

Original article

Employment of Patients After Liver Transplantation

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Abstract

Aim: To determine the prevalence of employment of patients after liver transplantation (TX) and the history of employment, to compare employment with patients' opinions about their ability to work and to establish possible reasons for frequent unemployment.

Methods: Ninety-eight respondents participated in the study. They were the first 98 liver transplant patients who came for a check-up at Merkur University Hospital by the time of the research and agreed to participate in the study. We created and used a questionnaire about the level of education and employment prior to and after the liver TX.

Results: Before the diagnosis of liver disease, 59.18 % of the patients were employed, while after liver TX, at the time of the research, the employment rate decreased to 8.2 %. During the same time span, the number of retired patients increased from 3.1 % before the diagnosis to 63.3 % after liver TX at the time of the research. The main reasons for unemployment were poor health due to liver disease and employers' unwillingness to hire these patients because of a potential risk of adjustment of working hours. Median follow-up time after liver TX was 3 years (interquartile range 2 – 6).

Conclusion: Many patients with severe liver disease are unemployed. Liver TX did not increase the rate of employment of Croatian patients. Patients should be supported by society in finding appropriate employment.

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Introduction

Liver transplantation (TX) is the standard method of treatment of end-stage liver disease (ESLD), acute liver failure and selected cases of hepatocellular carcinoma. Patients who underwent TX have better survival rates. Due to an improvement in the surgical treatment and modern immunosuppressive medicaments, the 5-year survival rate increased up to 70 % (1,2,3). The term "health-related QoL" (HRQOL, health-related quality of life) has been in use for several decades. This term encompasses the effect of health, i.e. of the illness and of treatment of the illness on the patient's physical, cognitive and social functioning. Ability to work is considered to be a significant indicator of well-being and health status (4,5). Liver TX, as the best method of treatment of ESLD, improves survival, health status, QoL and ability to work (6-8). However, transplant patients frequently face unemployment, sick leave and retirement. We thus presumed that liver TX, although the best method for the treatment, unfortunately does not improve the patients' access to employment. The aims of the study were to determine the prevalence of employment of liver transplant patients, to compare employment with the patients' opinions about their ability to work and to establish possible reasons for frequent unemployment. There are no available published data about the employment of liver transplant patients in Croatia to date.

Patients and methods

The research was conducted at Merkur University Hospital in Zagreb in 2018. Ninety-eight liver transplant patients were selected as the subjects of our study. The first 98 patients who came for a check-up by the time of the research were included in the study. The patients were asked to fill in a questionnaire. The questionnaire was created specifically for our study by the researcher and it included data about employment before the diagnosis of liver disease, before and after liver TX and at the time of the research. We separately compared overall employment and working patients. Overall employment included all employed participants, even those who were on sick leave. Demographic data and data about liver disease were taken from medical records. Seventy (71.4 %) participants were male and 28 (28.6 %) were female. Participants were divided into groups according to age, with an interval of 10 years. Fifteen participants (15.3 %) were born in the period between 1941 and 1950. Most participants, 42 (42.9 %) of them, were born between 1951 and 1960, while 33 (33.7 %) participants were born between 1961 and 1970. The median age of participants was between 58 and 67 years (interquartile range, IQR, 48 – 67). The youngest patient was 26 years old and the oldest one was 67 years old (Figure 1). Median follow-up time (from liver TX to the research) was 3 years (IQR 2 – 6).

