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## Understanding Knowledge and Barriers Related to Hepatitis B for Vietnamese Nail Salon Workers in the City of Philadelphia and Some of Its Environs

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### Abstract

In the United States (U.S.), up to 2.2 million individuals have been chronically infected with hepatitis B virus (HBV). Many nail salon workers are at risk for HBV as they are coming from high-risk and traditionally underserved communities. To understand barriers and knowledge associated with HBV in the Vietnamese nail salon community, the Health Belief Model (HBM) was used to qualitatively assess the health needs for the prevention of HBV among Vietnamese nail salon workers through focus groups and interviews (N=19). Results revealed several themes that highlight barriers within the Vietnamese nail community. Major themes were the lack of knowledge related to hepatitis B, including significant misconceptions related to symptoms, and how hepatitis B is transmitted and prevented. There were also several barriers to health care access within the Vietnamese nail community including the cost of health care, long work hours, lack of insurance and lack of understanding of current community resources. Additionally, discrimination and stigma related to those infected with hepatitis B emerged as a theme from this data. Those interviewed also noted that the nail training and licensing they received did not highlight hepatitis B and other infectious diseases that can be spread within the nail salon.

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**Conflict of interest**

The authors declare that they have no conflict of interest relevant to this article to disclose.

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## Keywords

Hepatitis B; Nail Salon; Qualitative Research; Vietnamese; AAPI; Population Health; Health Disparities

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## INTRODUCTION:

Worldwide, hepatitis B virus (HBV) is the most prevalent liver disease and leading cause of cirrhosis, liver failure, and liver cancer (Ryerson et al., 2016; El-Serag, 2012). In the United States (U.S.), up to 2.2 million individuals are chronically infected with HBV (Cohen, 2008) and only 25–30% are aware of their infection. Screening rates remain low among high-risk communities, even though there are guidelines advising risk-based screening (US Preventive Services Task Force, 2014; CDC, 2018). Implementation of screening guidelines has been low, and HBV testing is not typically included in bloodwork during routine check-ups, even for high-risk individuals (McPhee, 2000; Jenkins, 1998; Jenkins, 2000; Zhou, 2003). Additionally, the HBV vaccination coverage rate among adults in the U.S. remains low, at just 25% (Chen, 2010, Williams et al, 2015). HBV infection disproportionately impacts Asian Americans and Pacific Islanders (AAPI), partly due to high prevalence rates of HBV in Asia and the Western Pacific and the asymptomatic nature of the infection (Cohen, 2008; Kowdley, 2012). Within Philadelphia, PA over 25,000 individuals and 8–12% of local Vietnamese residents are estimated to be living with HBV (Hep B United Philadelphia, 2018, PhillyHepatitis, 2018).

In the Vietnamese immigrant and refugee community, nail salons are the core economic support (Ng, 2018). Many nail salon workers are at risk for HBV as they are coming from high-risk and traditionally underserved communities. Blood to blood transmission of HBV within the nail salon is also a hazard nail salon workers face in the workplace (Yang et al., 2011; Quach et al., 2011). Previous research and community-based input has identified health disparities and gaps in access to care for nail salon workers who come from AAPI populations (McPhee et al., 2003). The estimated number of manicurists working in the U.S. is up to 439,000 individuals and 56% are Vietnamese (NAILS Magazine, 2017; UCLA Labor Center, 2019). Philadelphia has the 9<sup>th</sup> largest population of Vietnamese among U.S. cities and at least 46% of nail salons in Philadelphia are owned by Vietnamese, confirming that the number of Vietnamese nail salon workers in Philadelphia is high (Huynh et al., 2019).

