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RESEARCH PAPER

Transmission of Hepatitis C Virus: Knowledge, Attitude and Practices (KAP) Among Paramedical Staff in Punjab, Pakistan

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ABSTRACT

The aim of this research is to ascertain the degree of knowledge of HCV transmission among PMS in Punjab. Paramedical staff are at risk of infection due to public secondary health facilities' inadequate to HCV transmission standards. Using randomized sampling, the study was carried at Gulab Devi Hospital and Children Hospital in Lahore. The PMS of all ages, gender and experience were recruited at Gulab Devi Hospital and Children Hospital in Lahore. The findings showed that the PMS at Gulab Devi Hospital and Children Hospital in Lahore was ignorant of the wider use of universal precautions, also known as the transmission of HCV. Some of the universal safeguards were more familiar to the responders. It appeared that a large percentage of people did not follow the requirements for doing PPE. Therefore, it is recommended that training and counselling of the paramedical staff is highly essential.

KEYWORDS HCV Transmission, Hepatitis C, KAP, Paramedical Staff

Introduction

The inflammation of the liver cells brought on by an autoimmune or infectious disease is known as hepatitis. The most common cause of infectious hepatitis worldwide is viral hepatitis. Hepatitis C is one of the most frequent causes of infectious viral liver infection. It could be an infection spread vertically, an STD, or a blood borne disease. The virus has several genotypes and takes two weeks to six months to fully mature, on average, 45 days after contact with an infected person. The illness manifests a range of symptoms after infection, including:

- Severe, mostly quiet, or transient illness (Cockroft, A., et al., 1994).
- Health care workers who report unintentional contact with blood or other bodily fluids report anxiety and a feeling of increased risk of HIV and hepatitis B infection.
- Persistent signs and symptoms such fatigue, fever, nausea, vomiting, and jaundice
- Problems with cirrhosis may arise over a period of 10–20 years.
- Hepatocellular carcinoma, or cancer of the liver.

The hepatotoxic human disease HCV (genus Hepaciviruses, family Flaviviridae) has a seroprevalence of roughly 2.8% worldwide (Bottero, et al., 2015). The seven primary HCV genotypes are separated into numerous recognized subgroups and show notable antigenic diversity (Pellissier, et al., 2012). A small number of "epidemic" subtypes (1a, 1b, 3a, and 2a) are responsible for the great majority of infections worldwide (De Schrijver, et al., 2005).Their growth occurred recently (over the last 50–100 years) as a result of the introduction of parenteral exposure procedures (McMahon, J.H., et al., 2014).

Literature Review

The heterogeneity of HCV is accounted for in part by the epidemic subtypes. Sub-Saharan Africa and South-East Asia have a pattern of HCV diversity that is typified by significantly different subtypes of the same genotype predominating in transmissions across geographically adjacent regions (Auta, et, al., 2017). Numerous domestic and wild animals have been identified to have hepaciviruses, with rats and bats having the highest viral diversity (Jaquet, et al., 2018).

The closest relatives of HCV, known as equine and canine hepaciviruses, EHV, and CHV, were found in horses, donkeys, and dogs (Velasquez, T., et al., 2016). But the source of HCV as a human illness is still unknown. According to some authors, HCV originated from a horse-to-human transmission event (Aasheim, et al., 2013).

Whereas according to other authors, HCV very recently emerged from one or more cross-species transmission events from an unidentified species (Masoodi, et al., 2019). The opposing idea, however, holds that humans and other primates have been infected by HCV-related viruses throughout their evolutionary history due to the strong species-specificity of HCV and its ability to remain in humans for the rest of their lives (Bizzoca, Campisi & Muzio, 2020).

Materials and Methods

The study was cross-sectional in nature. The study was carried out by paramedical staff at Gulab Devi and Children Hospital Lahore using randomized sampling. In addition, a lot of PMS originate in remote and rural areas. The subjects were recruited based on the following criteria:

- Paramedical Staff of all ages
- Paramedical Staff of Gulab Devi and Children Hospital Lahore
- Staff have a variety of experience
- Male and female PMS

The admin staff and doctors were excluded from this study. Paramedical staff at Gulab Devi and Children Hospital Lahore were given individual questionnaires regarding their knowledge, attitudes, and practices regarding HCV transmission. Sequentially numbered, sealed, opaque envelopes that was stored and used to conceal allocations. The sample size for the study was 400 individuals but while gathering data 15 questionnaire was missing/incomplete which were not included in the study; hence sample remains 385. The time period of this study started from the November 01, 2023 to November 30, 2023. The nurses/lab technicians who participated in the study filled out consent forms; their information was kept private and utilized exclusively for this investigation. IBM SPSS Statistics 25 was used for all statistical analyses (SPSS). For normally distributed data, descriptive statistics include frequency charts and the meaning of the standard deviation.