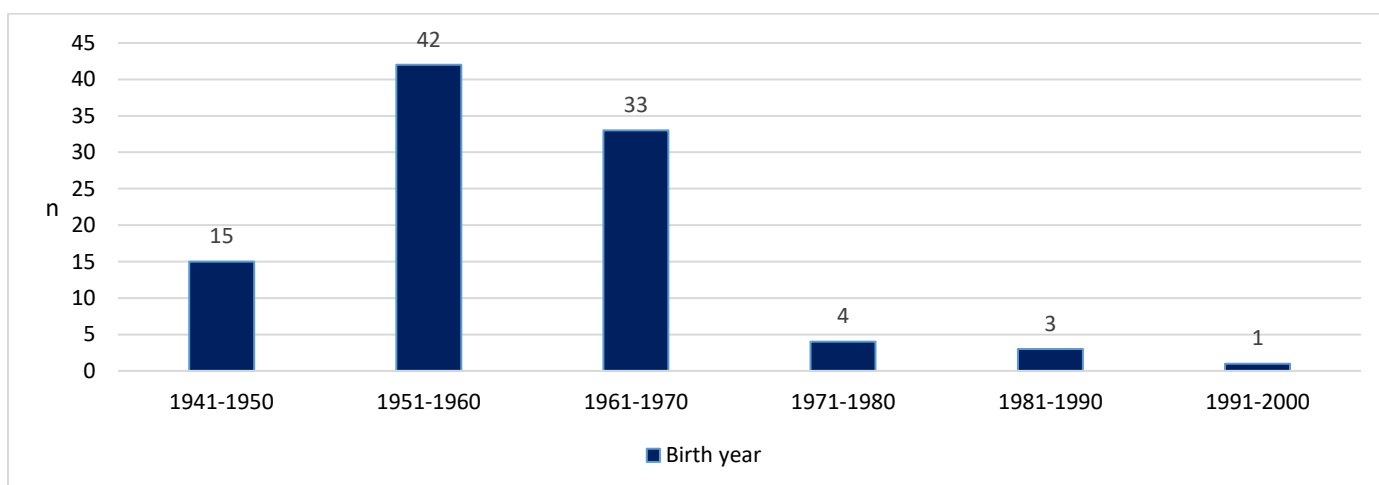


Figure 1. Respondents divided into groups according to age, with an interval of 10 years (N = 98)

Statistical analysis

Data were statistically analysed using SPSS (version 16.0. SPSS Inc., Chicago, IL, USA). Descriptive statistics included the median with IQR for numeric data. Absolute and relative frequencies were used for nominal data. Differences were obtained by the Chi-square test. Statistical significance was accepted if P was < 0.05 .

Results

Ninety-eight patients were included in the research. Of 98 participants, 19 completed only primary education or less (19.4 %), 58 finished secondary education (59.2 %), 12 had higher education qualifications (12.2 %) and 9 had a university degree (9.2 %). Most of the participants, 50 of them (51 %), waited for liver TX

for more than a year. Twenty-nine participants (29.6 %) waited for liver TX less than six months, while 19 of them (19.4 %) waited between 6 months and a year. All the patients selected for the research underwent liver TX between 2002 and 2017. At the time of the research (in 2018), 4 participants already had two liver TXs. Most of the participants, 21 of them (21.4 %), underwent liver TX in 2017. In 2016, 17 participants underwent liver TX, while 14 of them had liver TX in 2015.

Compared to the period before receiving the diagnosis of severe liver disease, employment among the working patients before liver TX decreased by 37.8 % (59.2 % before the diagnosis, 21.4 % before liver TX). Overall employment decreased by 13.2 % (62.2 % before the diagnosis, 48.9 % thereafter). The number of patients on sick leave (for more than a month) increased by 9 times (3 before the diagnosis, 27 just before TX) (Figure 2).