In an effort to work towards reducing the barriers and health disparities associated with HBV in the Greater Philadelphia area, this study aimed to qualitatively assess the health needs for the prevention of HBV among Vietnamese nail salon workers through focus groups and interviews. The Health Belief Model (HBM) was used to guide questions asked to understand individual knowledge associated with hepatitis B (*perceived susceptibility*), individual perception of severity and risk of HBV (*perceived severity*), individual understanding of benefits to screening (*perceived benefits*) and barriers to act on screening or vaccination among nail technicians within this at-risk community (*perceived barriers*).

and recommendations for effective public health outreach to raise awareness (*cues to action*) (Becker, 1941; Rosenstock, 1974; Edberg, 2017).

## Methods:

We recruited Vietnamese nail salon workers, including technicians and owners, who work for salons in the Philadelphia metro area and southern New Jersey aged 18 and older. Participants were part-time, full-time, current and former nail technicians. Our primary recruitment strategy was through a community-based organization serving the Vietnamese community using snowball sampling. We conducted five individual interviews with nail salon owners, five individual interviews with technicians and two focus groups with the technicians between Feb 2019 – June 2019. Prior to participating in the interviews and focus groups, each participant was briefed about the informed consent process in Vietnamese from our community bilingual researcher (NV), then consented orally and in writing. Each participant also completed a brief demographic questionnaire before engaging in the focus groups and interviews. Interviews were recorded in Vietnamese, transcribed in Vietnamese and translated into English. A codebook was created systematically through literature review and reading a subsample of the initial interview transcripts by two study staff (Supplemental Material). Data were coded by four researchers independently and any discrepancies within the coding were resolved through discussion. Agreement between coders ranged from 82% –100% for all codes within this study. All codes and data were organized in NVivo 12.5.0 software (QSR International). This study was approved by the Drexel University Institutional Review Board.

## Results:

All focus groups and interviews were conducted in Vietnamese (N=19, Table 1, Supplemental Material). The mean age of participants was 43, with a range of 27 to 65 years. The majority of the participants were female (N=13) and had been working in the nail industry 9 years. Most of the participants were nail salon workers (N=11) and five of those interviewed were nail salon owners with two unreported. The majority (84%) of those interviewed worked full time (N=16). Coding from interviews and focus group revealed several themes and HBM constructs including; the lack of knowledge related to HBV (perceived susceptibility and perceived severity), barriers to health care access within the Vietnamese nail technician community (perceived barriers), discrimination and stigma related to those infected with HBV (perceived barriers), nail training and licensing, and recommendations from those interviewed for effective public health messaging in this community.

## Knowledge

Interviews revealed an overall lack of knowledge related to HBV. Many individuals expressed misconceptions related to transmission, symptoms and prevention of HBV. Several participants thought that HBV is spread “*through food and water intake*,” one suggested transmission occurs through “*mosquito*,” and others thought HBV was “*spread genetically*.” Another person noted, “*it is a type of sickness that is considered normal. It does not spread easily via any vectors.*” While many disclosed that they do not know much

about HBV, several individuals said, *“I have never seen it, so I don’t know much about it.”* A few individuals interviewed did know basic information related to HBV because they had personal experience. One individual said she had family members with liver-related issues and said, *“but it is genetic, my maternal grandfather has liver related issue... a couple of my uncles, two of my uncles also in Vietnam, one uncle passed due to liver disease, one uncle in Canada also passed because of liver disease. My mother also has liver issue, however, due to being female, it does not affect her much, only male. That is the extent of my understanding.”* This quote highlights the misconception that HBV is genetically passed on to family members.

One participant who noted a personal experience with a liver-related illness described, *“I went to be screened for hepatitis at a community charity screening event and they say I have it. So, then I went to the doctor, and the doctor said that I have to go to a big hospital because the family doctor does not treat that. So, when I went to the hospital, the hospital said... it’s not hepatitis B but I have pebbles in the liver...it caused the weakening of my liver.”* For participants who may have had hepatitis, there was still much uncertainty and confusion regarding different types of liver disease and how they are treated: *“As for now, if you get sick, then you just go to the hospital, what else can you do?”* Another mentioned more casually that they have a family member who *“just goes every 6 months for testing.”* In addition to the confusion surrounding the disease, many participants were also not aware that there is a vaccine available that can prevent HBV transmission.

