RESEARCH ARTICLE

# Implementing of Nursing Intervention on Knowledge, Perceived Stigma and Health related Outcomes among Patients with Hepatitis B Virus

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## ABSTRACT

**Background:** Despite significant advances in the therapy components for hepatitis B virus (HBV) prevention and treatment, HBV-related stigma is seen as a major barrier to HBV management. The HBV-related health stigma has a direct negative impact on the process of healthcare delivery and medical decision-making. The study aimed to evaluate the effect of implementing the nursing intervention on knowledge, perceived stigma and Health-related outcomes among patients with hepatitis B Virus.
**Subjects and method:** A quasi-experimental (pre -posttest) study research design was used.

**Study setting:** The present study was carried out at Menoufia University Hospital (in-patient medical department) and well as in the out-patient medical department after patients discharge and followed up.

**Sampling**. A purposive sample of 50 adult patients who were diagnosed with HBV virus**.**

**Results:** The total mean knowledge score was significantly improved post-intervention than pre-intervention among studied HBV patients. The mean of hepatitis B stigma level reduced post-intervention. There were statistically significant improvements among studied patients' related to some of abdominal, activity, and systemic symptoms post-intervention. There was a significant improvement for serum total bilirubin and serum ALT among studied patients post-intervention. There was a reverse correlation between hepatitis B knowledge and hepatitis B stigma post-intervention.

**Conclusion**: Implementing a nursing intervention significantly enhances patient knowledge, lowers perceived stigma level and improves health-related outcomes.

**Recommendation:** Establish periodic public awareness campaigns emphasizing hepatitis B virus transmission methods to discover new cases and control infection.

**Keywords**: Nursing Intervention, Knowledge, Perceived stigma, Health related Outcomes, Hepatitis B virus.

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## INTRODUCTION

One of the most common and potentially fatal hepatic infection disorders is the hepatitis B virus (HBV).[1] There are approximately 257 million chronic HBV infections globally, according to the Centres for Disease Control and Prevention (CDC). According to,[2] consequences such liver cirrhosis and hepatocellular cancer claim up to 700,000 lives per year among HBV carriers. According to,[3] between two and three million people working in Egypt have chronic hepatitis B. It is well-established that good patient education has proven to be a key tool in disease management, providing significant benefits in knowledge and behavioral modifications. The wide variation in patient knowledge may affect patients' willingness to accept and adhere to medical interventions.[4]

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Lack of understanding of HBV is a major factor in maintaining stigma. Those who have HBV should be educated, as should society, their families, and medical professionals. Healthcare professionals' failure to deliver enough and correct information may hinder therapy, reduce the likelihood that family members will be told, and increase fear, worry, and depression, all of which harm coping mechanisms.[5,6] Some medical professionals may not have received an HBV vaccination because they are unaware of the benefits, putting them at a higher risk of contracting the disease.[7]

The third reason for stigmatization is the fact that hepatitis B is an infectious disease that can be spread through sexual contact. The stigma associated with Hepatitis B has also been linked to ignorance of the pathways of transmission of the virus.[8]

Stigma is pervasive throughout the world, in both high- and low-income nations as well as middle-income countries. It typically serves to keep people in the group by upholding social standards, keeping people away from the group as a precaution against disease, and keeping people down so they can be exploited and subjugated (Hartoga *et al.*, 2020). Although stigma is a worldwide occurrence, localized instances of stigma and discrimination are very much impacted by cultural factors.[9]

Social relationships, psychological health, and willingness to seek medical care are all impacted by stigma connected to the hepatitis B virus.[10] Stigma can harm one's self-worth, undermine one's social and economic standing, cause discrimination, and have a negative impact on family members.[10]

According to,[11] stigma refers to problems in the three areas of ignorance, prejudice, and discrimination as well as people's knowledge, unfavorable attitudes, and behaviors towards a particular person or group perceived as "unacceptably different". One of the primary obstacles preventing people from seeking and receiving services for the Hepatitis B virus is stigma, which is the social exclusion of an individual or group labeled with an undesirable trait.[12] There is evidence that stigma has detrimental effects in many areas of life. According to, stigma is linked to decreased employment chances and the ensuing poverty, relationship issues, a decrease in help-seeking behavior, and poorer quality healthcare.

