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Knowledge, Attitudes, and Beliefs of Patients with Chronic Liver Disease

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Abstract

Objectives—To explore knowledge, attitudes, behaviors, and barriers to care among patients with chronic liver disease (CLD).

Methods—Three separate, one-time-only, 60-minutes focus group sessions were audio-recorded, transcribed, and analyzed using an editing style of analysis.

Results—In total, 13 focus group participants provided 254 discrete comments. Emerging themes included: negative lifestyles/behaviors, lack of CLD knowledge, negative attitudes/emotions, stigma and negativity, health insurance, inaccessible/high cost medical care, drug/alcohol abuse, and discriminately sharing CLD diagnoses.

Conclusions—Participants felt lack of CLD knowledge was a key factor in how patients perceived prevention, risks, causes, and treatment. These findings contribute to the important, yet

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Human Subjects Statement

The MedStar Health Research Institute–George-town University Institutional Review Board approved the study and all procedures. Participants provided written informed consent and participant anonymity and confidentiality were strictly enforced.

Conflict of Interest Statement

There are neither any financial competing interests nor any non-financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial or any other) to declare in relation to this manuscript.

limited, base of knowledge about CLD and provide a benchmark for future, more extensive studies and interventions.

Keywords

chronic liver disease; infectious diseases; health disparities; health belief model

Chronic liver disease (CLD) has origins ranging from acquired, infectious, toxic, metabolic, and inherited causes. Long-term consequences include liver cancer, cirrhosis, and liver failure, and the combination of the latter 2 diseases constituted the 12th leading cause of death in the US in 2011.¹ In the US, the major etiologies of CLD include alcohol abuse, chronic infections with hepatitis B virus (HBV) and hepatitis C virus (HCV), biliary track diseases, hematochromatosis, nonalcoholic fatty liver disease, drug toxicity, autoimmune chronic hepatitis, and rare autosomal recessive metabolic diseases such as Wilson's disease.

It is difficult to prevent and control CLD due to a wide array of causal factors that contribute to this disease. Of growing concern is non-alcoholic fatty liver disease (NAFLD), which is highly correlated with obesity and diabetes. NAFLD is the most rapidly increasing type of CLD in the western world due to escalating rates of obesity.² NAFLD incidence rates are expected to continue to rise, which would add considerably to the CLD burden.³

Despite the fact that approximately 150 million people worldwide were infected with chronic HCV in 2012,⁴ and an estimated 30% of the world's population (approximately 2 billion persons) have serologic evidence of current or past HBV infection,⁵ global public discourse and political action surrounding viral hepatitis is limited, perhaps due in part to low public awareness of transmission risks and consequences for developing liver cancer, as well as associated stigma of infection that is documented in the literature.^{6,17} The stigma that accompanies viral hepatitis infections is a detrimental modifying factor that is a major perceived barrier for treatment. For these reasons, coupled with the fact that latency periods for the diagnosis of sequelae of the virus can be decades, chronic viral hepatitis is often referred to as the "silent epidemic."⁶ A report from the US Centers for Disease Control called attention to the growing health burden of viral hepatitis in the US, estimating that annual deaths due to HCV surpassed HIV deaths in 2007; it is also estimated that some 3.2 million Americans are chronic HCV carriers, most of them unknowingly.⁷ These trends are triggering intense deliberations in the public health community regarding whether or not to recommend routine HCV screening and the populations that such screening would target. This is likely to stimulate pressure for liver cancer screening among those who test HCV-positive, as hepatocellular carcinoma is a major consequence of HCV infection. Given these trends – a growing viral hepatitis burden, multiple risk factors, increased needs for screening, and the absence of a vaccine for HCV – the Institute of Medicine identified "a lack of knowledge and awareness about chronic viral hepatitis among at-risk populations, members of the public, and policy-makers" as major barriers to prevention and control.⁸ In the context of the Health Belief Model,⁹ patient education could be an important component of prevention and control efforts, as improving an individual's knowledge is imperative in improving attitudes and beliefs and thus action and behavior change towards proper management of disease. Patient education has been shown to impact a wide range of patient

behavior, including increased uptake of vaccinations¹⁰ and changes in personal behavior related to chronic disease prevention,¹¹ breast cancer,¹² and cervical cancer.¹³ Therefore, the Health Belief Model serves as an appropriate framework for understanding how individuals with CLD acquire health knowledge, how they are personally impacted by such knowledge, and how they are best prompted to implement behavioral changes to actively engage in their own care.⁹ To our knowledge, no prior qualitative study has assessed CLD patients' knowledge about liver cancer, perception of their risk of liver cancer, health behaviors associated with liver cancer progression, and barriers to liver care. Therefore, our study, guided by the Health Belief Model, aimed to assess these factors among patients at a tertiary care center.

