

Recognizing the Underlying Social Implications of HBV Infection as Future Health Care Providers



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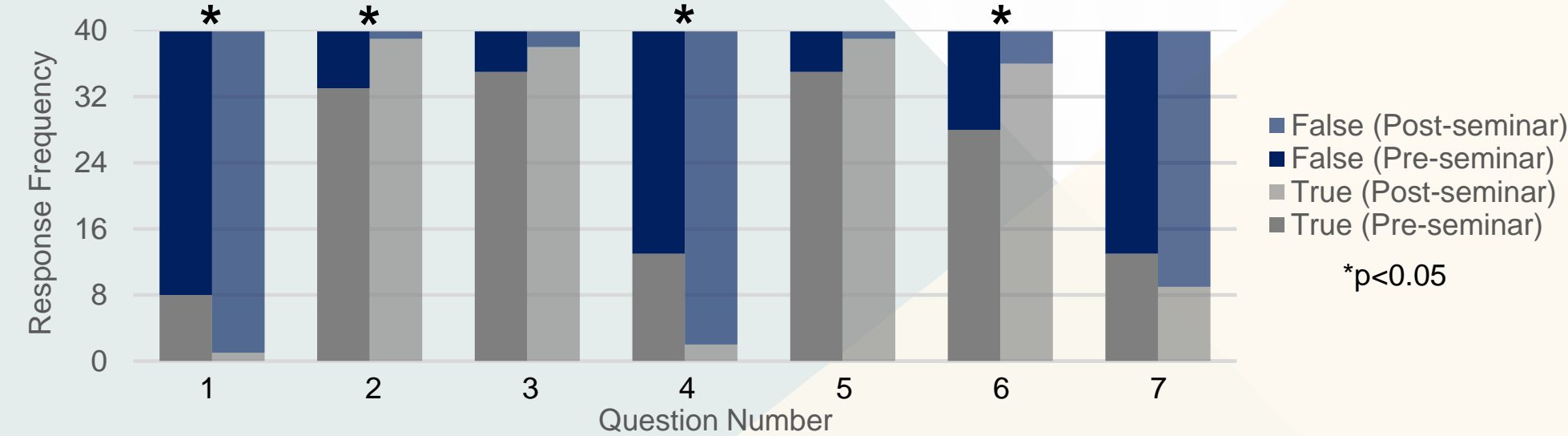
INTRODUCTION

- A common route of hepatitis B virus (HBV) infection in the Asian American Pacific Islander population is vertical transmission from mother to child.¹
- Current limited understanding of HBV disease transmission contributes to fear of close contact and stigmatizes affected individuals as drug users or sexually promiscuous.²
- To reduce HBV-related health disparities, there is a need to increase awareness among medical students of the social implication HBV imposes on a diverse patient population.
- Objective:** Using pre- and post-seminar surveys, we aim to assess HBV-related knowledge and attitudes among future health care providers at Wayne State University School of Medicine (WSUSOM).

METHODS

- 24 first-year and 16 second-year medical students (n=40) at Wayne State University School of Medicine (WSUSOM) attended a one hour-long virtual HBV seminar and completed a pre-seminar survey.
- The survey consisted of questions derived from previous studies on basic HBV knowledge and attitudes of medical students.^{3,4}
- The seminar consisted of thirty minutes of didactics from an HBV research scientist from University of Michigan Health System followed by case studies in randomly assigned breakout rooms.
- Participants reconvened to discuss case studies and completed a post-seminar survey similar to the pre-seminar survey.
- Paired t-test and McNemar's test for paired proportional differences were used to compare pre- and post-seminar results.

RESULTS



Question Number	True or False Question Statement
1	Hepatitis B can be spread from person to person by eating food prepared by an infected person.
2	Hepatitis B can be spread from person to person by sharing a toothbrush or razor with an infected person.
3	An infected mother may transmit Hepatitis B to her newborn baby during delivery.
4	Most chronic Hepatitis B infection cases are symptomatic.
5	People with Hepatitis B can be infected for life.
6	A post-exposure prophylaxis is available for Hepatitis B.
7	Pregnancy is a contraindication for the use of Hepatitis B vaccine.

