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ABSTRACT Pakistan is considered as an intermediate zone of hepatitis B virus (HBV) infection, with an estimated population prevalence of 2–7%. This study assessed knowledge about HBV and vaccination among women of childbearing age in a rural setting of Punjab province, Pakistan. In 2012 a cross-sectional, community-based survey of 430 women was conducted using a semi-structured questionnaire. Less than half of the women (43%) surveyed had correct knowledge about HBV vaccination, and knowledge was especially poor among the low socioeconomic groups. Age, level of education and obstetric history of the respondents were significantly associated with knowledge about HBV and its vaccination. The main sources of information regarding HBV vaccination were lady health workers (53%) and traditional birth attendants (22%). Health promotion and behaviour change campaigns highlighting the importance of hepatitis B vaccine need to be designed to meet the needs of rural areas where women have little exposure to the mass media.

Connaissances sur la vaccination contre l'hépatite B chez des femmes en âge de procréer : étude transversale dans un district rural du Pendjab (Pakistan)

RÉSUMÉ Le Pakistan est considéré comme une zone intermédiaire pour l'infection par le virus de l'hépatite B, et l'on estime que la prévalence dans la population est comprise entre 2 et 7 %. La présente étude a évalué les connaissances sur le virus de l'hépatite B et la vaccination chez des femmes en âge de procréer en milieu rural dans la province du Pendjab (Pakistan). En 2012, une enquête communautaire transversale a été menée auprès de 430 femmes au moyen d'un questionnaire semi-structuré. Moins de la moitié des femmes (43 %) ayant participé à l'enquête avaient des connaissances exactes sur la vaccination contre le virus de l'hépatite B, et les connaissances étaient particulièrement médiocres dans les groupes socioéconomiques inférieurs. L'âge, le niveau d'études et les antécédents obstétricaux des répondantes étaient significativement associés aux connaissances sur le virus de l'hépatite B et la vaccination. Les principales sources d'informations sur la vaccination contre le virus de l'hépatite B étaient les femmes agents de santé (53 %) et les accoucheuses traditionnelles (22 %). Des campagnes de promotion de la santé et de modification des comportements soulignant l'importance de la vaccination contre le virus de l'hépatite B sont à élaborer pour répondre aux besoins des zones rurales, où les femmes sont peu exposées aux médias.

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Introduction

Many Asians are infected with hepatitis B virus (HBV) at birth or in early infancy from HBV-infected mothers (1). Although the risk of intrauterine infection is relatively low because the fetus is protected from HBV by the placenta, horizontal transmission from fathers, mothers and playmates with HBV is a significant factor in transmission of this deadly disease. Evidence from long-term follow-up studies on the impact of the implementation of universal HBV vaccination programmes has clearly demonstrated that prevention of mother-to-child transmission is the mainstay for the control of HBV infection in the Asia-Pacific region (2,3).

Improving knowledge about vaccination against HBV among women of childbearing age is crucial in reducing the HBV infection rate among newborns (4,5). Nonetheless, prevention of vertical transmission from HBV-infected mothers to their children reduces HBV-related mortality in the long run. This can be achieved by the birth-dose of hepatitis B vaccine to newborns (6).

A recent study has reported a very high prevalence of HBV (12%) among pregnant women in Pakistan (7). The rural areas of Pakistan—facing low literacy levels, minimal exposure to the mass media and bogus health promotion campaigns—suffer even more. There is a scarcity of research in Pakistan about the knowledge of HBV vaccination among women of childbearing age. Although there are many factors that need to be studied it is important to assess the knowledge of mothers regarding prevention of HBV transmission in endemic areas, especially in rural parts of Pakistan. This study was designed to assess knowledge about HBV and vaccination and the determinants of correct knowledge among women of childbearing age in a rural setting of Punjab province, Pakistan.

Methods

This was a descriptive cross-sectional study conducted from September to November 2012.

