

Risky Behaviors and Conditions To Have Hepatitis B Virus in High School Students

Lise Öğrencilerinde Hepatit B Virüsüne Yönelik Riskli Davranış ve Durumlar

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ABSTRACT

Aim: We aimed to assess risky behavior among young high school students for developing hepatitis B infection.

Methods: This study is a cross sectional survey. This survey has been done during February and March 2007 at the 29 high schools in Erzurum city, Turkey. The sample was selected randomly, and equally weighted according to the total number of students in each school. Out of total 3055 students, 2976 (97.41%) accepted to participate, however 2930 questionnaires were found valid and complete.

Results: The findings showed that all risky behaviors and conditions have significant association with the past history of hepatitis B ($p<0.01$). For instance when we compared the previous history of hepatitis B and risky behavior among students then we found that, 39.4% had surgery and 28.1% didn't have it, 33.8% uses shared razor blades or nail clippers or toothbrush and 28.1% did not, 50.0% had blood transfusion and 27.5% couldn't transfuse, 41.9% were using injections and 26.5% were not them, 36.3% had family history and 24.2% didn't have, 41.1% had tattoo marks and 23.3% didn't have it, and 25.4% of females and 32.9% of males were reported about hepatitis B.

Conclusion: Since surgery and blood transfusions found the main root of transfer of viral hepatitis B so it needs some urgent measures to explore further reasons and make some solution for their prevention.

Key words: risky behavior, hepatitis B, adolescent health

ÖZET

Amaç: Bu çalışmada lise öğrencisi gençlerde hepatit B enfeksiyonu gelişimini etkileyen riskli davranışları incelemeyi amaçladık.

Yöntem: Bu kesitsel çalışma, Şubat 2007 ile Mart 2007 arasında Erzurum ilinde 29 lisede yürütülmüştür. Örneklem her okulun total öğrenci sayısına göre rasgele seçildi. Toplam 3055 öğrenci arasından 2976 (%97,41) öğrenci çalışmaya katılmayı kabul ederken, 2930 anket geçerli ve tam olarak kabul edildi.

Bulgular: Tüm riskli davranışlar ve durumlar geçirilmiş hepatit B öyküsü ile anlamlı düzeyde ilişkili bulundu. Geçirilmiş hepatit B enfeksiyonu olanların riskli davranışları incelendiğinde, operasyon geçirmiş olanların %39,4'ü ve geçirmemiş olanların %28,1'inde, ortak traş bıçağı veya tırnak makası kullanmaların %33,8'i ve kullanmayanların %28,1'inde, kan transfüzyonu olanların %50,0'si ve olmayanların %27,5'inde, enjeksiyon olanların %41,9'u ve olmayanların 26,5'inde, aile öyküsü olanların %36,3'ü ve olmayanların %24,2'sinde, dövmesi olanların %41,1'i ve olmayanların %23,3'ünde, ve kızların %25,4'ü ve erkeklerin 32,9'unda geçirilmiş hepatit B enfeksiyonu bildirilmişti.

Sonuç: Cerrahi girişimler ve kan transfüzyonu viral hepatit B enfeksiyon geçişi için ana yol olarak gösterilmekle beraber, diğer geçiş yollarının ortaya konması için acil önlemler alınmalı ve önlenmeleri için çözümler üretilmelidir.

Anahtar Kelimeler: riskli davranışlar, hepatit B, adolesan sağlığı

Introduction

Hepatitis B virus (HBV) infection represents a major health problem, with 2 billion people infected worldwide and more than 400 million chronic carriers of HBV. Globally it causes about 1.2 million deaths per year due to various complications including chronic hepatitis, cirrhosis, and liver cancer (1-4). It is reported that 3.9 – 12.5% Turkish population are chronic HBV carriers and it is higher in Eastern Anatolia (5,6).

The main modes of HBV transmission are perinatal, horizontal, parenteral and sexual, and the relative rates of these vary throughout the world (7,8). Parenteral and sexual transmission predominates in industrialized countries, whereas horizontal and perinatal transmission predominates in developing countries (7). Horizontal transmission of HBV, particularly among young children, occurs predominantly in countries of the Eastern Mediterranean Region, Africa, India and Turkey (7,9-11). It is claimed that horizontal transmission usually occurs via unapparent percutaneous routes, through cuts and lesions (7,8).