FIGURE 1. Comparison of number of students selecting true or false for each of the seven question statements in pre- and post-seminar surveys.

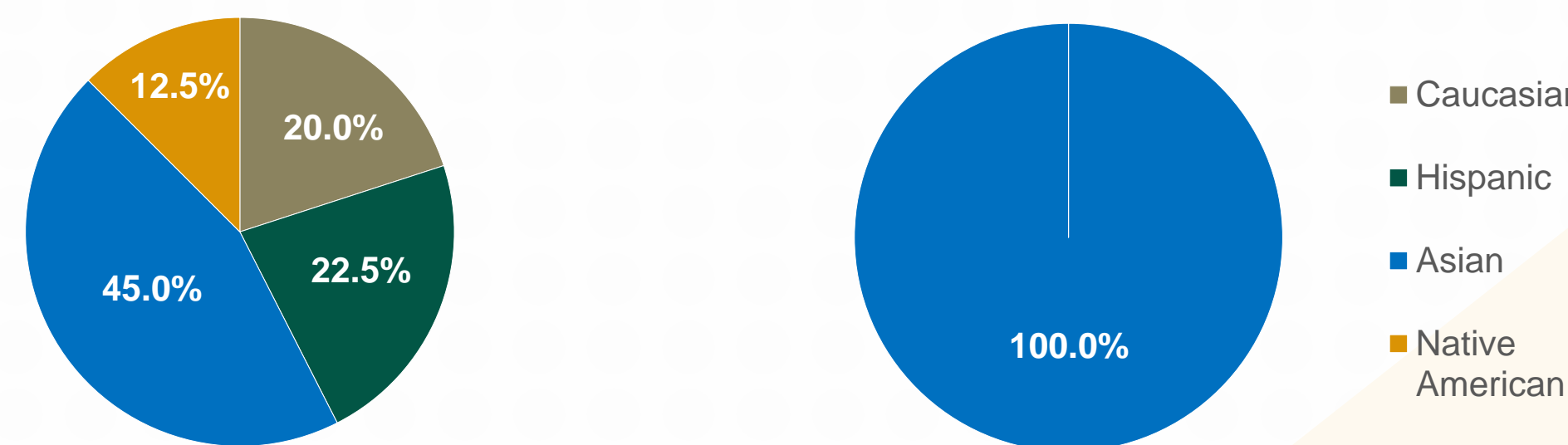


FIGURE 2. Pre- (left) and Post- (right) Seminar Response: Which cultural group has the highest prevalence of Hepatitis B?