Study setting

Khanbela union council was selected for the study as it is a very remote and rural area of the Rahim Yar Khan district in the southern part of Punjab province; around 80% of the population live in rural areas. Literacy rates among the population are very low (males 43% and females 22%) (8). The area is predominantly agricultural and receives moderate rainfall. Therefore, in dry spells, it faces drought, food shortages, hunger and poverty.

Sampling

The formula below was used to determine the sample size (n). P, the proportion of women who have adequate knowledge of hepatitis B, was assumed to be 0.50 to obtain the maximum sample size, with z = 1.96 for a 95% confidence interval, α = 5%. The P-value was taken to be significant at 0.05, and the SE is the standard error that predicts the difference estimated and true proportion by not more than 5%.

The required sample size was 384 which was increased to 430 to allow for cluster effects (9).

Women aged 14–45 years from the study area were enrolled if they were willing to participate in the study, were not suffering from any acute illness and were not busy with any other commitments in the family. A 2-stage randomization was used for sampling. First, the households were randomly selected using the right-hand rule. In no woman of childbearing age was available in a particular house, the next house was visited. If more than one eligible woman were found in a household, the “pick from hat” method was used for selecting one respondent. The response rate was 100%.

Ethical considerations

All participants were assured about the confidentiality and anonymity of their responses and they gave written consent to participate. The study was approved by the institutional review board at the parent organization of the principal investigator. Filled forms were kept under lock and key and did not reveal the respondents’ identity.

Data collection

A validated questionnaire was adapted, translated, pre-tested and used for this study (10). Pre-testing of the questionnaire was done to check the format, language, sequence and comprehension of the questions, as well as to measure the duration of one interview. The final data collection instrument was slightly modified and then adapted by adding a few open-ended questions to assess knowledge about hepatitis B vaccination. The reliability and validity of the tool was again checked by the principal investigator, using Cronbach alpha test and was found acceptable, i.e. with less than 5% error.

Knowledge about hepatitis B was assessed by asking about sources of information, mode of transmission of disease, signs and symptoms of hepatitis and knowledge about the vaccine; questions were closed-ended with respondents given a list of options. There were 18 closed and 5 open questions (for triangulation of the response from both qualitative and quantitative responses). The questionnaire took about 30 minutes to complete and was guided by the data collectors.

A trained team of 6 female data collectors administered the questionnaire to the selected women in their homes. The data collection was supervised by the principal investigator, who conducted reliability checking of a sample of completed questionnaires. This was done by selecting forms to be rechecked for each of data collectors; assigning the task of reliability checking to another interviewer; data collection of a set of variables by the nominated person; and verification of reconciliation of the primary and reliability checking forms by the principal investigator. Greater than 5% discrepancy led to rejection of the original form and required refilling the questionnaire. As a result of reliability checking, it was ensured that the interviewers

actually did visit the specific household and interviewed the eligible respondent. The overall discrepancy was well below 5%.

Data management and analysis

Each knowledge question were scored as 1 for a correct response and 0 for an incorrect response. The total score range for an individual was therefore 0–20, with scores ≥ 8 defined as correct knowledge and scores

The data were cleaned and checked for consistency using SPSS, version 17. The association of selected independent variables with correct knowledge of the disease was analysed by both general descriptive and inferential statistics, using bivariate analysis.

Results

The mean age of the respondents was 28.7 (standard deviation 7.1) years; 72% were married, 56% were illiterate, 41% were housewives and 78% had a monthly income below Pakistani rupees (PkRs) 10 000 (about US$ 90) (Table 1).

Knowledge about hepatitis B

Only half of these women of childbearing age (48%) had heard of hepatitis B and one-third (34%) had knowledge of the vaccine used for prevention. The main sources of information about hepatitis B vaccination were lady health workers (53% of respondents), followed by trained birth attendants (22%); other sources included relatives (5%), friends (8%) and the media (12%), e.g. newspapers. Less than half of the women (44%) knew that HBV was transmitted via blood and 22% via sexual intercourse. One-fifth (20%) had the belief that hepatitis B was transmitted through water, and the some thought that the disease can be transmitted through food (13%), mosquito bites (5%) and heat (3%). A majority of the 310 married women (72%) agreed that hepatitis B vaccination is important, whereas only 26% of never married respondents had the same opinion.