According to,[13] nurses play a critical part in diagnosing, treating, and caring for patients with hepatitis B, hepatitis C, and HIV. Studies show how important it is for nurses to teach patients to take care of themselves if they have HBV to lessen stigma and the disease's transmission. The nurses recommend vaccinations in addition to drug use. Nurses give patients and their family members information on self-care, including advice to seek medical assistance if they observe any HBV symptoms. Several nurses have had prior experience educating patients, HBV patients, and their families about the transmission of the virus. Patients are also informed about horizontal, vertical, and sexual transmission, as well as blood transmission, such as the use of infected needles, by the nurses.[14]

Nursing interventions that reduce stigma have a greater impact on health-related outcomes such as fatigue, pain, and associated abdominal symptoms, which are more common in hepatitis B virus patients, significantly increased patients' quality of life, and assisted patients in developing the self-management skills required to manage their conditions. These nursing interventions serve as a reminder for nurses who care for patients with viral hepatitis to learn these skills so that they can better manage their patients' daily demands.[15]

### Significance of the Study

Chronic viral hepatitis B (HBV) and C (HCV) stigma affects both access to and utilization of healthcare services, as well as health outcomes. However, in research, stigma conceptualizations are typically implicit and presumptuous. Chronic infection identification and treatment are complicated by stigma, deprivation, and misinformation, particularly in resource-limited settings. Chronic hepatitis B virus (HBV) infection, despite being generally asymptomatic, carries a high long-term morbidity and mortality burden. It is vital to recognize, investigate, and battle stigma to improve the efficacy of diagnostic, therapeutic, and preventive activities. In order to address this issue, the current study is being done to evaluate implementing nursing intervention on knowledge, perceived stigma and health-related outcomes among patients with hepatitis B virus.

### Purpose of the Study

The purpose of the current study was to evaluate the effect of implementing of nursing intervention on knowledge, perceived stigma and health-related outcomes among patients with hepatitis B virus.

### Research Hypotheses

- Patients with hepatitis B virus who receive nursing intervention will have a high knowledge score post-intervention than pre-intervention.
- Patients with hepatitis B virus who receive nursing intervention will have lower levels of HBV-stigma score post-intervention than pre-intervention.
- Patients with hepatitis B virus who receive nursing intervention will have an improvement in health-related out-comes post-intervention than pre-intervention.

## SUBJECTS AND METHOD

### Research Design

A quasi-experimental (pre post-test) study research design was used to accomplish the purpose of the study.

### Research Setting

The present study was carried out at Menoufia University hospitals (in-patient medical department) and out-patient medical department after patients' discharge and follow-up.

### Study Subjects

A purposive sample of 50 adult patients who diagnosed with

hepatitis B virus and admitted to Menoufia University hospitals was recruited.

The study subjects were chosen based on the following criteria; conscious patients of both sexes, aged 21 to 60 years, diagnosed with HBV and willing to participate. Chronic diseases other than hepatitis B virus was excluded.

**Sampling Technique**

The sample size was determined based on the following equation:

$n = (z2 \times p \times q)/D2$.

Z= the standard normal distribution value reflecting the confidence level that will be used 1.96 for confidence 95%.

P = proportion.

q = 1- proportion.

D2 = margin of error.

Then total sample size was fifty patients for each group.

**Study Instruments**

Based on the review of relevant literature, four instruments were utilized by the researcher for data collection, these included:

*Instrument I: A Semi-structured Interviewing Questionnaire*

The researcher developed it based on relevant literature to assess socio-demographic and medical data. It comprised of three parts as the following:

- *Part one: Socio-demographic data*

It comprised of data about patient's age, sex, level of education, occupation, marital status, etc.

- *Part two: Medical data*

It contained questions about medical data such as past and present medical history, family history, and previous hospitalization, admission complains and symptoms. Physiological measurements and laboratory investigation data such as serum albumen, bilirubin and ALT levels also was included

*Instrument II: Hepatitis B Virus Knowledge scale*

It was developed by a team of professionals at the University of[16] to test HBV knowledge among study patients, and it features a 14-item scale to evaluate participants' knowledge about HBV infection. All questions had a 'yes or no' structure and were adapted from published surveys assessing HBV knowledge in the literatures.

- *Scoring*

The scores were assigned as 1 and 0, respectively. A score of one was assigned to each correct response, while a score of zero was assigned to each erroneous answer. Respondents with a 3 had high knowledge, while those with a 2 had low knowledge.[17]

*Instrument (III) Toronto Chinese HBV Stigma Scale*

The Toronto Chinese HBV Stigma Scale was incorporated in the questionnaire to assess stigmatizing views towards HBV infection. This scale was created by a team of experts in Social and Cultural Epidemiology and Hepatology at the University of Toronto[16] to serve as a reliable and complete clinical and research instrument for measuring one's level of stigma. The scale is made up of 20 items extracted and adapted from HIV/AIDS stigma assessments in the literature. To ensure internal consistency of the scale, the items were chosen using factor analysis.