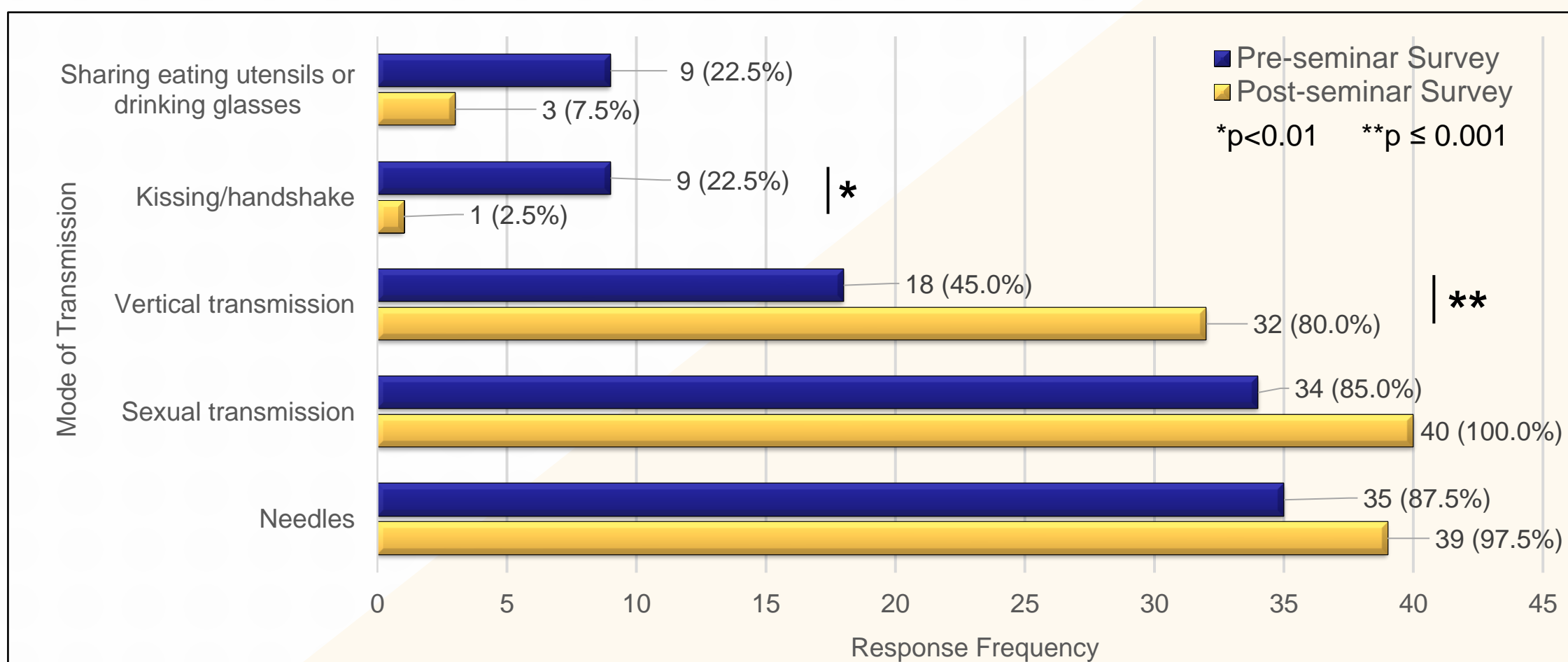


FIGURE 3. Pre- and Post-Seminar Response: How is HBV typically transmitted? (Select all that apply)

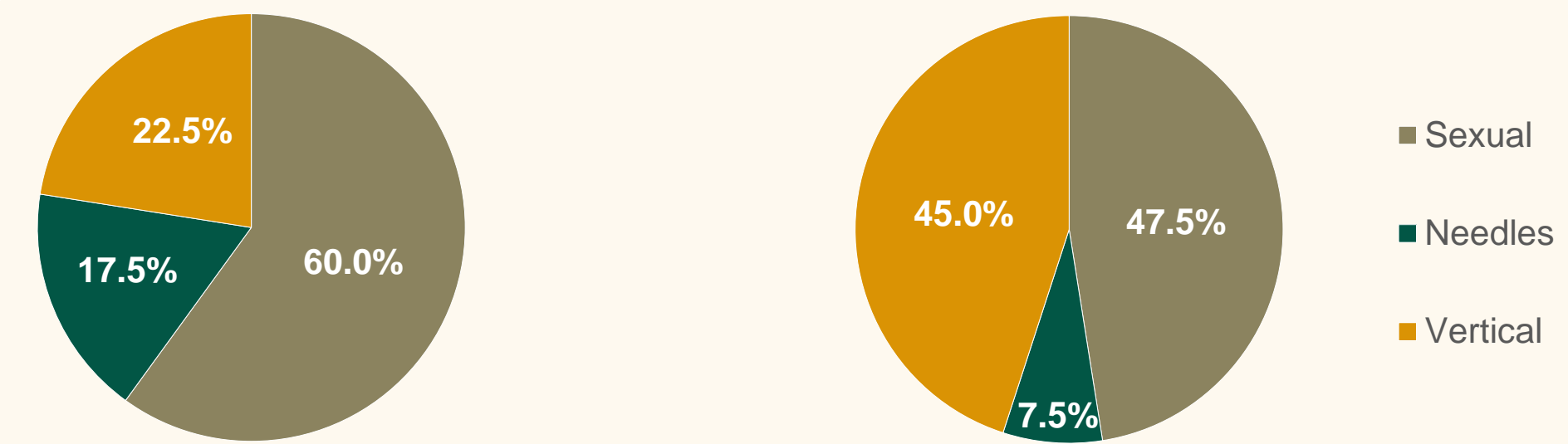


FIGURE 4. Pre- (left) and Post- (right) Seminar Response: If a young Asian American woman presents with clinical symptoms of Hepatitis B, which of the following is a likely transmission route of her infection?