METHODS

Given the limited research on this specific topic, we chose to conduct a qualitative study using focus groups. Whereas this method has its limitations in terms of generalizability and causality, it offers the opportunity to develop theories using context rich material while maintaining reliability. Focus groups were conducted with CLD patients attending Georgetown University Medical Center, a large urban teaching hospital in Washington, DC.

Recruitment and Participant Characteristics

Participants were recruited at the Georgetown University Hepatology Clinic by 3 staff physicians during quarterly and/or semi-annual check-up appointments. Participants had a wide range of diagnoses, including alcoholic liver diseases, HBV and HCV infections, fatty liver disease, and rare auto-immune diseases. Also, participants experienced a wide range of disease severity, ranging from mild, well-controlled liver disease to liver cancer, with 4 participants having had liver transplants prior to the study. Eligible patients met with a research assistant who explained the study in detail, answered questions, and administered the informed consent procedure. In addition, eligible participants had medically confirmed CLD, spoke fluent English, and were 18 to 80 years of age at the time of recruitment. Patients in end-stage liver disease were deemed ineligible due to possible cognitive and/or psychological barriers to participation. Between December of 2011 and February of 2012, 13 participants were recruited to participate in 3 separate, one-time-only focus group discussions.

Theoretical Framework and Focus Group Discussion Questions

For our theoretical framework we used Health Belief Model constructs¹⁴ to develop a focus group guide. The guide comprised 7 semi-structured questions that inquired about participants' knowledge of liver cancer, perceived susceptibility, severity, barriers to liver cancer, cue to actions to prevent liver cancer, and stigma associated with liver diseases and cancer (Table 1).

Data Collection

An experienced moderator conducted the focus groups. We convened 3 separate, one-time-only focus groups, each lasting approximately 60 minutes. The moderator utilized response reflection, ie reiterating a respondent's answer for clarity and affirmation,¹⁵ as well as

naturalistic inquiry, ie, probing a respondent using extemporaneous contextual querying to obtain information.¹⁶ All focus group discussions were audio-recorded and transcribed verbatim.

Data Analysis

For quality control, random transcript segments were selected and compared against focus group audio recordings, and were found to be accurate. We then developed a coding framework to classify participants' responses into broad topics and key concepts, and then identified themes that captured our HBM constructs. For example, we coded participants' narratives about their perceived causes of liver diseases and cancer (knowledge), social and personal stigma, perceived susceptibility, barriers to receiving care, and lifestyles for prevention.

The editing analysis method¹⁷ was applied to analyze the data; this formalized approach allows responses to study questions to be identified, organized, and highlighted so that connections and interpretations can be established. To do this, discrete responses from the participants were transferred from the transcripts into a spreadsheet. To ensure accuracy and eliminate potential interpretation bias, 2 reviewers, independent of the moderator, separately interpreted the data and reached a consensus on the final categories and emerging themes. First, the reviewers carefully read and reread response narratives to fully understand the information provided. Second, they selected key words and/or phrases verbatim from the transcript narrative, to capture the essence of each response. Third, they assigned categories to the key words and/or phrases that were previously reduced. Lastly, thematic constructs were developed from the categories and finalized by consensus.

RESULTS

The first focus group comprised 5 participants, whereas the second and third groups were comprised of 4 participants each. Overall, 13 participants (6 men and 7 women, average age of 57.5 years, age range 42 years to 70 years) provided 254 discrete comments. The focus group participant responses were grouped according to specific questions, followed by the overall themes discerned across all questions.

Knowledge: Perceived Causes

Participants were asked to share what they believed to be common causes of CLD (Question 1). Their responses yielded 7 categories: lack of knowledge, viral hepatitis, drug abuse, genetics, blood donor screening failures, alcohol abuse, and occupational, environmental, and chemical exposures to liver-damaging agents. General lack of knowledge - of the causes and risks of CLD, screening, disease symptoms, and available treatments - was the single most common response. Lack of knowledge in the medical community, among those at greatest risk of getting CLD, and in the community at large also was reported. Lack of knowledge within the medical and healthcare communities also was perceived as contributing to the spread of HCV. For example, participants reported that receipt of blood transfusions prior to the widespread screening of donated blood supplies was a common mode of HCV transmission leading to CLD. One participant stated:

I was told that I have Hep C [sic] because the medical field wasn't knowledgeable enough to screen for it. They think it's the blood transfusions I had.