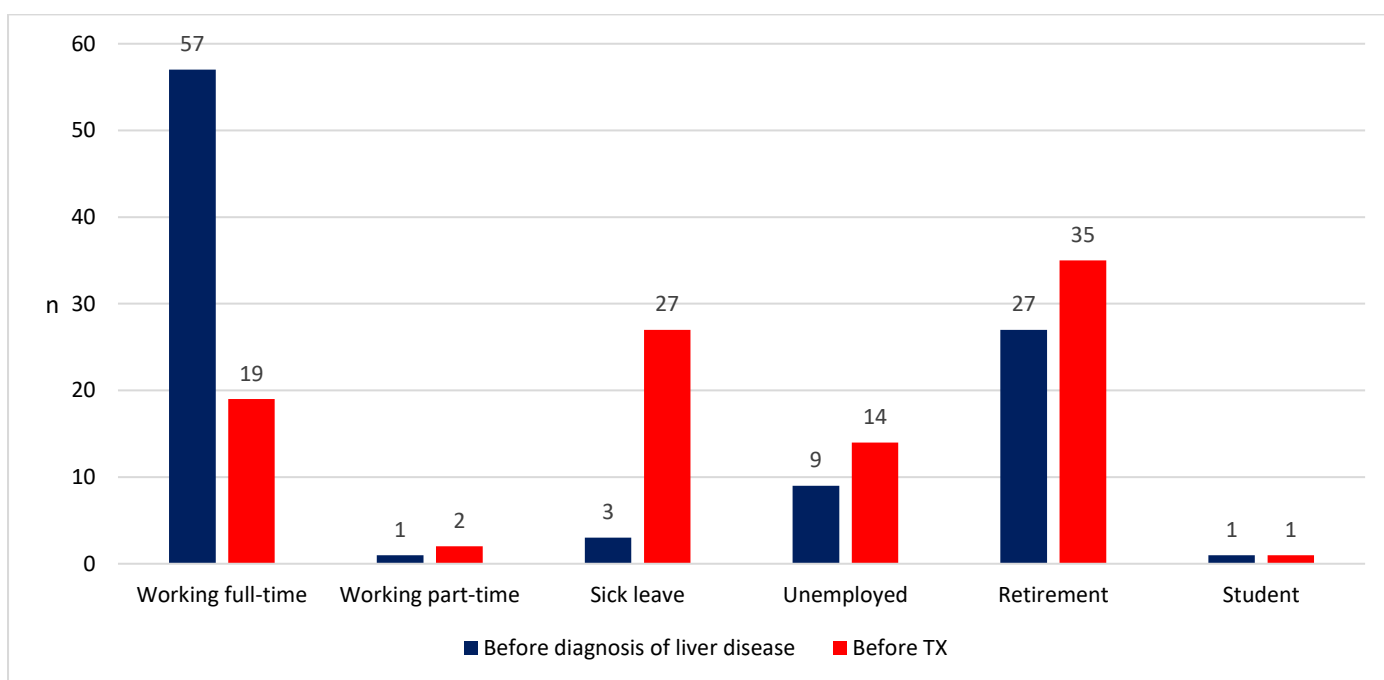


Figure 2. Employment of patients (N = 98) before diagnosis of liver disease and just before liver transplantation (TX)

The number of patients who were working early after TX decreased by 9.2 % compared to the period just before TX (21.4 % just before TX, 12.2 % early after TX). Overall employment

decreased by 10.2 % (49 % just before TX, 38.8 % early after TX) (Figure 3).