Results and Discussion

The descriptive technique was employed to collect and analyze the data in order to fulfill the study's objectives. To make the nature of the variables more-clear, descriptive statistics were applied. Different values are explored here.

Table 1
Background Characteristics

Demographic Characteristics	Frequency	Percentage
20 & Below	44	11.4
21-25	116	30.1

Current Age of the Respondents (Years)	25-30	133	34.5
	31-35	71	18.4
	36-40	11	2.9
	41-45	4	1.0
	46 & Above	6	1.6
Gender	Male	221	57.4
	Female	164	42.6
Type of Provider	Physician	8	2.1
	Physician Assistant	19	4.9
	Nurse	258	67.0
	Midwife	23	6.0
	Others	77	20.0
Specialty of the Provider	Internal Medicine	346	89.9
	Pediatrics	22	5.7
	General Medicine	1	0.3
	Obstetrics	16	4.2
Place of Work	Commune Health Center	16	4.2
	District Level Hospital	222	57.7
	Province Level Hospital	147	38.2
Year of Working Experience	0-3	92	23.9
	4-6	104	27
	7-8	184	47.8
	9 & Above	5	1.3

According to the results of the randomized sampling, 11.4% of respondents were under the age of 20, and 30% of students were between the ages of 21 and 25.

Approximately 34.5% of respondents fell into the 25–30 age group, while 18.4% of respondents fell into the 31–35 age group. In our sample data, there were 164 female respondents and 221 male respondents in this finding. Eight doctors, 19 physician assistants, 258 nurses, 23 midwives, and the rest individuals fell into another category, according to the results. As far as specialization goes, 89.9% of respondents have an internal medicine specialty, 5.7% have a pediatric specialty, and 0.3% have a general medicine specialty and obstetrics is the specialty of the remaining.

Following randomized sampling, the commune health center employed 4.2% of the respondents, district-level hospitals employed 57.7%, and province-level hospitals employed 38.2% of the respondents. Following random selection, the results showed that only 1.3% of respondents had more than nine years of experience, while 23.9% of respondents had experience of three years or less, 27% had experience of four to six years, and 47.8% had experience of seven to eight years.

Table 2
Questionnaires Survey

Survey Questions	True	False	Don't Know	Mean
The easiest way to get hepatitis C is through sharing equipment to inject the drug	347 (90.1)	37 (9.6)	1 (0.3)	1.1013
The majority of people with chronic hepatitis C do not have any symptoms	330 (85.7)	54 (14.0)	1 (0.3)	1.1455
Everybody with a positive hepatitis C antibody test has chronic hepatitis C disease	360 (93.5)	24 (6.2)	1 (0.3)	1.0675
There is medication to treat hepatitis C	346 (89.9)	38 (9.9)	1 (0.3)	1.1039
There is a vaccine for hepatitis C	72 (18.7)	312 (81.0)	1 (0.3)	1.8156

People who clear the hepatitis C can be infected again, either spontaneously or after medical treatment	324 (84.2)	60 (15.6)	1 (0.3)	1.1610
You wear when splattering of blood is possible	330 (85.7)	54 (14.0)	1 (0.3)	1.1455
Shaking hands with a person with chronic HCV	179 (46.5)	171 (44.4)	35 (9.1)	1.6260
Having unprotected sex with a person with chronic HCV	263 (68.3)	63 (16.4)	59 (15.3)	1.4701
Having a blood transfusion	243 (63.1)	74 (19.2)	68 (17.7)	1.5455
Sneezing or coughing	130 (33.8)	168 (43.6)	87 (22.6)	1.8883
From mother to her child at birth	269 (69.9)	58 (15.1)	58 (15.1)	1.4519
Eating with or sharing food and utensils with a person with chronic HCV	160 (41.6)	151 (39.2)	74 (19.2)	1.7766

According to the findings, 90% of responders to the above question believe that sharing medications and equipment is the simplest way to contract HCV. The outcomes and findings against each inquiry are also clearly visible thanks to the graphical and tabular representation, which is also indicated. Therefore, the majority of respondents are aware of the HCV in this particular situation.