With respect to alcohol and other drug abuse, one patient shared:

Lost 4 uncles to liver disease from drinking. I decided not to drink but to use recreational drugs, and never realized that you could get Hepatitis C, which then led to liver cancer.

Indeed, the lack of knowledge about other CLD risk factors, beyond excessive drinking, contributed to risk-taking behavior by several participants.

Incorrect knowledge of the causes of CLD were mentioned by several participants, as in the case of one patient who believed that general laboratory cleaning agents were the cause of his CLD.

As a kid I did work in the laboratories and cleaned lab tables and things of that nature. We didn't even have latex gloves back then. We were exposed to alcohol and water, aldehydes and water to clean tables, dissection table, the whole 9 yards.

Risk Beliefs

When participants were asked if they believed that certain people are most likely to get CLD (Question 2), they described 5 categories: susceptible persons, persons with health disparities, those who lack knowledge, those engaging in risky behaviors, and those who had occupational, environmental, or chemical exposures. Susceptible individuals were described as men, public workers in contact with the general public, painters, people who work with blood, people with inherited genetic susceptibility, and former prisoners. One participant specifically commented on those who come into contact with the public:

From my own work experience, we see so many people every day ... and they touch the papers, we touch the files, and they touch the files. We don't know what they have.... So many people who are coughing and you know, I've seen people, they come in and it's really scary to talk to them and stuff, but we have to speak to them.

This participant held incorrect beliefs that touching common files and being exposed to coughing patrons could spread HBV and HCV.

Several participants commented on "disparities" related to susceptibility for CLD, including occupations, negative lifestyles, race, age, and sex. In contrast, one participant said that during visits to the doctor she noticed no disparities among CLD patients. Another participant believed that Blacks face viral hepatitis disparities because they are more susceptible to becoming infected with untreatable "strains" (genotypes) of HCV than other races. Others believed that there is disparity between racial or ethnic groups but could not identify which groups were at a disadvantage.

Attitudes Towards Themselves

When asked to share how they thought patients generally felt about having CLD (Question 3), they mentioned 5 types of feelings: realistic attitudes and emotions, discriminate sharing

of their diagnosis, negative medical side effects, fatalism, and general negativity. One participant shared emotions of anger and pain:

I'm mad. I'm stark-raving-mad, angry, upset, I want to scream, yell, I want to cry ... even though we all know that we're gonna not live forever, but when you knowingly have a medical problem it's like you've been given notice.

She reported receiving several blood transfusions prior to 1992 during Cesarean-section procedures; at least one of the transfusions was thought to be contaminated with HCV. This participant felt helpless about her declining health because there was nothing she could have done to prevent infection, and she was diagnosed decades later. The idea that CLD is a death sentence was mentioned repeatedly in focus groups.

For various reasons, many participants expressed hesitance to reveal their diagnoses to others. It was not uncommon for participants to feel they could tell no one about their CLD, not even their own families. This concealment of illness was deemed a necessary measure to protect against gossip and discrimination. Some participants focused on the emotional strain of dealing with their diagnosis; others highlighted their physical deterioration. Lack of energy was a theme common to many of the patients. One reported that extreme exhaustion affected completing even the most mundane daily tasks. However, others sought to learn to cope emotionally and sought effective treatment, despite their physical conditions.

Perceived Benefits of Healthy Behaviors and CLD Risk

While discussing how to avoid getting CLD (Question 4), participants mentioned 7 distinct avoidance tactics: practicing preventive behaviors, avoiding alcohol abuse, improving awareness of CLD among young people, getting HBV vaccination, avoiding drug abuse, improved education, and practicing safe sex. Many responses highlighted the importance of avoiding certain high-risk behaviors. One participant suggested that it is important to:

...be proactive in protecting yourself: don't share razors in the bathroom [of a group house], and obviously avoid drugs and drink responsibly.

Despite this knowledge, many participants admitted continued engagement in risky behaviors, even after their CLD diagnoses.

Additionally, many participants reported that improving the awareness among young people about the benefits of a healthy lifestyle and the consequences of abusing one's body could help youth avoid CLD later in life. Such a belief was exemplified in the comment:

When you are young you feel that you are infallible and you're going to live forever and you can abuse the hell out of your body.