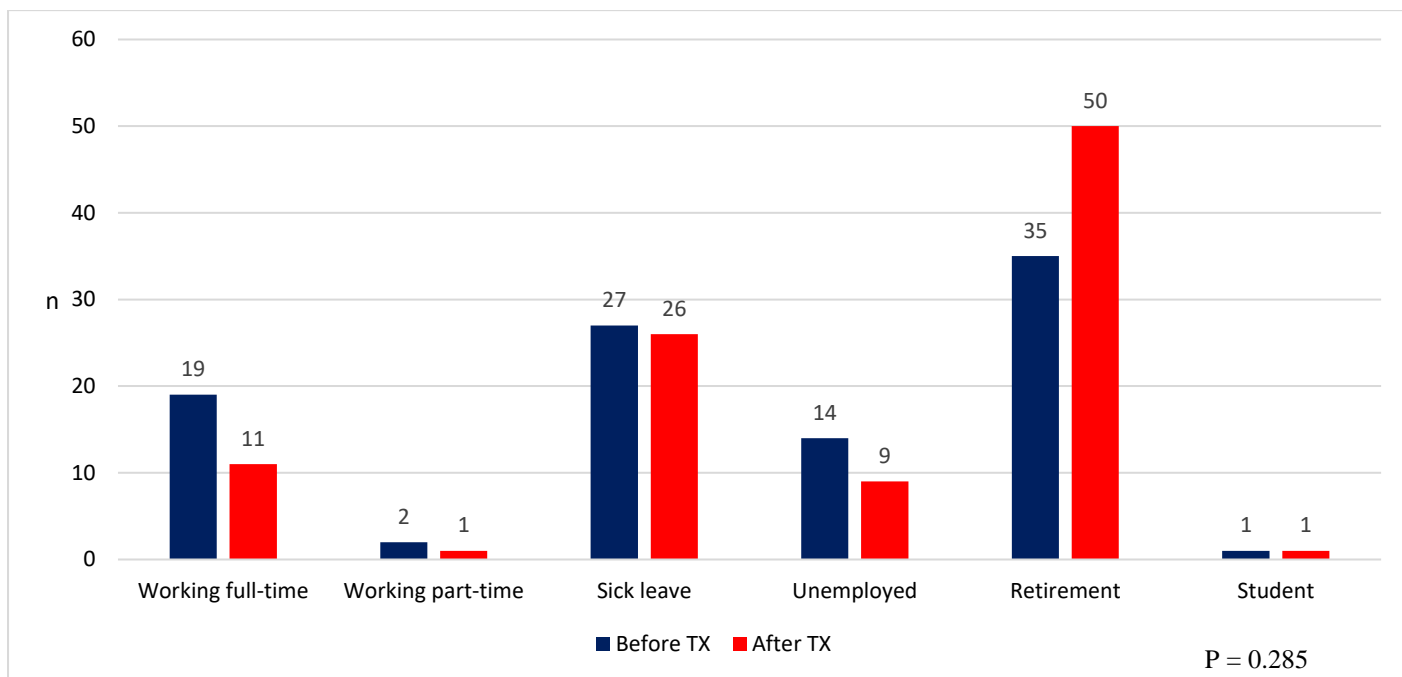


Figure 3. Employment of patients (N = 98) just before and early after liver transplantation (TX)

At the time of the research, the number of employed patients decreased by 4 % compared to the period early after TX (12.2 % early after TX, 8.2 % at the time of the research). The number of

patients using sick leave decreased by 7.1 % in the same period (26.5 % early after TX, 19.4 % at the time of research) (Figure 4).

