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Standardized Evaluation of Candidates Before Liver Transplantation With the Transplant Evaluation Rating Scale

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Background: *The Transplant Evaluation Rating Scale (TERS) was developed to provide a standardized evaluation of the psychosocial functioning of patients, before transplantation. Yet, the first 2 items of the TERS are based on psychiatric diagnoses referring to Diagnostic and Statistical Manual (DSM)-III-R, which leads to a duplication of disorder-specific and symptom-specific contents, that makes it complex to rate. Moreover, the TERS has not been updated to DSM revisions and DSM is not used for the official clinical routine documentation in several European countries.* **Objective:** *The objective of this study was, therefore, to investigate the psychometric properties of a diagnoses-corrected version of the TERS (items 1 and 2 omitted).* **Methods:** *In 85 patients awaiting liver transplantation, the discrimination capacities, predictive value, convergent validity, and interrater reliability of the original version (TERS10) and the diagnoses-corrected version (TERS8) were analyzed.* **Results:** *In both versions, patients with psychiatric diagnoses (69.4%) exhibited significantly higher TERS mean values than patients without psychiatric disorders. This also held for patients who were temporarily not found eligible for transplantation in the psychosocial evaluation (25.9%) compared with patients who were eligible for listing for transplantation. Furthermore, the area under the curve was >0.90 for both versions and a cutoff of 32.25 is suggested for TERS8 (sensitivity of 90.9% and specificity of 87.3%).* **Conclusions:** *Our results substantiate good psychometric properties of the revised (diagnoses corrected) TERS, which is of great benefit for standardized psychosocial evaluation before liver transplantation. Further, validation of TERS8 and its cutoff in other samples of (liver) transplantation patients is needed.*
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Key words: Liver transplantation, Psychosocial functioning, Psychosocial evaluation, Screening, Transplant Evaluation Rating Scale.

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INTRODUCTION

Liver transplantation has become a standard method of therapy in end-stage chronic liver disease.[1] The 1- and 3-year survival rates have been reported as 86% and 78%, respectively.[2] However, a scarcity of donor organs is still the limiting factor in liver transplantation. Currently, there are nearly 1534 patients on the waiting list in Germany,[3] with the waiting time for liver transplantation being approximately 6–24 months.[4] The serious donor-organ shortage and high waiting list mortality emphasize the medical, psychosocial, and ethical responsibility associated with the selection of eligible candidates for transplantation. Careful psychosocial evaluation before transplantation is very important, because poor psychosocial functioning pretransplantation can impair transplantation outcomes and posttransplant quality of life, psychosocial functioning, and adherence to treatment.[5–10]

In the course of international and national standardization efforts, pretransplant psychosocial evaluation is structured according to the guidelines of the German Medical Association ("Bundesärztekammer"[11]) in Germany. In addition, the German Transplant Society (Deutsche Transplantationsgesellschaft) is currently developing guidelines for the psychosocial evaluation. Depending on the extent of poor psychosocial functioning, patients are temporarily excluded from the transplantation waiting list, or evaluated as eligible, but as at risk for poor posttransplantation outcomes. Both patient groups should be supported by psychotherapeutic interventions until re-evaluation or during the pretransplant waiting time or both and after transplantation if necessary.[12]

An objective and valid assessment of psychosocial functioning to detect patients at risk should be made possible by applying a rating instrument that takes multiple psychosocial factors into account. The Transplant Evaluation Rating Scale (TERS[13]) was developed to provide a standardized psychologic evaluation of pretransplant psychosocial functioning. It has been officially translated into German[14] and has gained a broad implementation in German-speaking countries.

Psychometric properties of the TERS have already been investigated by Hoodin and Kalbfleisch,[15] who surveyed a group of 345 patients before bone marrow transplantation and demonstrated a good interrater reliability, good convergent validity relative to Minnesota Multiphasic Personality Inventory subscales, and a 2-factor structure accounting for a significant amount of variance in functional impairment at 12 months. The German translation of the TERS has also shown good interrater reliability and good discrimination capacities in liver transplant patients.[16] Furthermore, the results of the clinical evaluation (eligibility) could also be verified with the TERS in lung transplant patients.[17] Based on their clinical relevance and soundness, items of the TERS have been used in modeling rating instruments for special groups of transplant patients such as in the Psychosocial Assessment Interview of Candidates for Hematopoietic Stem Cell Transplantation (PAIC-HSCT) (a questionnaire for patients after human stem cell transplantation),[18] and in the Pediatric Transplant Rating Instrument.[19] Several prospective studies have also investigated the association between the TERS and transplantation outcomes. Poor pretransplant psychosocial functioning significantly predicted life satisfaction and need for counseling.[20] Furthermore, better preoperative psychosocial functioning and sense of coherence were associated with good psychosocial outcome over the posttransplant period of 2 years.[21] Moreover, the TERS scores also predicted use of resources in patients undergoing hematopoietic stem cell transplantation.[22]

Yet, the first 2 items of the TERS are based on psychiatric diagnoses referring to Diagnostic and Statistical Manual (DSM)-III-R criteria (Diagnostic and Statistical Manual of Mental Disorders; item 1 covers axis I disorders and item 2 axis II disorders). This leads to a duplication of disorder-specific and symptom-specific contents, which makes it complex and ambiguous to rate. For instance, alcohol consumption could by habit be coded in "axis I disorder" (item 1) and additionally in "substance abuse/use" (item 3). Furthermore, patients might exhibit symptoms such as depressive mood and interaction problems concurrent with an alcohol-related disorder, and it is doubtful if these symptoms should be included in item 3 or separately be coded in item 1 and 2. In a similar manner, depression is often accompanied by symptoms of social withdrawal and it is doubtful if these symptoms should be included in item 1 or separately be coded in item 6 (social support). Particularly, owing to the high weightings of item 1 and 2, this might be problematic—we assume that relevant problems on item 1 and 2 would be apparent in item 3–10. Moreover, axes I–III were integrated into a monoaxial system in DSM-5