- *Scoring*

Each item had an HBV stigma statement, such as "People with hepatitis B should be isolated from others to protect the public" or "People with hepatitis B are unclean." Participants were asked to express their thoughts on a three-point Likert scale (1 = strongly disagree, 5 = strongly agree). Higher ratings imply a higher amount of stigma associated with HBV. There is no absolute cut-off figure for determining whether or not HBV stigma exists.

*Instrument III: Chronic Liver Disease Questionnaire*

(Younossi, 2016) It is developed to assess the chronic liver disease symptoms related to HBV. There were 29 items total on the CLDQ, spread over the following six domains: stomach symptoms, fatigue, systemic symptoms, activity, emotional function, and worry. The researcher changed it to include 11 things. Items in each domain include: There were two symptoms related to the abdomen, five symptoms related to the body as a whole, and four symptoms related to the activity.

- *Scoring system*

A total score was calculated from worst to best by adding the scores for each item. Replies ranging from "Little time" to "not once in a while"

## RESULTS

Table 1 illustrates the distribution of socio-demographic data of studied HBV patients (N =50)

The Table 1 shows that most the mean age of them was 44.9 ± 10.3 years old. Concerning marital status, the majority of them (86.0%) were married. As regard of level of education, about more than half of studied patients (60.0%) had primary education, while about one-fifth of them were illiterate (20.0%). Concerning occupation, more than one third (38.0%) of studied patients had manual work, While 42% of them were housewives. The majority of them (94.0%) were from rural areas.

Table 2 illustrates the medical data of the studied HBV patients. The table shows 70% of studied patients was from 5-10 years of diseases duration. A higher percentage of them 54% admitted to hospital 1-3 times. Moreover, 34% of studied patients had a positive family history related to HBV. Finally, a higher percentage (64%) of studied patients was infected by razors and/or barbers (98.0%) shared toothbrushes or clippers

Figure 1 reveals that the total mean knowledge scores was significantly improved post-intervention (12.0 ± 1.64) than pre-intervention (10.5 ± 1.90) among studied HBV patients. The Difference was Significant (p=0.002).

Figure 2 shows that the mean of hepatitis B stigma level reduced post-intervention to become (33.1 ± 13.1) than pre-intervention (51.6 ± 15.6) with statistically significant difference among

**Table 1:** Socio demographic data of studied HBV patients (N =50)

| *Socio-demographic characteristics* | *No.* | *%* |
|---|---|---|
| Age / years | | |
| Mean ± SD | 44.9 ± 10.3 | |
| Range | 27.0 – 60.0 | |
| Gender | | |
| Male | 37 | 74.0 |
| Female | 13 | 26.0 |
| Marital status | | |
| Single | 5 | 10.0 |
| Married | 43 | 86.0 |
| Widowed | 2 | 4.00 |
| Educational level | | |
| Illiterate | 10 | 20.0 |
| Read and write | 8 | 16.0 |
| Primary education | 30 | 60.0 |
| Secondary education | 2 | 4.00 |
| Occupation | | |
| Housewife | 21 | 42.0 |
| Manual Workers | 19 | 38.0 |
| Retired | 1 | 2.00 |
| Administrators | 9 | 18.0 |
| Residence | | |
| Rural | 47 | 94.0 |
| Urban | 3 | 6.00 |
| Income | | |
| Enough | 43 | 86.0 |
| Not enough | 7 | 14.0 |

**Table 2:** Medical data of the studied HBV patients (N =50)

| *Medical data* | *Number* | *Percent (%)* |
|---|---|---|
| Disease duration | | |
| 5–10 years | 35 | 70.0 |
| 11–15 years | 11 | 22.0 |
| More than 15 years | 4 | 8.00 |
| Number of hospital admission | | |
| 1–3 | 27 | 54.0 |
| 4–6 | 23 | 46.0 |
| Family history of hepatitis B virus | | |
| Yes | 17 | 34.0 |
| No | 33 | 66.0 |
| Source of infection | | |
| Using razors/barbers | 32 | 64.0 |
| Toothbrushes/dental clinic | 7 | 14.0 |
| Clippers | 8 | 16.0 |
| Sexual contact | 3 | 6.0 |

studied HBV patients. The difference was significant (p=0.001).