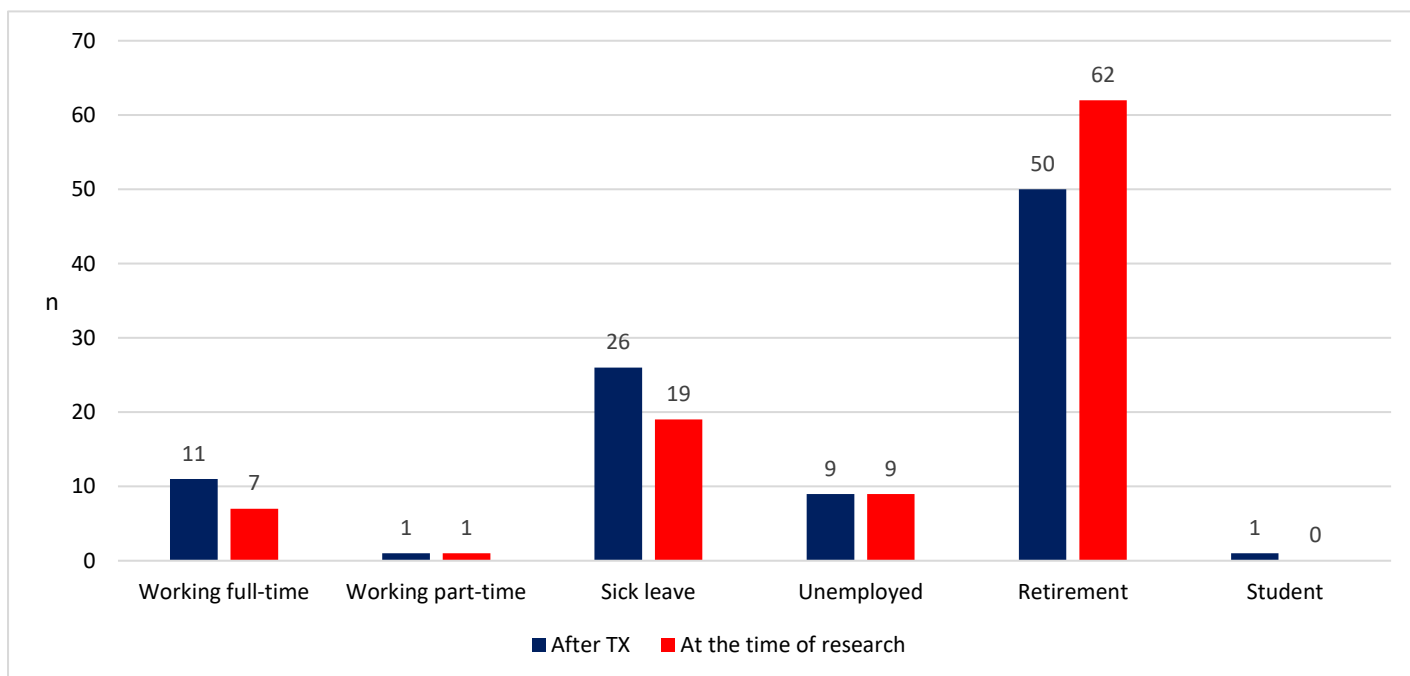


Figure 4. Employment of patients (N = 98) early after liver transplantation (TX) and at the time of the research

At the time of the research, the number of employed patients decreased by 51% compared to the period before the diagnosis of ESLD (59.2% before the diagnosis, 8.2% at the time of research). In the same period, the number of

patients on sick leave increased by 16.3% (3.1% before the diagnosis, 19.4% at the time of the research) and the number of retired patients increased by 60.2% (3.1% before the diagnosis, 63.3% at the time of the research) (Figure 5).