In a survey of tenth graders (aged approximately 16) in Istanbul, 35 percent of boys and 5 percent of girls declared that they had already had sexual intercourse. 38 percent of these boys and 46 percent of these girls reported that they did not use any form of contraceptive, or only used unsafe ones (12). Nonetheless the percentage shows from the literature is about the declaration or acceptance that they have had sexual intercourse but certainly it is still alarming.

European School Survey Project on Alcohol and Other Drugs (ESPAD) conducted in six cities in 2003 by the Ministry of Health and United Nations Office on Drugs and Crime (UNODC) suggested that 4 percent of high school students in Turkey had used cannabis, compared to a European average of 21 percent, while 3 percent had used other illicit drugs, 4 percent had used inhalants, and 3 percent had used tranquilizers and sedatives without a doctor's prescription (13). However, a 2004 survey of 15-17 year-old high school students in Istanbul pointed to considerably higher rates of illicit and licit substance use, concluding that the use of illegal substances,

headed by ecstasy was on the rise and that it was spreading to broader socioeconomic groups (11). A study of adolescents applying to a rehabilitation center in Izmir in 2005 and 2007 pointed to "a considerable increase in the use of cannabis and ecstasy" (14).

Some other reports also confirmed that Turkey is suffering with the problem of drug abuse and the current situation about the methods for using drugs not fully discovered yet (15). However it pointed out the prevalence of some risky behavior of youth in Turkey.

Based on above evidences it is discernible that our young population has some risky behavior and the studied area has high prevalence of hepatitis B virus (HBV) which certainly have high risk to transfer of HBV (5,6). We carried out this study among young high school students to assess whether they have any risk behavior to have hepatitis B infection.

Methods

Study Design and Setting

A cross sectional survey has been done during February and March 2007 at the 29 high schools in Erzurum city center, Turkey. Erzurum is one of the largest cities in eastern Turkey with 490 thousand inhabitants in the city center and has good opportunities for young children to enter to the schools. At the time of the study, 17598 students in the ninth to eleventh grades were studying in 29 high schools in Erzurum city center. Since elementary education in Turkey starts at the age of 7 years so students in the ninth to eleventh grades are expected to be 16-18 years of age.

Study questionnaire

Data was collected with a 10-item questionnaire that developed by the researchers. Questions consisted of demographic data and risk factors regarding viral hepatitis B.

Sampling and application

The study questionnaire was applied to a sample of 87 classes of 29 schools. These classes were selected randomly, and weighting was according to the total number of students in each school. All students in the classroom were asked to participate

and an informed verbal consent had taken from them and written information about study was also mentioned in the questionnaire. Participation was on a voluntary basis, and data collection was conducted on an anonymous manner. Out of total 3055 students, 2976 (97.41%) accepted to participate, however 2930 questionnaires were found valid and complete.

Statistical analysis

All analyses were carried out with the Statistical Package for Social Sciences version 17. Categorical variables were expressed as frequencies and percentage. Chi square test was carried out for bivariate comparisons. A $p < 0.05$ was considered statistically significant.

Results

Table 1 shows that study population predominantly consist of males (55.3%) and 10th grade (41.3%) students were involved more as compared to other grades. Of total, 29.5% have had hepatitis B.

Table 1. Demographic features of subjects

Demographic features	Frequency	Percentages
Gender		
Males	1619	55.3
Females	1311	44.7
School level		
9 grade	1068	36.5
10 grade	1209	41.3
11 grade	653	22.3
Hepatitis B		
Yes	758	29.5
No	1811	70.5

As seen in Table 2, there is a significant differences ($p < 0.01$) among all questions related to their risky behavior and other means of transfer of Hepatitis B infection. When we compared the previous history of hepatitis B and risky behavior among pupils then we found that, 39.4% had surgery and 28.1% didn't have it, 33.8% uses utilized razor blades or nail clippers or toothbrush and 28.1% didn't utilize it, 50.0% had blood transfusion and 27.5%

Table 2. Comparison of past history of hepatitis B and risky behaviors/conditions in high school students