Another participant commented:

I participate in recovery groups ... and I've been doing this for 30 years. I was [in my] late 20s when I stopped using drugs and alcohol ... but you still see ... patients [who are] 18, 19 years old ... they have that invincible feeling ... and the only reason they show up is because one, either the courts make 'em go [to recovery groups] ... Or else their parents do. And they don't have any intentions of stopping.

Many participants felt that young people need to be “convinced” to make healthy lifestyle decisions, but that doing so is very challenging. They believed that a healthy lifestyle in youth - including a healthy diet, exercise, avoiding drugs, and moderate alcohol consumption - contributes to the ability to avoid CLD later in life.

Some participants had incorrect knowledge about preventing CLD; for example, one person stated that hepatitis A vaccination is a core approach to avoiding CLD, in addition to avoiding alcohol abuse and shared needles for injection drugs.

Barriers to Care

Participants were asked what could prevent people from getting treated for CLD (Question 5); they mentioned 5 types of barriers: lack of or inadequate health insurance, high cost of care, general lack of knowledge, negative attitudes and emotions, and low economic status. Across all focus groups, respondents overwhelmingly cited lack of access to medical care due to high costs and high rates of uninsured individuals as leading barriers to care. Furthermore, they noted that simply having medical insurance does not guarantee adequate medical care. High co-payments, limitations on covered procedures and medications, and the insurance companies’ denials of certain treatments were all identified as barriers. They were dismayed by the prohibitively high costs of medications and liver transplantation surgery for the uninsured, and even for many insured patients. Finally, they commented that costs of care for CLD patients are typically much higher than those of the general public, and that CLD-related costs strain the healthcare system.

Participants believed another major barrier to receiving adequate care for CLD was lack of patient knowledge of symptoms. One participant shared the following comment:

I’ve known I have liver disease for a long time, but there are lots of symptoms and it’s very hard sometimes to connect which symptoms that are related to your liver and which are just other things. It’s not completely evident. It’s not easy to sometimes know when to call the doctor.

They perceived lack of information about the symptoms and outcomes of CLD as deterrents to seeking medical care.

Negative attitudes and emotions of fear and avoidance regarding CLD also emerged as perceived barriers to care. One participant mentioned his fear of insurance companies knowing his condition. Third-party knowledge about CLD was viewed as a dangerous threat. Participants agreed that typically someone knows about their disease - receiving treatment is nearly impossible to hide from everyone in a patient’s community. For example, family and friends might inquire why their loved one is at the doctor’s office more than usual. High doses of medications taken daily to treat CLD can have profound side effects, leading family members and others to ask questions. Time missed at work to attend medical appointments will usually trigger questions from human resources departments. Participants reported that fear of unwanted disclosures often lead to treatment avoidance.

Attitudes Towards Patients with CLD

When asked to share how they believe people known to have CLD are treated by community members (Question 6), participants mentioned 4 categories: stigma, ignorance by others, positive actions, and negative actions. One participant described receiving both positive and negative treatment from others and speculated that ignorance of the disease played a role:

I was treated with a lot of compassion and sensitivity. In my primary career, people couldn't have been more kinder to me. I got sick and they put me on limited duty, but they took care of me. And my neighbors and coworkers and family, I mean, it was just an outpouring of compassion. There was no stigma attached to it as far as I was concerned. I felt a little of that [stigma] when I was first admitted [to a medical facility], from hospital employees—nurse assistants.... My wife happened to overhear them talking and one said, 'Here, we got another one of these drunks in here waiting for a liver.' ...My wife is a nurse also, she let them have it.... 'You know, not everybody coming in here for a transplant is a drunk or a drug addict,' she explained to them. So there's a little bit of ignorance.... Maybe there's a whole lot of ignorance.

Many other participants provided similar accounts: family and friends had more positive attitudes towards them, while more distant community members such as co-workers, neighbors, and community members, who had less of an interpersonal connection with the participant, reportedly had stigmatic and ignorant attitudes towards the participant. Many participants noted that people generally assume that those affected with CLD are somehow personally responsible for having the disease. The stigma of alcohol abuse was thought to be commonly ascribed to those with CLD, and they believed that the disease itself was less shameful than the undesirable labeling of alcoholism.