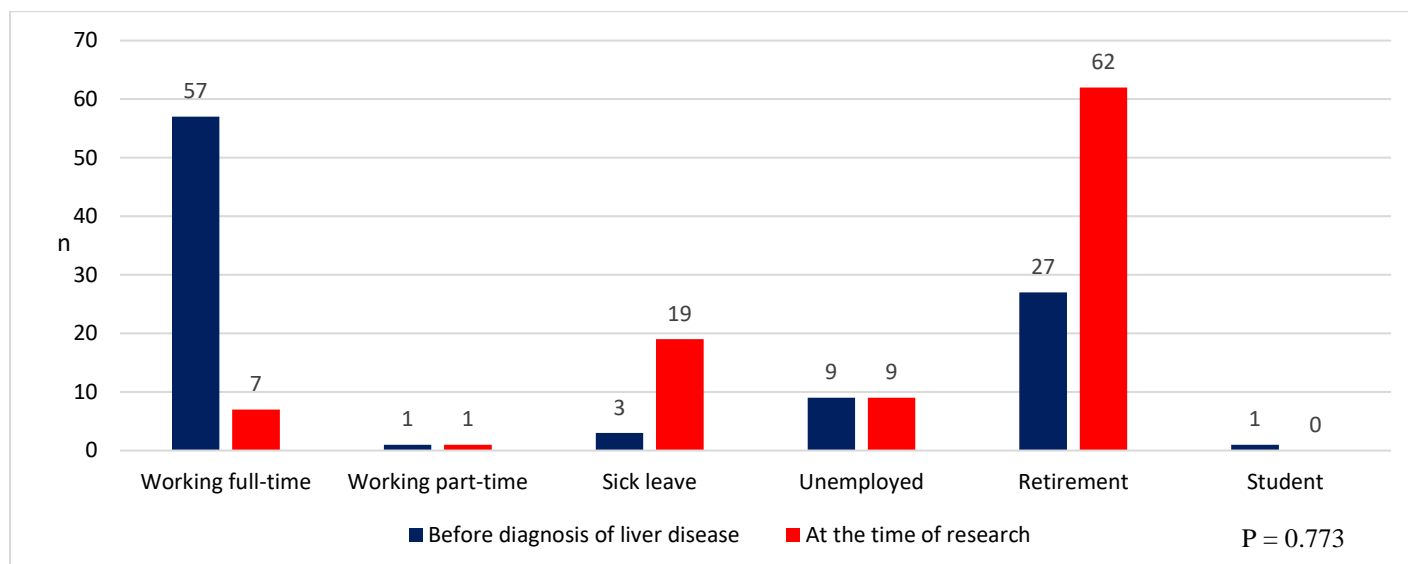


Figure 5. Employment of patients (N = 98) before the diagnosis of liver disease and at the time of the research

At the time of the research, 8 participants were employed (8.2%), while 34 felt capable of working (34.7%). Nineteen participants felt capable of working full-time, while 15 felt capable of working part-time (P = 0.773). As the main reason for unemployment, 22 patients (22.5%) reported poor health due to ESLD, 4 of them (4.1%) claimed that employers did not want to hire workers who underwent liver TX, 22 of them reported some other reason, while 41 did not give an answer.

Discussion

This is the first research on employment of liver TX patients in Croatia. Just before liver TX, overall employment had already decreased by 13.2% compared to the period before receiving the diagnosis of severe liver disease. Although patients presumably have a better health status and QoL after liver TX, the number of employed patients early after liver TX decreased by 9.2% compared to the period just before liver TX. At the time of the research, only 8.2% of patients were employed. Many researchers described

similar results regarding employment after liver TX. In 2018, E. R. Waclawski and P. Noone published a systematic review of the impact of liver TX on employment (9). They included 13 studies published from January 2001 to December 2016. All the studies they found showed either a fall in the employment rate or no effect on the employment rate. Overall employment ranges from 18 to 44% after liver TX, which was higher than in our research. Employment after liver TX was lower than after other organ TX, such as kidney or heart TX, but higher than after lung TX, as shown in a study which included 281 kidney, heart, liver and lung transplant patients (10). Compared to the research about employment after kidney TX in Croatia, conducted at the Clinical Hospital Centre Osijek in 2017, employment after liver TX at the time of the research was lower than after kidney TX (namely 18.1%), which corresponded to the results mentioned earlier (11).

What was the reason of unemployment after TX? After TX, patients need to take immunosuppressive medicaments for the rest of

their lives. Immunosuppressive therapy has adverse effects, including infections, diabetes mellitus, nephrotoxicity, cardiovascular disease and osteoporosis (12). Moreover, patients have a mental burden because of the disease. However, our study has shown that 8.2 % of the participants were employed, while 34.7 % of them felt capable of working, which indicates a significant disproportion. The question is what caused that disproportion. As the main reason for unemployment, the majority of respondents reported poor health due to ESLD, while the minority of respondents claimed that employers

did not want to hire the patients who underwent TX.

Conclusion

Even though TX improves the patients' health status and survival, it is necessary to ensure that they have a better QoL and allow them to return to their usual activities, including appropriate employment. Social support is needed to improve the chances of employment.

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