Risky behavior / conditions		Did you have hepatitis B previously?		$\chi^2; p$
		Yes n / (%)	No n / (%)	
Did you have ever use together with someone else's razor blades, toothbrushes or nail clippers and other tools?	Yes	228 / (33.8)	447 / (66.2)	7.545; 0.006
	No	524 / (28.1)	1338 / (71.9)	
Have you had surgery?	Yes	114 / (39.4)	175 / (60.6)	16.023; <0.001
	No	635 / (28.1)	1628 / (71.9)	
Have you received a blood transfusion at any stage of your life?	Yes	103 / (50.0)	103 / (50.0)	46.267; <0.001
	No	644 / (27.5)	1698 / (72.5)	
Do you have a drug use by injection and continuously made?	Yes	204 / (41.9)	283 / (58.1)	44.733; <0.001
	No	547 / (26.5)	1515 / (73.5)	
Did you have a traffic accident or other injury at any stage of your life?	Yes	326 / (33.9)	637 / (66.1)	15.830; <0.001
	No	416 / (26.4)	1157 / (73.6)	
Do you have in your family who has had hepatitis?	Yes	375 / (36.3)	659 / (63.7)	42.860; <0.001
	No	351 / (24.2)	1102 / (75.8)	
Have you tattoo?	Yes	101 / (41.1)	145 / (58.9)	34.400; <0.001
	No	324 / (23.3)	1068 / (76.7)	
Gender	Female	294 / (25.4)	863 / (74.6)	16.972; <0.001
	Male	464 / (32.9)	948 / (67.1)	

couldn't transfuse, 41.9% were using injections and 26.5% were not them, 33.9% had traffic accidents or other injuries and 26.4% didn't have any injury, 36.3% had family history and 24.2% didn't have, 41.1% had tattoo marks and 23.3% didn't have it, and 25.4% of females and 32.9% of males were reported about hepatitis B.

Discussion

This survey depicted that in Eastern region i.e., young population has some high-risk behaviors. This is reinforced by some other literature of developing countries including Turkey (7,9-11). The prior literature demonstrated that the studied area has high prevalence of HBV (5,6) therefore there is a high risk to transfer of this virus, which further becoming challenge to health policy makers here in this area.

There are several ways by which the hepatitis B can be transferred from person to person and it is emphasized and claimed that horizontal transmission usually occurs via unapparent per-cutaneous routes through cuts and lesions (7,8). In our study also depicted that who have been diagnosed as a case of hepatitis B previously have used someone else's razors or blades.

The other risky behavior also may lead to transfer the virus as it is also demonstrated in results of our studies (7, 8). It showed that who had surgery before and transfused blood developed hepatitis as compared to other group. Though this cross-sectional study doesn't show cause and effect relation however can show some association and there are similar results of other studies which also supported results of our study (16). Nevertheless it is still alarming and may require further assessment and evaluation of the process of transfusion at the laboratory of Eastern region.

Further our study showed that those who have had family history of hepatitis had more chance to developed hepatitis. A similar result showed another study in China that family history is also one of the risk factors among adult population (15). Therefore it is suggested that a comprehensive screening program should be developed for at least those families who have positive family history.

The males conceivably have higher risk than

females that also illustrated in our study (17,18). Another large study depicted that male are more involved in sexual activities (19). In Turkey, there is no difference in life style of males and females and also the risky behavior; therefore gender differences could not be a hurdle to educate young population.

The tattoo is mentioned one of the risk factors which is also the case in our study as results highlighted that who have tattoos had have history of hepatitis (17). Perhaps some recent studies (18,20) showed a little different results neither recent tattoo nor piercing was a risk factor for HCV or hepatitis B virus. Although the results are different from the earlier studies' results but still have association with hepatitis B problem in Eastern region of Turkey.

It was also illustrated by our study that number of injections was associated with hepatitis B infection and those who have had number of injections previously for any reasons have more chance to develop hepatitis B. This result is second by another study done by in Egypt that shows who have more than 10 lifetime injections have higher association with Hepatitis C & B infection (21).

Though the sample size was large and there is less chance to have significant results by chance however the study has some limitations such as for instance we couldn't confirm about confirm about the diagnosis and believed on answers of subjects which may have recall biases which may require some larger scale case-control studies.

Conclusion

Conclusively it is revealed that our high school male population that belong to a young population of Eastern Anatolia have high prevalence of some important risky behaviors which may lead to develop hepatitis B virus. Thus it is required that policy makers should focus on this important issue in order to prevent hepatitis B virus particularly and other communicable diseases as a whole.

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