Factors associated with knowledge

Overall 43 of women had correct knowledge about HBV transmission and vaccination. Age, level of education and obstetric history (i.e. pregnant or non-pregnant at the time of interview) of the respondents were significantly associated with knowledge about HBV and vaccination, but marital status, occupation and income were not (Table 1). Younger women, i.e. those aged 26–35 years (20%) and 14–25 years (18%), were more likely to have correct knowledge than those aged 35–49 years (7%) (P

Per ceptions about hepatitis B vaccination

Some of the open-ended questions recorded interesting answers with regard to perceptions about vaccination for hepatitis B prevention. A number of myths related to the vaccine emerged in responses, for example: “This vaccine is only meant for pregnant or married women”, “The vaccine will be more effective in pregnant women”, “Hepatitis B vaccine campaigns are just a show-off”, “Boiling water can prevent hepatitis B” and “Not eating outside is enough for hepatitis B prevention”.

Discussion

Hepatitis B is a common and easily transmitted disease that has serious long-term consequences. It is established that this deadly disease can be prevented by immunization, especially of women of childbearing age, who constitute a large segment of the vulnerable population. Our study showed that knowledge regarding hepatitis B and vaccination among women of childbearing age in a rural region of Punjab was strongly associated with education level. Since a majority of the participants were illiterate, it is not surprising that the overall level of knowledge regarding hepatitis B and its vaccination was poor or incorrect. Working with illiterate populations on such public health issues can be very challenging (11). In 2008, another study from the same areas reported similar findings on hepatitis B vaccination knowledge among women of reproductive age (12). So not much has changed since then, despite interventions by government and nongovernmental organizations and the hepatitis B vertical programme which has a significant budget for health promotion and awareness raising. The interventions are perhaps weak in design, are not contextual and are not addressing the core issues.

Most of the women of childbearing age in this study did not know the exact causes of hepatitis B and had a number of incorrect beliefs.. These findings are similar to another study conducted in Pakistan that reported very low knowledge about the spread of infection among hepatitis B patients (13). Studies in urban settings in Pakistan have also shown poor knowledge among Pakistani women and misconceptions about hepatitis B transmission (12,14).

Married women were more knowledgeable about HBV than unmarried women, although the difference was not statistically significant, and this corroborates another study conducted in Pakistan (15). Correct knowledge can lead to positive attitudes and subsequently good practices pertaining to hepatitis B prevention (13). Poverty is another major determinant in this regard. Low socioeconomic status jeopardizes other factors such as employment, lifestyle, nutrition, access to information and education and capacity to employ hygiene measures (16,17). In our study too, a higher level of education had a strong significant association with knowledge of hepatitis and its vaccine, and those who were employed in government service or private business tended to have better knowledge than housewives, the jobless and labourers.

Very few women in our study knew that HBV can spread through sexual intercourse and contact with infected blood products through transfusion, sharing of needles and unsafe injecting equipment. Women in this rural area of Punjab province reported that lady health workers or trained birth attendants were their main source of information about HBV. Studies elsewhere show that people rely on locally available health personnel for information on a variety of health issues (18,19). Health professionals, community health workers, teachers, volunteers and local media have a huge responsibility to address the knowledge gaps and in addressing the myths related to the subject. This problem has been observed in other south and south-east Asian countries (20,21). Community health workers have good rapport with the communities and therefore their knowledge as well as the role needs to be strengthened in this regard (22).

Conclusion

Misconceptions and myths related to HBV transmission and vaccination in rural Pakistan must to be addressed. Better health promotion and behaviour change campaigns are needed. Lady health workers and community midwives are likely to be important components of the national programme on hepatitis, to assist in the efforts to combat ignorance about the disease and its prevention.

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