Effectiveness of Mindfulness-Integrated Cognitive-Behavioral Group Therapy in Motivational Structure of Hepatitis B Patients

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Abstract

Background: It is essential to understand and support hepatitis B patients to minimize their challenges and limitations and provide them with appropriate treatment. Therefore, it is essential to incorporate training and consulting programs to prepare for and identify various aspects of the disease.

Objectives: The present study aimed to investigate the effectiveness of mindfulness-integrated cognitive-behavioral group therapy (MiCBT) in the motivational structure of hepatitis B patients in Tehran, Iran.

Methods: This quasi-experimental study utilized a pretest-posttest design with a control group. The study sample consisted of 28 hepatitis B patients selected from all patients visiting specialist clinics in Tehran in 2020. Following the interviews and completion of the Personal Concerns Inventory, 14 patients were selected per group using simple random sampling and were randomly divided into intervention and control groups. A posttest was conducted after 12 sessions of MiCBT (one 90-min group session weekly for three months). Data were analyzed using the multivariate analysis of covariance in SPSS software.

Results: The results revealed a significant increase in adaptive motivational structure (P < 0.001) and a significant decrease in maladaptive motivational structure (P = 0.012) in hepatitis B patients following the therapeutic intervention.

Conclusions: The study indicated the MiCBT effectiveness in increasing adaptive motivational structure and decreasing maladaptive motivational structure in hepatitis B patients. As a therapeutic approach, MiCBT can make the motivational structure of hepatitis B patients more adaptive.

Keywords: Cognitive-Behavioral Therapy, Mindfulness, Motivation, Hepatitis B

1. Background

Chronic viral hepatitis is a considerable threat to global health, with a 3.5% global prevalence in the general population (1). Carriers of hepatitis B are at high risk for hepatocellular carcinoma (HCC), and they are assessed for chronic liver disease severity according to the model for end-stage liver disease (MELD) (2, 3). Like other chronic diseases, hepatitis B affects individuals’ mental and social health and brings about clinical complications (4). In general, hepatitis B patients are not emotionally healthy (5). Besides the severe complications of hepatitis B, the patients suffer from severe depression and anxiety due to medications such as interferon, ribavirin, and amantadine. In addition, numerous disease complications, medication side effects, and society’s rejection can induce emotional instability. These patients become very irritable, have a shallow tolerance threshold, and develop psychological problems over time (6).

The effects of psychosocial (stigma, disclosure, depression, and anxiety) and medical (medication-induced psychological disorders) factors in hepatitis patients B indicate that they tend to suffer from mental disorders that can affect their motivation (7, 8). Mental health is the prerequisite for motivation and goal orientation. Although the motivational structure in chronic diseases, in general, and hepatitis, in particular, is unclear, social and psychological issues and problems may make the motivational structure more maladaptive (9,10). Cox and Klinger (11) defined adaptive and maladaptive motivational structures. They assumed that individuals with the maladaptive motivational structure are more likely to provoke their emotions in unhealthy ways. These individuals usually look for avoidance goals and believe that achieving them will be of little pleasure. On the contrary, individuals with adap-
2. Objectives

Based on the above considerations, the present study aimed to investigate the effectiveness of mindfulness-integrated cognitive-behavioral group therapy (MiCBT) in the motivational structure of hepatitis B patients.

3. Methods

This quasi-experimental study was conducted using a pretest-posttest design with a control group. The statistical population comprised all hepatitis B patients, aged 25 and 45 years, living in Tehran (Tehran Association of Patients with Liver Diseases) in 2020 with relatively high maladaptive motivational structure. Sample selection for the present study was made from May to July 2020. Twenty-eight hepatitis B patients were selected using convenience sampling and randomly divided into intervention (n = 14) and control (n = 14) groups. We included 14 hepatitis B patients in each group using G-power statistical software with a test power of 0.95 and $\alpha = 0.05$. The researcher did randomization after obtaining participants’ consent, and the participants were assigned to the groups by the table of random numbers. The patients were selected based on specialized hepatitis diagnostic tests under the supervision of internal medicine specialists. Inclusion criteria were an age of 20 - 45 years, hepatitis B diagnosis, minimum high school education, and absence of brain damage, mental retardation, hallucinations, delusions, and depression. The exclusion criteria included a history of mental illness diagnosis and absence from more than two treatment sessions. As the participants were selected and assigned to the intended groups, good relations were made to attract their cooperation, and necessary explanations were provided. Informed consent was obtained from them to participate in the study and perform the tests. First, a psychologist examined all participants using the motivational structure scale under similar conditions. Questionnaires were filled out anonymously, and the therapists guaranteed the therapist-client confidentiality. For ethical considerations, the researchers received written consent from the participants in the research.