Figure 3: showed that there was a reverse correlation between hepatitis B knowledge and hepatitis B stigma post-intervention among studied HBV patients. The increase in knowledge score, the decrease in stigma level (r= -0.340, p=0.016).

Figure 4 showed that there were statistically significant improvements among studied HIV patients related to abdominal symptoms post-intervention in the form of abdominal pain, and abdominal discomfort .

Figure 5 showed that there was statistical significant

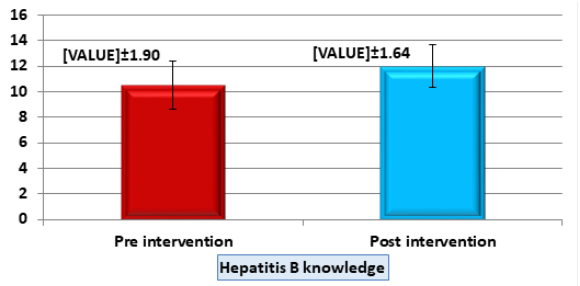


**Figure 1:** Total mean knowledge scores of post-intervention (12.0 ± 1.64) than pre-intervention

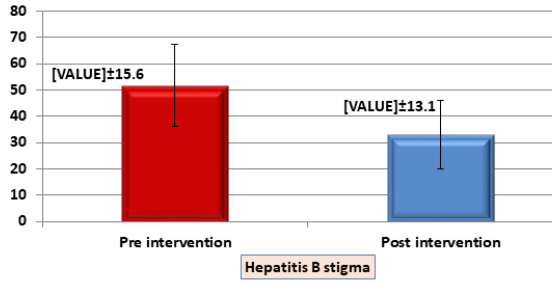


**Figure 2:** Mean of hepatitis B stigma level reduced post-intervention to pre-intervention

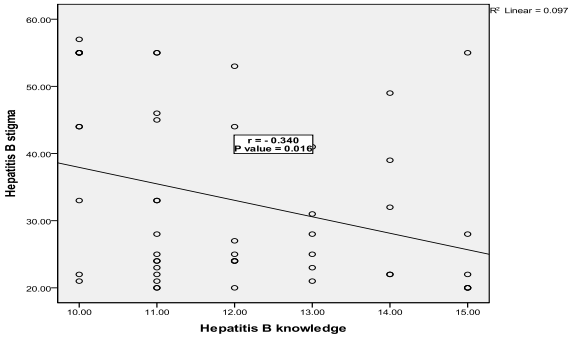


**Figure 3:** Correlation between Hepatitis B knowledge and Hepatitis B stigma post-intervention among studied HBV patients (N=50)

improvement among studied HIV patients related systemic symptoms post-intervention in the form of improving low strength, dropping in patient's energy.

Figure 6 showed that there were statistically significant improvements among studied HIV patients related activity symptoms post-intervention in the form of improving muscle cramps and dry mouth

Table 3 illustrates laboratory investigations among the studied group pre and post-intervention. The table showed that there was a significant improvement among studied HBV patients post-intervention for serum total bilirubin and serum ALT. While there was not any significant difference regarding serum albumin.

## DISCUSSION

Human health is negatively impacted by the chronic hepatitis B virus (HBV). In Egypt, persons with the hepatitis B virus face significant health challenges. According to[12,7] stigma surrounding HBV makes it difficult to prevent, test for, and treat the condition. Patients also encounter discrimination

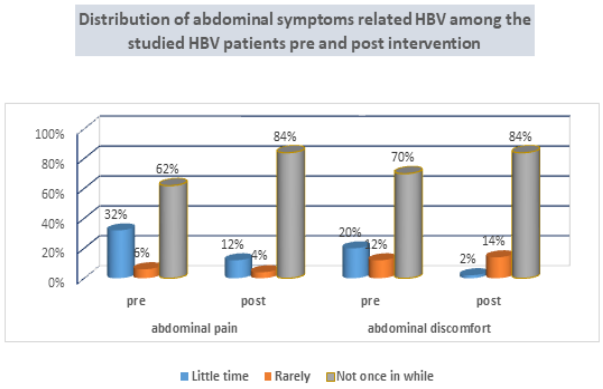


**Figure 4:** Distribution of abdominal symptoms related HBV among the studied HBV patients pre and post intervention (N =50)