Attitudes Toward Prevention

When participants were asked what people can do to take care of themselves if they have CLD (Question 7), 4 categories of practices were mentioned: proactive and positive behavior, proactive and positive attitudes, patient education, and willing participation in clinical studies. Engaging in proactive and positive behaviors, including self-education about CLD, was mentioned by many participants. Specific behaviors such as learning how the disease affects personal health, working with a doctor, and making positive lifestyle changes were mentioned as strategic goals. Several people recommended the adoption of a healthy diet and reducing or abstaining from alcohol consumption. They also commented that realizing many of the health issues resulting from CLD are asymptomatic increased their desire to protect their health as comprehensively as possible.

A realistic and positive attitude was seen as another useful self-care behavior. One patient stated:

We can't stop living. I can't stop living.... my life has changed, but I want to experience it. And part of that means going out into the world.

The idea that life after diagnosis with CLD is still meaningful and should not be taken for granted was a recursive notion across all focus groups. In contrast, many patients mentioned

difficulties (eg, poor health, work troubles, community stigma, ignorance towards persons with CLD), and these negative attributes could be demoralizing and hinder participants from living a fully purposeful life.

Surprisingly, some study participants mentioned that they were willing to go against doctors' orders to care for themselves. One described participation in risky behaviors directly following a liver transplant:

I had lots of pets and they told me don't sleep with the dogs. I always sleep with my dogs ... I've got 5 dogs, 2 cats... I guess they [the doctors] were just trying to protect everybody.... I haven't had any problems for 6 months [since liver transplantation].

Another participant was advised against having a cat at home after receiving 2 liver transplantations. Her doctors were concerned the cat could compromise her health, presumably due to sanitation issues. Despite this advice, she readily admitted that she planned to incorporate a cat into her household.

Overall Themes

Seven principal themes emerged that captured the overall essence of the knowledge, attitudes, beliefs, health behaviors, and barriers to care reported by study participants (Figure 1).

1. *Negative lifestyles and behaviors* were believed to be the risk factors of CLD. Patients' lifestyles and behaviors were also cited as primary factors contributing either negatively or positively/proactively to managing their illness.
2. *Lack of knowledge* concerning CLD was reported as an attribute of health care providers, patients, and the community. Respondents felt there was overall ignorance across all of these groups, and especially within the community.
3. *Attitudes and emotions* negatively affected the lives of CLD patients; patients were also adversely impacted by negative attitudes from families, coworkers, friends, and community members. Participants felt that these factors seriously impacted the long-term outcomes of CLD.
4. *Stigma and negativity* were described as the main negative attributes of CLD ascribed by others (ie, primary care providers, the medical community, family, friends, co-workers, and community members).
5. Access factors due to the lack of *health insurance, high cost of care, and low economic status* were cited as key barriers to obtaining medical care faced by many who suffer from CLD.
6. Substance use such as *drug and alcohol abuse* were reported to be key underlying causes of CLD. Also, participants reported that significant stigma surrounds these addictions and that most CLD sufferers are widely presumed by others to be current or past abusers of drugs and/or alcohol.

7. *Discriminate sharing of their diagnosis with others* was a commonly reported self-protective measure due to stigma, ignorance, lack of knowledge held by others, and fear of being denied medical insurance, work, or employment advances. Most respondents reported they disclosed their disease status to a select group of trusted individuals to protect themselves against this myriad of discriminations.

DISCUSSION

We sought to elucidate CLD patients' knowledge, attitudes, beliefs, health behaviors, and barriers to care. Several overall themes emerged from the focus groups related to negative lifestyles and behaviors - lack of CLD knowledge, negative attitudes and emotions, stigma and negativity, health insurance, lack of access to medical care and high costs, drug and alcohol abuse, and discriminate sharing of CLD diagnosis. Many of the participants had limited knowledge about CLD. Some also had incorrect knowledge and beliefs - for example, that CLD is caused by exposure to paints and HCV can be spread by touching papers or being near an infected person's cough.

Our findings regarding lack of knowledge are consistent with other studies. Wang et al¹⁸ compared knowledge, health beliefs, and self-efficacy towards HBV prevention among university students in Hong Kong. Roughly one-fourth of the participants were HBV carriers and about 20% were at risk for infection due to self-reported risky behaviors. Most participants assigned stigma to HBV infection; those who were carriers of HBV were less willing and likely to embrace positive lifestyle behavior changes to promote health. More than 75% of the study participants reported engaging in risky behaviors such as unsafe sex, razor and toothbrush sharing, or medical students' accidental exposures to blood. Despite this, only half of those who reported risky behaviors were concerned about HBV infection. Across all focus groups a severe lack of HBV knowledge was observed. Thus, Wang's study and ours both highlight the problems of stigma and lack of CLD knowledge and awareness and emphasize the need for improved education and positive health behavior changes among CLD patients.