The corresponding author, a Ph.D. student in health psychology and formal training in CBT and mindfulness, implemented the therapeutic interventions. Each group therapy session was designed based on the integrative cognitive-behavioral approach. The control group received no MiCBT. At the end of the study, to observe ethical considerations, the control group received a course of MiCBT. The intervention group participated in 12 group therapy sessions (one 90-min session weekly for three months) using MiCBT. A summary of group therapy sessions using MiCBT is presented in Table 1.

3.1. Instruments

3.1.1. Demographics Questionnaire

In the present study, a researcher-made questionnaire was used to collect the demographic characteristics of the participants.
participants, including age, education, marital status, and history of the disease.

3.1.2. Personal Concerns Inventory

The 10-item personal concerns inventory (PCI) was developed by Cox and Klinger in 2004 to assess the motivational structure. It was completed in three phases, and participants scored the items from 0 to 10 in 11 facets of life, including: (1) achievement: The degree of inclination or desire to achieve goals; (2) avoidance: Prevention or avoidance of achieving goals; (3) control: The amount of control over that goal; (4) the amount of information about how to achieve goals; (5) the probability of success if one tries; (6) chance: Participant's belief in the chance to achieve goals without effort; (7) satisfaction in the intervention of achievement that is expected when achieving goals; (8) dissatisfaction when achieving goals; (9) dissatisfaction with not achieving goals; (10) commitment: The degree of determination to achieve goals; and (11) the probable time required to achieve goals. In this inventory, items 1, 2, 3, 4, 6, and 7 were about adaptive motivational structure, and items 5 and 8 were about maladaptive motivational structure. The minimum and maximum scores for adaptive motivational structure are 0 and 60, respectively. A higher score indicates a higher level of adaptive motivational structure. Moreover, the minimum and maximum scores of the maladaptive motivational structure are 0 and 20, respectively. A higher score indicates a higher level of maladaptive motivational structure (23). Ebrahimi et al. (24) reported Cronbach's alpha of 0.75 for the questionnaire. In this study, Cronbach's alpha coefficient was 0.79 for the questionnaire.

3.2. Statistical Analyses

Data were analyzed by descriptive and inferential statistics, such as mean, standard deviation, and multivariate analysis of covariance. SPSS version 19.0 was further used for analyzing the data.

4. Results

In this study, 28 female patients with hepatitis B were investigated to determine the effect of integrative group therapy. According to the descriptive findings, the mean age was 34.15 ± 6.48 and 31.86 ± 5.38 years in the intervention and control groups, respectively. The demographic characteristics of the participants are shown in Table 2.

Motivational structures in the pretest and posttest were measured for the intervention and control groups,
Table 2. Demographic Characteristics of the Participants

<table>
<thead>
<tr>
<th>Groups</th>
<th>Age (y)</th>
<th>Duration of Illness (y)</th>
<th>Education</th>
<th>Marital Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>High School Education</td>
<td>College Education</td>
</tr>
<tr>
<td>Intervention</td>
<td>34.15 ± 6.48</td>
<td>4.75 ± 2.39</td>
<td>9 (64.29)</td>
<td>5 (35.71)</td>
</tr>
<tr>
<td>Control</td>
<td>31.86 ± 5.38</td>
<td>5.11 ± 2.75</td>
<td>10 (71.43)</td>
<td>4 (28.57)</td>
</tr>
</tbody>
</table>

Values are expressed as mean ± SD or No. (%).

Table 3. Mean ± Standard Deviation (SD) of Variables in Experimental and Control Groups in Pretest and Posttest

<table>
<thead>
<tr>
<th>Variables and Phase</th>
<th>Intervention</th>
<th>Control</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptive motivational structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>30.50 ± 7.11</td>
<td>27.35 ± 7.11</td>
<td>0.328</td>
</tr>
<tr>
<td>Posttest</td>
<td>44.00 ± 12.26</td>
<td>23.42 ± 6.06</td>
<td>0.001</td>
</tr>
<tr>
<td>Maladaptive motivational structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>12.21 ± 3.04</td>
<td>11.85 ± 3.48</td>
<td>0.687</td>
</tr>
<tr>
<td>Posttest</td>
<td>6.78 ± 4.63</td>
<td>10.92 ± 3.95</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Abbreviation: MiCBT, mindfulness-integrated cognitive-behavioral group therapy.