## Barriers

Many individuals did not regularly go to the primary care doctor or *“only go to the doctor when they get sick.”* A few participants noted that this was *“because people are not worried about health. Most are people who haven’t gone for a checkup for decades. They are afraid of finding some illness.”* Another individual noted fear as a common theme to accessing health care in the U.S. *“the first thing is that they don’t have time. The second thing is they are afraid.”* Others noted that the cost of health care was a barrier as well as not having health insurance. One participant stated, *“that’s because... don’t have insurance. I have insurance, but I’m afraid it will cost money if I go (to the doctor). I don’t know, in general, even if I am sick, I will still not go to get a checkup.”* Most participants described time as another barrier to accessing health care especially for the nail technician profession. One participant noted, *“inconvenience... like nail technicians usually have a hard time to schedule things around their work hours. They work 7 days a week, and the doctors usually opens late, sometimes not until 9am, and it is often crowded. That is why I do not want to go, because I have to wait in line and then be late for work. That is why many people in the nails field could not schedule for things to happen. The exception would be when they are really sick, only then will they take a day off to go.”* Another echoed this barrier stating, *“Vietnamese in the U.S., we work day and night, day and night, we don’t have time. It’s very hard for you to sit down and talk with people. It’s very difficult.”* There is also the assumption expressed by several participants that if someone feels healthy, they do not need to go for a checkup. One participant described, *“there are some people who are normal and healthy, and they would think that if I am healthy and normal, why go for a check-up? Like*

*my father, for example, he is normal at home, and if you tell him to go to the hospital, he will not go, thinking that if he go, he will get sick for sure.”*

### **Discrimination/Stigma**

Within interviews, participants were also asked how people with HBV would be treated in their community. Most participants felt that people with HBV would not be treated differently but a few suggested otherwise. Participant perceptions seemed to be based on their personal experience with HBV. Those not as familiar with HBV mentioned that, “... *being infected, people will avoid you, they will not come close to you.*” And other participants mentioned that “*if they have an illness, they often hide it, they will not talk about it,*” highlighting internal stigma related to HBV, associated with fear of being stigmatized or treated differently. Another described a family experience with HBV, “*in Vietnam, once had it, mother and father do not live together and separated. The children also separated. Eating and drinking is done separately as well. Then once treated, everybody got back together.*” This break with traditional family meals seems due to the misconception that HBV is transmitted through sharing food and drink, and the stigmatizing fear of transmitting the virus among family members.

Misconceptions related to transmission of HBV were linked with perceptions about how people with HBV might be treated by others. Several participants noted, “*people are afraid of being infected. Like when talking, the saliva can do this or that. Eating/drinking, stuff like that, they don’t like it. They don’t like to use the same stuff as well.*” Another mentioned, “*I am afraid of socializing with people as well.*” Another participant stated “*Well, I will treat them as normal. I just have to be careful with my eating and drinking habit... when eating together, just to be careful.*” This further highlights the misconception and knowledge gaps related to transmission. (HBV is not spread through sharing meals with those infected). Another participant said, “*in my opinion, it is not discrimination, people are simply afraid that the illness will spread to them, that’s all, not discrimination,*” highlighting a fear of contracting HBV. One participant echoed this fear “*of course, I am afraid, because that illness is contagious, and everyone will try to avoid you. Can’t work comfortably and a part of it, generally speaking, it’s like there is something inside your body that would make you uncomfortable and have low self-esteem.*”