The findings against each inquiry as well as the results obtained in answer to the aforementioned query are presented in a clear and concise manner in both graphical and tabular form.85.7% of responders claim to have no symptoms from the chronic hepatitis C virus. Therefore, the majority of respondents are not very knowledgeable with HCV in this particular scenario.

99.5% of respondents' responses are accurate. The findings against each inquiry as well as the results obtained in answer to the aforementioned query are presented in a clear and concise manner in both graphical and tabular form. Therefore, the majority of respondents are aware of the HCV in this particular situation.

Most responders are aware that medication is used to treat the hepatitis C virus. Therefore, the majority of respondents are aware of the HCV in this particular situation.

The findings against each inquiry as well as the results obtained in answer to the aforementioned query are presented in a clear and concise manner in both graphical and tabular form. Therefore, the majority of respondents are not very knowledgeable with HCV in this particular scenario.

The PMS did not fully get the basic concept of HCV transmission. They were ignorant about safe injection practices, hand cleaning before and after direct patient contact, cough etiquette, and the hazards of infectious disease transmission when choosing where to place patients. Few individuals were able to accurately identify every question on the elements of the HCV transmission theory. Therefore, the majority of respondents are aware of the HCV in this particular situation.

The findings against each inquiry as well as the results obtained in answer to the aforementioned query are presented in a clear and concise manner in tabular form. Therefore, the majority of respondents are not very knowledgeable with HCV in this particular scenario.

Answers from 46.5% of respondents are true, 44.4% are false, and 9.1% are unsure. Therefore, the majority of respondents are aware of the HCV in this particular situation.

However, despite of diagnosis, the majority of PMS were aware that HCV transmission should apply to all patients and bodily fluids. PMS patients were better aware of this aspect of the general precautions. There were differences in the PMS's comprehension of post-exposure prophylaxis. The respondents said that PPE should only be given to those

who tested negative for HCV and that testing and counseling about the virus should occur after exposure. According to 68.3% of respondents, they have had unprotected sex with HCV-positive individuals.

The findings against each inquiry as well as the results obtained in answer to the aforementioned query are presented in a clear and concise manner in tabular form. Therefore, the majority of respondents are aware of the HCV in this particular situation.

Regarding the sneezing and coughing, the answers to the aforementioned query are included in the tabular form for an easy-to-read overview of the findings in relation to each inquiry. Therefore, in this context, the majority of responders are aware of the HCV.

According to 69.9% of respondents, a mother's child contracts HCV at delivery. The findings against each inquiry as well as the results obtained in answer to the aforementioned query are presented in a clear and concise manner in tabular form.

According to the findings, 41.6% of responders to the aforementioned question believed that using or sharing food and utensils contaminated with chronic HCV can spread the illness. The outcomes and findings against each inquiry are also clearly visible thanks to tabular representation, which is also indicated.

Table 3
Questionnaires Survey

Survey Questions	Yes	No	Mean
Do you think you are safe from acquiring any infection via patients?	326 (84.7)	59 (15.3)	1.1532
Do you think that all PMS should be routinely tested for Hepatitis C?	296 (76.9)	89 (23.1)	1.2312
Do you always use gloves while handling different body fluids?	343 (89.1)	42 (10.9)	1.1091
Do you always correctly dispose of needles/sharps?	348 (90.4)	37 (9.6)	1.0961
Do you have had a history of needle stick injury?	308 (80.0)	77 (20.0)	1.2000
If yes, have you reported it?	276 (71.7)	109 (28.3)	1.2831
Is Hepatitis a viral disease?	366 (95.1)	19 (4.9)	1.0494

15% of respondents disagreed with the 84.7% of respondents who felt they are safe from contracting an infection from the patient. The outcomes and findings against each inquiry are also clearly visible thanks to tabular representation, which is also indicated.

According to the statistics, 76.9% of respondents to the preceding question agreed that PMS should be routinely tested for HCV, while the remainder respondents disagreed.

According to the findings, 89% of respondents to the above question claimed they believed in wearing gloves when handling bodily fluids, while 10.9% of respondents disagreed. The outcomes and findings against each inquiry are also clearly visible thanks to the tabular representation, which is also indicated.