Further, our findings reveal the utility of the Health Belief Model as an exploratory lens for understanding perceived causes, susceptibility, prevention, and attitudes related to CLD. Lack of knowledge about risk factors and prevention was noted as the single greatest common cause of CLD. Feelings about susceptibility varied according to whom participants felt were most likely to get CLD - persons with health disparities, those who lack knowledge, or those with negative behaviors. These findings could also impact perceived prevention, susceptibility, and severity. In a colon cancer study, Dodd et al¹⁹ suggested that perceived susceptibility and severity of the disease were attenuated by a general lack of knowledge.

Lack of knowledge about perceived causes can also contribute to lack of understanding of disease symptoms. In our study, some patients used very revealing descriptors such as "extreme exhaustion" and "physical deterioration." Their reports of fatigue are common and consistent with findings in the literature. Jorgensen²⁰ investigated the level of fatigue in patients with primary biliary cirrhosis, and found they often experienced crippling fatigue

that had serious implications in daily living. Additionally, patients often reported feelings of guilt for experiencing the fatigue over which they had no control.

Our findings also highlight not only the lack of knowledge regarding perceived causes among patients but also among medical and occupational health professionals. This finding, along with other barriers, may contribute to inaccuracies about perceived causes and patients' subsequent treatment decisions. This is further complicated by patients' lifestyle factors. In a study of CLD patients, Stoller et al²¹ found that treatment regimens were difficult to comply with, and patients altered treatment procedures to accommodate their lifestyles. Those investigators classified lay management approaches into 3 categories: medical self-care, behavior change, and coping. Medical self-care involves self-administration of medicines, choosing to decline or delay standard medical care, and participating in complementary or alternative treatments (CAM).²² Behavior change included dietetic approaches, conserving energy and resting, and hygiene practices. Coping included religious and cognitive coping strategies and was defined as preserving a sense of worth and value in life regardless of negative symptoms. Participants in that study often retorted metaphorically that combatting HCV was akin to "*fighting battles, waging war, or slaying dragons*."²³ CAM was reported as the most common medical self-care strategy to combat HCV. The most common behavioral change that respondents reported involved dieting and exercise. Regarding coping mechanisms, some respondents reported that a positive outlook on life helped them cope, whereas others turned to religion to help ease their minds.

The lack of access to medical care, in addition to high costs, resonated strongly among our study's focus group participants. These findings are important in assessing health outcomes for patients, particularly for the uninsured. A study by Ong et al²⁴ analyzed National Health and Nutrition Examination Survey data to examine the health insurance status of HCV-positive individuals and found that such individuals were more likely than others to be uninsured.

In summary, our findings suggest that much work remains to be done. A recurring theme among the participants was lack of knowledge about CLD among patients, families, and the medical community. This lack of understanding about CLD included incomplete and incorrect information about underlying causes, treatments, symptoms, and medical management. Many participants also reported feeling stigmatized. Although limited in scope due to the small sample size at a single tertiary care center, these findings contribute to the important, yet limited, base of knowledge about CLD, and may serve to inform future qualitative and quantitative studies, including interventions aiming to improve the livelihoods of patients with CLD.

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Figure 1.
Overall Themes

Table 1

Focus Group Questions in Relation to the Health Belief Model

	Health Belief Model constructs	Categories/themes
1) What do you believe are common causes of chronic liver disease?	Knowledge	Lack of chronic liver disease knowledge and substance use
2) Do you believe that there are certain people who are most likely to get chronic liver disease? If so, why?	Perceived susceptibility	Risk beliefs
3) In general, how do you think people with chronic liver disease feel about having the disease?	Perceived severity	Attitudes toward themselves: negative emotions
4) How can someone avoid getting chronic liver disease?	Perceived benefit	Healthy behaviors and chronic liver disease risk
5) What do you believe could prevent people from getting treated for chronic liver disease?	Perceived barriers	Barriers to care: access factors
6) How do you believe that people who are known to have chronic liver disease are treated by others in their communities?	Perceived barriers	Attitudes towards patients with chronic liver disease: stigma
7) What can someone do to take care of himself or herself if he or she has chronic liver disease?	Cues to action	Attitudes toward prevention: healthy lifestyles