### **Screening and Prevention**

Many participants did not know they should be tested, reported that it was not recommended to them by a doctor, or assumed that a blood test at their primary visit annually would include HBV. One participant stated, “*if the doctor tells me to get my blood tested, to get complete checkup, and the doctor says that everything okay, then I think nothing more of it, and I do not ask anything further. Due to the doctor saying everything is okay, there is really nothing to ask.*” Another participant noted similarly, “*when I go to the doctor, its usually the doctor draw the blood for testing. Then the doctor will let me know if my cholesterol is too high, high blood pressure, or diabetes, or other general things, that’s all. I did not hear the doctor say anything about HBV.*” Another example of this came from a participant stating, “*for high... high cholesterol and anything, the blood test will reveal everything.*”

## Training

A few participants had not received formal training and learned the trade on the job within a nail salon, while the majority had licenses and formal nail training. Individuals reported receiving training in Pennsylvania, New Jersey and Delaware. Almost all individuals explained that HBV was not specifically discussed within their formal training. One participant mentioned, *“I recently went through training, there is no talk of it (hepatitis B).”* Another participant mentioned, *“there were brief mentioning of things like HIV that are transmittable, but nothing else.”* Others noted that there is only a general health overview mentioned rather than disease specific details of nail training, *“they did not about hepatitis B. They only talk about health in general.”* Another participant mentioned that they were told that HBV transmission is prevented by wearing a mask, *“yes, I have heard about it. They told us that when we are working, we need to have face mask to separate... to prevent and things like that. They only briefly mentioned it.”* While another mentioned, *“hepatitis B is talked about only in passing. They would talk around, like, don’t cut the customer, because they have blood, bleeding, they get scared, stuff like that.”* Another participant shared, *“to be honest, they did not talk about this subject. They only talk about subjects such as fungus infections, bacteria, and the various viruses. They would teach you how to be careful cutting the skin. Not the hepatitis B to be honest, I have had the license for a long time now, so at times, I don’t remember if there is such a portion or not.”* Generally, most participants did not recall any information specific to HBV, including prevention, within their nail technician training and licensing process.

## Recommendations

In an effort to better understand outreach within the Vietnamese nail salon community, we asked participants to provide recommendations for ideal public health campaigns to raise awareness for HBV. Many participants suggested postings in common areas like Vietnamese supermarkets, Vietnamese nail salons, or Vietnamese newspapers. Others suggested churches and temples, *“I think for the Vietnamese community; you can go to churches or temple. It is because the majority of people in our community visits the temples or churches more often. I think that if you go in there to outreach, like, let’s say you want to open a day for free checkups for the Vietnamese community in the church, you want to talk to the priest.”* Others suggested making the discussion around HBV “commonplace” and that sharing information from person to person by word of mouth could also be impactful. Some suggested social media, specifically Facebook was a positive venue for sharing information and that community members could *“like and share posts”* to reach a larger audience. Many individuals suggested leaflets or brochures were also helpful tools to distribute information to the public. One individual suggested, *“I think the schools can do outreach as well. The students can bring it home for their parents to see.”* This same person noted, *“I think Americans would be very concerned with this,”* referring to hepatitis B. There was a disconnect and lack of awareness on where to go for HBV information and what resources were available to them that could screen or provide vaccination for HBV. It was noted that more information is needed to address this gap and link people to existing resources.



## Discussion

Our study identified several barriers to HBV-related education, screening, and vaccination among Vietnamese nail salon workers that were generally consistent with the literature (Taylor et al., 2005). Among these were the lack of knowledge related to hepatitis B, including significant misconceptions related to symptoms, how hepatitis B is transmitted and prevented, cost of health care, lack of insurance, perceived inconvenience, and lack of knowledge of community resources. This lack of knowledge identifies where many people fall within the HBM related to HBV in terms of perceived threat (e.g., perceived susceptibility + perceived severity) and can serve as a significant challenge for moving people towards HBV testing and prevention through vaccination. Previous research has shown similarly low HBV knowledge in the Vietnamese community, including low awareness of the modes of HBV transmission and prevention of HBV through vaccination and low knowledge and transmission-related misconceptions (Nguyen et al., 2003, Taylor et al., 2005)

A unique finding of this study among the nail salon worker population was that few participants recalled HBV training during their nail licensing curriculum. Currently, most nail technician licensing programs do not emphasize the importance of HBV education or other specific infectious diseases (Ng, 2018). All states that require licensing have requirements to teach sanitation and disinfection; however, there is often no specific requirement to include HBV education. Pennsylvania and New Jersey are two states with no blood spill protocol requirements (do not have specified language describing how to handle contaminated materials) (Ng, 2018).