9.6% of respondents stated they do not always properly dispose of needles and sharp objects, compared to 90.4% of respondents who claimed they always do so. For a clear understanding of the outcomes and conclusions in relation to each inquiry, the tabular depiction is also mentioned.

Eighty percent of participants reported having had a needle stick injury. The outcomes and findings against each inquiry are also clearly visible thanks to the tabular representation, which is also indicated.

According to 71.7% of responders to the question above, if there was an illness, it was reported. For a clear understanding of the outcomes and conclusions in relation to each inquiry, the tabular depiction is also mentioned.

95% of those who answered the preceding question believe that hepatitis is a virus. For an easy to understand perspective of the outcomes and findings against each query, the tabular depiction is also mentioned.

Discussions

The theory behind HCV transmission holds that all physiological fluids, including blood, secretions, and excretions aside from sweat, non-intact skin, and mucosal membranes may contain infectious agents. HCV transmission methods may not be appropriate in other settings where universal precautions are implemented, like as childcare centers and schools, as they were intended for usage in hospitals. The purpose of this study was to ascertain the level of knowledge and experience PMS at Gulab Devi Hospital and Children Hospital in Lahore had on HCV transmission. In order to achieve the objectives, the study assessed and determined the level of PMS knowledge and the degree to which PMS adhere to the accepted theory of HCV transmission.

The characteristics impacting the practice of HCV transmission by PMS in public secondary health facilities, such as Gulab Devi Hospital and Children Hospital in Lahore, were also disclosed by the research results. On the basis of the study findings, recommendations have been made for improving HCV transmission practices and knowledge, including PMS infection prevention and control. Based on these recommendations, the federal and state ministries of health may create and implement affordable initiatives to increase adherence to infection prevention and control and increase public knowledge of HCV transmission among PMS.

A comparison of PMS at Gulab Devi Hospital and Children Hospital in Lahore (Pakistan) regarding their knowledge of and practices around HCV transmission. A significant portion of the populace in Faisalabad is served by numerous private medical facilities. Comparative studies will evaluate the level of adherence to HCV transmission in both public and private health facilities.

A comparative evaluation of PMS in tertiary, secondary, and primary health institutions' knowledge and practices regarding HCV transmission was carried out in Gulab Devi Hospital and Children Hospital in Lahore (Pakistan). Health care services are offered by the three tiers of healthcare facilities. Comparative study will look into the extent of adherence to HCV transmission at the three different health facility levels. An analysis of the Gulab Devi Hospital and Children Hospital in Lahore, Pakistan's infection prevention and control program. The findings show that there is little compliance with PMS-mediated HCV transmission, which is a necessary part of infection prevention and control. All facets of infection prevention and control, including administrative issues with IPAC, will be examined in the proposed study.

Conclusion

The paramedical personnel at the Gulab Devi Hospital and Children Hospital in Lahore was not well-informed about the current expansion of universal precautions, also known as transmission of HCV. The respondents were better acquainted with certain parts of the universal precautions. It was not understood that in order for PPE to rule out HCV infections that have already manifested, HCV counseling and testing are necessary.

Most PMS were not aware that their institution has ARV medications for PPE, a PPE guideline, and a PPE focal person. This implies that the required therapy was not given and that occupational exposures were not sufficiently documented.

The responders understood quite well that, regardless of diagnosis, it is best to avoid sharing bodily fluids with any patient in order to prevent the spread of HCV. However, it did

not appear that a large percentage of people followed the requirements for donning PPE as a result of this understanding.

When it came to spreading HCV, PMS at Gulab Devi Hospital and Children Hospital in Lahore were not too enthusiastic. The biggest obstacle to hand washing after direct patient contact was inconsistent access to soap and water. Similarly, frequent use of personal protective equipment (PPE) during operations that could cause splashes or droplets of blood or bodily fluids was significantly hindered by an inconsistent supply. It was shown that among physicians, needle stick injuries and recapping occurred rather frequently. PMS vaccination rates for HBV were not very high.

Recommendations

In the light of findings, following recommendations have been forwarded:

- On-job trainings of the PMS should be conducted
- Counselling session should be initiated to prevent from the transmission of HCV among the PMS.
- Seminars and workshops should be conducted in the general community to raise the awareness level among the general population.
- Stringent implementation of Personal protective equipment (PPE) should be observed.

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