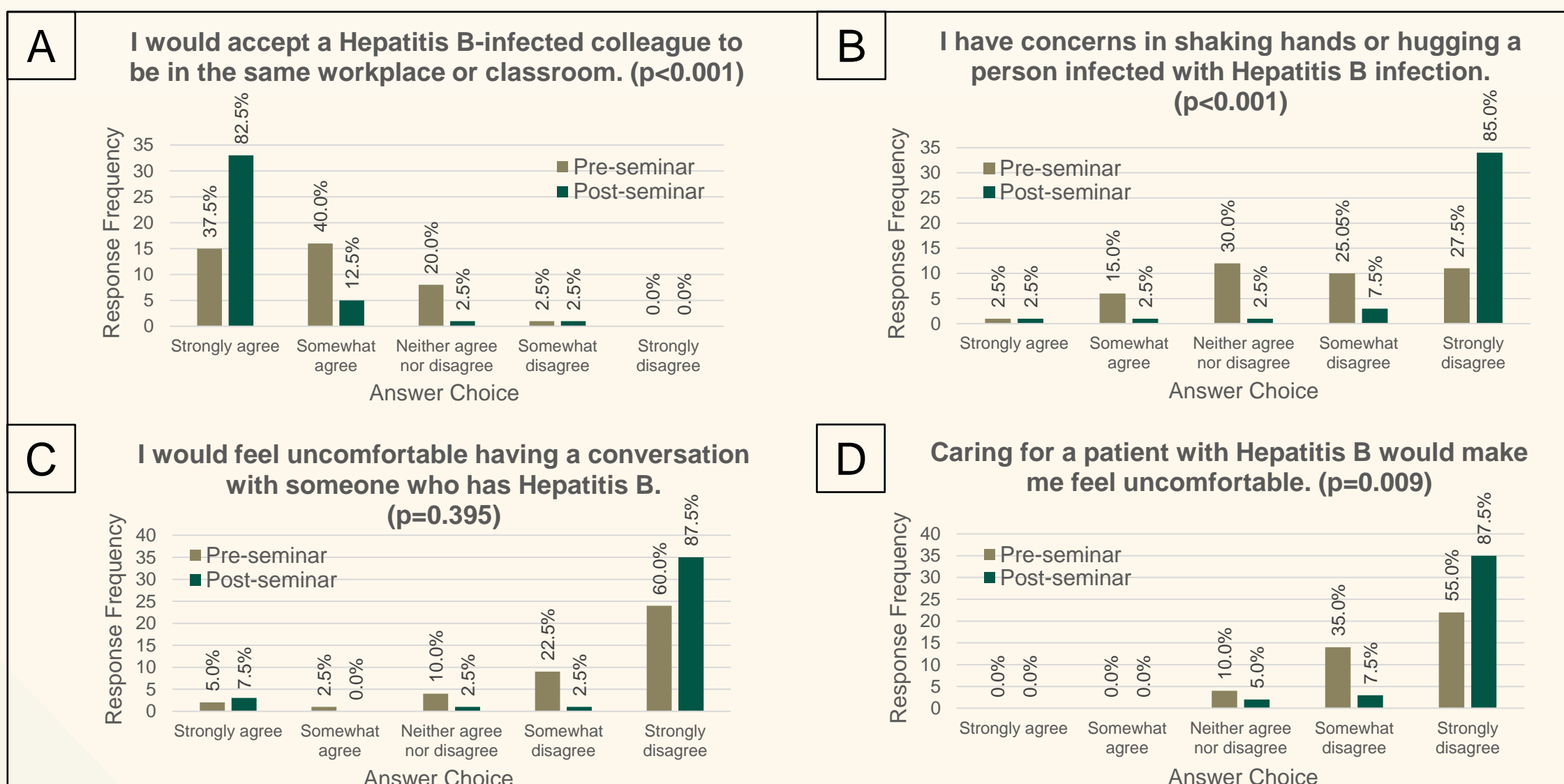


FIGURE 5. Comparison of pre- and post-seminar Likert scale responses to four scenarios a medical student may encounter.

DISCUSSION

- The initial preferential selection of horizontal (sexual) transmission in Figure 4 may reflect preconceived notions towards patients when students encounter a clinical case of infectious disease.⁵
- Medical students' attitudes toward people infected with HBV greatly improved ($p < 0.001$) with 33 (82.5%) participants in the post-seminar survey strongly agreeing to accepting an HBV-infected colleague to be in the same workplace or classroom compared to the 15 (37.5%) participants strongly agreeing in the pre-seminar survey (Fig 5A).
- Only 11 (27.5%) participants strongly disagreed to having concerns shaking hands or hugging a person infected with HBV in the pre-seminar survey, whereas post-seminar survey responses demonstrated 23 (57.5%) more participants ($p < 0.001$) strongly disagreeing to the statement (Fig. 5B).
- After the seminar, 13 (32.5%) more medical students strongly disagreed that caring for a patient with HBV infection would make them feel uncomfortable ($p = 0.009$) (Fig. 5D).
- In Figure 2, post-seminar survey demonstrates a significant increase in awareness that the cultural group with the highest prevalence of Hepatitis B is Asians ($p \leq 0.001$).
- Overall consolidation in HBV understanding (Fig. 1-5) suggests the use of education seminars in improving HBV knowledge, consequently improving negative attitudes towards people infected with HBV that may arise from inadequate knowledge.

CONCLUSION

- Improved HBV knowledge and significant change in attitude towards people infected with HBV after the virtual seminar may be associated with less stigmatizing attitudes towards a worker or patient with HBV infection.