Data distribution was examined, and the Shapiro-Wilk test and Levene’s test were used to see whether data were parametric or non-parametric. The results indicated that the sample had a normal distribution. The non-significant results of Levene’s test for both components of motivational structure including maladaptive motivational structure in the pretest \(F (1, 26) = 0.82, P = 0.777\) and posttest \(F (1, 26) = 0.97, P = 0.333\) and adaptive motivational structure in the pretest \(F (1, 26) = 3.024, P = 0.049\) and posttest \(F (1, 26) = 0.18, P = 0.676\) indicated the homogeneity of variances. The Box’s M test revealed the homogeneity of the covariance matrices. The test indicated that the homogeneity of the covariance matrices was met (Box’s M = 8.57, F = 2.62, P = 0.050); thus, the analysis of covariance was permitted.

The MANCOVA results indicated a significant difference between the intervention and control groups in at least one variable by eliminating the pretest effect \(F = 24.12, P < 0.001\). Univariate analysis of covariance was conducted to decide which variable contributed to this significant difference, as presented in Table 4. The results suggested a significant difference between the intervention and control groups in adaptive motivational structure \(F = 36.79, P = 0.001, \eta^2 = 0.60\). Based on the results, the mean score of the adaptive motivational structure increased towards being more adaptive from the pretest to the posttest. In other words, MiCBT improved the scores of motivational structure of participants in the intervention group compared with the control group. There was a significant difference between the intervention and control groups in maladaptive motivational structure \(F = 7.31, P = 0.012, \eta^2 = 0.23\). The effect rate was 0.23, i.e., 23% of individual differences in the posttest scores of the maladaptive motivational structure were related to the effect of integrative psychological interventions.

5. Discussion

The present study aimed to investigate the effectiveness of MiCBT in the motivational structure of hepatitis B patients. The results indicated that MiCBT significantly increased adaptive motivational structure in hepatitis B patients, which is in line with the results of Javaherforouzadeh and Soltani Kuhbanani (25), demonstrating that mindfulness skills training increased motivation to achieve and stay committed to goals, reduced avoidance, and belief in chance, and perceived duration of achieving goals. Much research has been conducted on the effect of mindfulness on depression, stress, aggression, anxiety, and many other disorders, showing positive results (26-28).

In the mindfulness part of this course, the participants were enabled to pay attention to the warning signs of anxiety, repetitive thinking cycles, and distraction of negative thoughts (21). The therapy emphasized the understanding of the cognitive and psychological dimensions of experiences, and the participants learned how to divert their minds from one approach to another while becoming aware of their mental patterns at all times through mindfulness exercises (26). They practiced being more aware of negative thoughts and feelings in case of potential relapse and responding to those thoughts and feelings in a way that enables them to detach themselves from frustrating...
and depressing thoughts. It developed their mental ability to achieve their goals (27). Considering that emotional discharge was one of the main themes in mindfulness and cognitive-behavioral intervention, it seems that the integrative intervention positively affected their emotions in achieving goals (29). Individuals who are more aware of their emotions and feelings and are non-judgmental experience more positive emotions, which, in turn, reduces problems and encourages the use of appropriate strategies to cope with challenges. In addition, it makes people reappraise life events more positively, which boosts their life expectancy (30). Therefore, integrative therapy seems to increase life expectancy, enthusiastic motivation, optimism in achieving goals, emotional involvement in achieving goals, and mental empowerment among patients, making their motivational structure more adaptable.

Since this study was conducted on female patients with hepatitis B in Tehran, precautions should be taken if the results are generalized to other centers and cities. It is also suggested to examine the effectiveness of this intervention in the male population.

5.1. Conclusions

This study confirmed the effectiveness of the integrative approach in improving the motivational structure. In the context of comprehensive, supportive, and palliative programs of MiCBT, especially in a specific situation such as the peak of psychosocial problems in hepatitis patients, it is suggested to incorporate MiCBT in therapeutic interventions to boost the patients’ purposefulness and adaptive motivation. Applying the therapeutic package based on the proposed model in line with medical interventions is suggested. We used a unisex statistical sample in this study, including only female patients with hepatitis B. Moreover, the target population came from Tehran, Iran. It is suggested that future studies be conducted on other statistical populations to use the results as a basis for comparison in a meta-analysis.

Footnotes

Authors’ Contribution: Marjan Faramarzi and Javad Khalatbari, study concept and design, data acquisition, analysis, and interpretation, and statistical analysis; Shohreh Ghoban Sharoudi and Khadijeh Abolmaali, administrative, technical, material support, and study supervision; Javad Khalatbari, critical revision of the manuscript for important intellectual content.

Conflict of Interests: No conflict of interest is declared.

Ethical Approval: The study was approved by the Ethics Committee of Islamic Azad University-Tonekabon Branch (code: IR.IAU.TON.REC.1399.058).

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Informed Consent: Researchers received written consent from the participants in the research.

References