Based on our findings, we would like to suggest the following strategies for disseminating hepatitis B-related information and screening resources using the HBM as a guide to understand decision making. The suggestion first is to inform cosmetology and nail training schools of the benefits of HBV education to prevent transmission in the workplace, and encourage them to share information, screening and vaccination resources with students. By impacting nail training, itself, we believe that individuals will have an improved understanding of perceived susceptibility, severity and benefits of action related to HBV. Current curricula should include infectious disease training highlighting HBV prevention and transmission specifically within nail salons. Close collaboration between cosmetology and nail training schools and HBV outreach organizations/local health departments may improve overall education, screening and prevent transmission of HBV in nail salons.

In order to impact the larger Vietnamese community, the second strategy we suggest from study findings note the value of social media within the Vietnamese nail salon community. Nail technicians seek online channels to learn about new products, skills, and creative designs. Previous research in Vietnam found that of a sample of 1,080 individuals 66.02% used Facebook primarily to keep themselves updated with the latest news and 72.9% of those participants reported they were interested in the health information shared on Facebook (Zhang, 2017).

The third strategy found from interviews suggests using the personal network of nail salon workers to expand HBV awareness, improve knowledge and dispel misconceptions. Our participants indicated their openness to sharing HBV information within their family and friend networks. Tailoring education messages to ensure that nail salon workers share the information with their family and friends' may further increase a program's impact. Past research within the Vietnamese community demonstrates the importance of family and friend's health recommendations and can be leveraged to reach the community at the individual level (Dam, 2016).

The final recommendation is to develop culturally competent materials and interventions to move people to understand their susceptibility to HBV, the severity of HBV and the benefits of HBV screening and vaccination. Previous research has applied health behavior theory to improve hepatitis B screenings among AAPI through lay health workers and is an opportunity within this population (Juon et al., 2016). In addition to providing general information about HBV infection, tailored messages relevant to HBV prevention and individualized patient empowerment can work towards improving testing and vaccination for this high-risk community.

### **Limitations:**

There are possible limitations within this study including recall bias, interviewer bias, social desirability bias and respondent bias. Snowball sampling was also used within this study and the results cannot be generalized to the Vietnamese nail salon community as a whole within the U.S. These data provide a snapshot of some of the HBV-related barriers faced within the Vietnamese community and provide areas for future research and study.

### **Conclusion:**

This qualitative study found that overall, there is a low knowledge level associated with HBV within the Vietnamese nail salon community in the greater Philadelphia region. There are also significant misconceptions associated with transmission and prevention of HBV, which foster stigma and can lead to low vaccination and screening rates. In order to address these findings, culturally appropriate interventions should be used to increase awareness and knowledge and dispel misconceptions related to HBV in order to improve screening and vaccination rates within the Vietnamese community. Using the HBM as a guide to create future interventions in this community can work to address many of the knowledge gaps found within this research. Reaching community members is essential for effectively disseminating correct HBV-related information and increasing discussion around HBV to ultimately decrease HBV-related stigma. Future intervention should also focus on curricula for nail licensing to incorporate HBV and other infectious diseases in order to reduce risk of transmission within the workplace. Utilizing social media like Facebook and social networks within this tight-knit community has the potential to have a significant impact to promote health messaging. To our knowledge, no HBV specific information has been provided to Vietnamese nail salon workers in Philadelphia and this research sheds light on knowledge related to HBV, barriers to health care access within this population and provides direction for future public health interventions within this high-risk population.



## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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