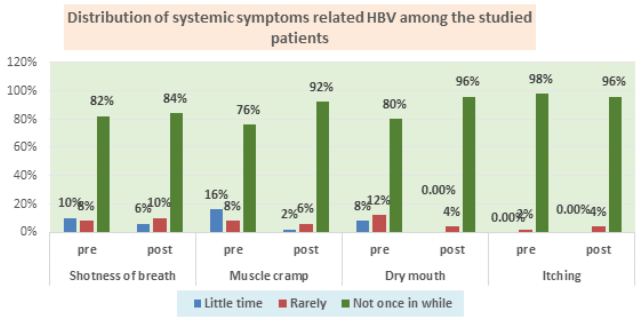


**Figure 5:** Distribution of systemic symptoms related HBV among the studied HBV patients pre and post intervention (N =50)

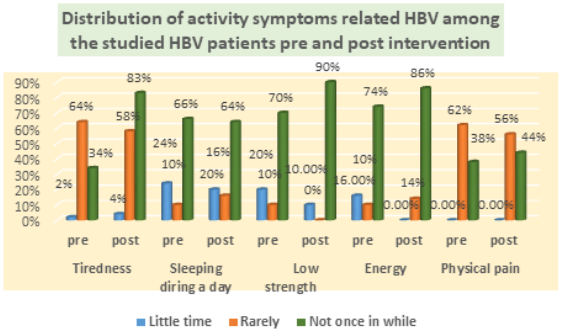


**Figure 6:** Distribution of activity symptoms related HBV among the studied HBV patients pre and post intervention (N =50)

in daily life. As a result, the current study's objective was to investigate the impact of implementing nursing intervention on knowledge, perceived stigma, and health-related outcomes among patients with hepatitis B virus. Regarding age, the current study's findings showed that the HBV under examination had a mean age of 44.9 10.3 years. The results were in line with research by,[19,20] which discovered that the median age of the patients under study was 48 years. In contrast to the current investigation,[21] discovered that the study sample's mean age was 27 years and 4.6 months.

Concerning gender; the current study found that, more than half of the studied patients were male. This was in line with[22] mentioned that the majority of patients were males. In contradiction with the current study results,[20] found that the majority of the studied patients were female.

**Table 3:** Laboratory investigations among studied HBV patients pre and post-intervention (N =50)

| *Medical data* | *Pre-Intervention* | *Post-Intervention* | *Wilcoxon test* | *P- value* |
|---|---|---|---|---|
| Serum albumin | | | | |
| Mean ± SD | 4.22 ± 0.44 | 4.23 ± 0.33 | 1.22 | 0.222 |
| Range | 3.40 – 5.00 | 3.45 – 4.80 | | |
| Total bilirubin | | | | |
| Mean ± SD | 1.10 ± 0.09 | 0.74 ± 0.38 | 5.18 | 0.001* |
| Range | 0.30 – 2.50 | 0.90 – 1.30 | | |
| ALT | | | | |
| Mean ± SD | 32.7 ± 4.46 | 29.02 ± 12.8 | 2.36 | 0.018* |
| Range | 11.0 – 62.0 | 24.0 – 41.0 | | |

*Significant

Regarding marital status and residence; the present study results showed that most study patients were married and lived in rural areas. This result was in line with[23] who reported that most of the patients under study were married. This result makes sense given their age group. However,[12] discovered that the majority of the patients in the study resided in cities.

Regarding to educational level; the results of the present study revealed that the minority of the studied patients were secondary educated while the majority were had primary education and illiterate. This finding was in line with[23] who reported that most of the study patients had preparatory education, and lower highly educated patients. Also[12] found that, more than half of the patients had less than a college bachelor's degree. This may be due to low education may lead to decreased awareness and delayed response to their initial symptoms.

Concerning source of infection; According to the results of the current study, shared razors at the barber shop and shared toothbrushes at the dentistry clinic caused more than half of the analyzed patients to become infected. The results were in line with a study by, which found that social close contact, sexual contact, sharing needles, other kinds of blood exchange, and maternal-fetal transmission during childbirth are the main methods of HBV and HDV transmission in Mauritania. Poor hygiene practices may make interfamilial transmission easier.

