high risk of contracting HCV was considerably lower than those who felt at high risk of contracting HIV (38% vs 63%-85%) (Hossini et al 2000, Wallack 1989).

Similarly, the percentage of staff who agreed with mandatory testing on admission was lower than that reported for studies which examined HCWs' views on mandatory testing for HIV (35% vs 66%) Hossini et al 2000. It may be that HCV is rightly considered a less dangerous virus than HIV by HCWs and so they are less concerned about it (Bennett 1998). It was interesting that staff did not have a blanket response to compulsory testing. Whilst just under three-quarters of staff agreed that patients should disclose their infective status, only half felt that testing prior to surgery should be compulsory, and just over one-third agreed with mandatory testing on admission. Respondents may have felt there was a lower inherent risk of contracting HCV from non-surgical patients.

The majority of staff appeared to be willing to care for persons infected with HCV. While early studies on the attitudes and practices of staff towards persons with HIV

showed a high level of discriminatory attitudes and practices, some more recent studies have shown that attitudes may now be less negative, perhaps reflecting more favourable media attention and greater contact with HIV-positive persons (Lohrmann et al 2000, Snowden 1997). The same may be true for HCV, although it again may also be that staff perceive HCV as less threatening than HIV.

Surprisingly, knowledge levels were not correlated significantly with willingness to care for patients with HCV, despite such correlations in other studies examining HCWs' attitudes to HIV (Tierney 1995, Gignac and Oermann 1991). This may be due to the fact that knowledge scores overall were fairly low, which did not allow sufficient variation to fully test this hypothesis. Data obtained from a larger sample in a wider range of workplaces may provide a more comprehensive picture.

Limitations

The ability to attribute causality and to extrapolate the findings in this study is limited by the cross-sectional study design and the small sample size. In addition, because the study design made it impossible to compare the characteristics of responders with non-responders, the results may have been biased. The primary aim of this study was to determine the clarity, reliability and validity of the questionnaire and the questionnaire was both reliable and had high face validity. The results, despite their limitations, provide some information that may be of benefit to HCWs, on a topic that has been neglected in the literature to date.

CONCLUSION

The study identified a substantial lack of knowledge among all groups of health care workers surveyed which suggests that staff are greatly in need of education programs on HCV. Nurses and doctors, in particular, have a duty to provide informed care to their patients and also have a role in providing health education based on fact.

Additionally, as the perception of risk was shown to influence HCWs' willingness to care for patients with HCV, further education on the risks of contracting HCV in the workplace, and on methods to protect oneself from transmission may increase the willingness of HCW to care for HCV-infected persons thus reducing discrimination towards these people in the health care setting. Further studies examining these factors are needed.

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