- A significant change in HBV-related knowledge and attitudes demonstrates the need to increase awareness of possible preconceived notions towards patients with infectious diseases.
- Ongoing studies will analyze the difference between first and second-year medical students' attitudes toward people with HBV infection to address the potential limitation of previous HBV knowledge from the second-year medical school curriculum.
- Future studies may assess HBV knowledge and attitudes of clinical-year medical students compared to pre-clinical year medical students.

REFERENCES

- Smith-Palmer J, Cerri K, Sbarigia U, et al. Impact of Stigma on People Living with Chronic Hepatitis B. *Patient Relat Outcome Meas.* 2020;11:95-107. doi:10.2147/PROM.S226936
- Lin SY, Chang ET, So SK. Why we should routinely screen Asian American adults for hepatitis B: a cross-sectional study of Asians in California. *Hepatology.* 2007;46(4):1034-1040. doi:10.1002/hep.21784
- Al Wutayd O, AlRehaili A, AlSafrani K, Abalkhail A, AlEidi SM. Current Knowledge, Attitudes, and Practice of Medical Students Regarding the Risk of Hepatitis B Virus Infection and Control Measures at Qassim University. *Open Access Maced J Med Sci.* 2019;7(3):435-439. doi:10.3889/oamjms.2019.118
- Al-Hazmi A. Knowledge, attitudes, and practice of medical students regarding occupational risks of hepatitis B virus in college of medicine, aljouf university. *Ann Med Health Sci Res.* 2015;5(1):13-19. doi:10.4103/2141-9248.149765
- Van der Scheun FC, Nagelkerke MCM, Kilaru A, Shridhar V, Prasad R, van der Werf TS. Stigma among healthcare workers towards hepatitis B infection in Bangalore, India: a qualitative study. *BMC Health Serv Res.* 2019;19(1):736. doi:10.1186/s12913-019-4606-z

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