In relation to patient's knowledge about hepatitis B. According to the current study, nursing involvement positively impacts patients' understanding of HBV. The outcomes also shown a statistically significant difference between post-intervention and pre-intervention improvements. This outcome was in line with previous research by,[25-28] who reported that a statistically significant difference was found between study and control group regarding knowledge scores and educated patients, working patients, and those residing in urban areas. Improvement of the patient's knowledge about hepatitis B virus after attending the educational program. After the awareness program, the patient's knowledge improved significantly to with optimal knowledge. Also, this result was supported by.[29,30] There are information gaps among CHB patients about hepatitis B. People with poor levels of academic education should be the target of interventions to increase knowledge. On

the other hand, this finding was inconsistence with previous studies that carried out by,[31-34] who proved in their studies that the knowledge of women about HBV was unsatisfactory. From the researcher point of view, improvement in the knowledge of patients perhaps linked to teaching that was provided about disease, which supported by illustrative colored booklet. From the foregoing discussion it can be concluded that the effective nursing intervention can improve health related outcomes, and knowledge level and can reduce stigma score level of the hepatitis B patients.

Regarding to hepatitis B stigma. the current study's results demonstrated a statistically significant difference between the post-intervention and pre-intervention stigma associated with hepatitis B among the patients who were evaluated. This was in line with research by,[35,36,22] which demonstrated that people with the hepatitis B virus experience challenges in their daily lives and are subject to a variety of stigmas. Furthermore,[27,28,37] found that there was strong evidence that stigma was caused by a lack of knowledge regarding transmission routes, which resulted in a fear of infection. HBV patients reported structural/ institutional stigma, with up to 20% feeling they would be refused healthcare and up to 30% believing they would face occupational discrimination as a result of HBV infection, preventing them from disclosing.

Similarly, this was consistent with[39,5] which highlighted that stigma can be combated by educational messaging that portray disorders as illnesses that respond to specific therapy. Counselling has various advantages, including reducing anxiety associated with a new diagnosis and offering an opportunity to communicate real information on treatment, prevention, self-care, and overall well-being. According to the researcher, stigma reduction may be associated to nursing interventions such as disease education backed by an illustrative colored booklet.

According to the current study's findings, there was statistically significant improvement among studied patients following intervention in terms of abdominal pain, abdominal discomfort, poor strength, energy decline, muscle cramps, and dry mouth. This was consistent with the findings of[40,23] who found that comprehensive nursing intervention improved pain, fatigue, anxiety, malnutrition, and quality of life in hepatitis B patients.

This finding was consistent with previous studies conducted by[27,28] which discovered a non-significant improvement in the majority of patients in the intervention group who reported that they benefited from the program .This program aided patients in developing self-management abilities and dramatically improved their QOL .This program serves as a reminder for nurses who care for patients with chronic viral hepatitis to acquire these skills in order to better handle their patients' everyday requirements.

Regarding laboratory investigations; the current study showed that there was a significant improvement among studied HBV patients post intervention for serum total bilirubin and serum ALT. While there was not any significant difference regarding serum albumin. This finding was shared by[41] who conducted a study titled "Preliminary report of Interferon Alfa 2b in combination with Ribivirin for 48 weeks for treatment of Iranian patients with chronic hepatitis C: A quasi-experimental study." "Nursing intervention for patients with liver diseases has a number of positive effects on physical responses, including laboratory findings," according to Shiraz E-Medical Journal.

Likewise, the mean score of the patient's laboratory data improved, which corresponded with[42] who discovered a substantial drop in liver enzyme post-intervention than pre-intervention. In addition, there was a substantial drop in liver enzymes post-program compared to pre-program in a study conducted[43] who reported that "intervention program had significant improvements on liver function tests."

On the other hand[12] reported that when the liver function indexes at admission and days after nursing intervention were compared between the two groups, there was no significant difference in various indexes between the two groups at the time of admission. However, the liver function indexes decreased in both groups thirty days after nursing.Patients in the study group had significantly lower ALT, TBIL, and AST levels than those in the control group.

## CONCLUSION

Implementing a nursing intervention for eight weeks has a vital role in enhancing patient knowledge, lowering perceived stigma level and enhancing health-related outcomes, including symptoms and laboratory parameters ratings among studied patients with Hepatitis B.

## RECOMMENDATIONS

- Establishing periodic public awareness campaigns that emphasize transmission methods of the hepatitis B virus to discover new cases and control infection.
- Implementing a continuous educational program on hepatitis B virus and adjusted policy for public vaccination especially high risk groups.
- Activate periodic screenings for the general population, particularly adults, for laboratory investigations connected to hepatitis B in order to maintain a healthy liver.
- Providing continual education programs regarding hepatitis B to nurses in hepatology units to help them treat symptoms such as abdominal pain, body pain, dry mouth, muscle cramps, and itching.
- Encourage people to change their behaviors in order to live healthier lives and avoid infection.
- More research is needed to evaluate whether more educational interventions can enhance outcomes in hepatitis B patients.

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