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responsiveness of the TSK-NL Heart

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DOI

[10.1093/eurjpc/zwab061.364](https://doi.org/10.1093/eurjpc/zwab061.364)

Publication date

2021

Document Version

Final published version

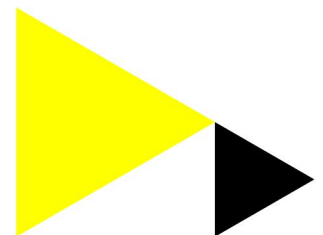
Published in

European journal of preventive cardiology

[Link to publication](#)

Citation for published version (APA):

ter Hoeve, N., Keessen, P., den Uijl, I., Visser, B., Kraaijenhagen, R. A., Sunamura, M., Latour, C. H. M., Scholte op Reimer, W. J. M., & Van Den Berg-Emons, HJG. (2021). Changes in fear of movement in patients attending cardiac rehabilitation: responsiveness of the TSK-NL Heart. *European journal of preventive cardiology*, 28(suppl. 1), i358. <https://doi.org/10.1093/eurjpc/zwab061.364>



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Changes in fear of movement in patients attending cardiac rehabilitation: responsiveness of the TSK-NL Heart

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Funding Acknowledgements: Type of funding sources: None.

Background: An important factor related to low physical activity in cardiac patients is fear of movement (kinesiophobia). The setting of cardiac rehabilitation (CR) seems suitable for targeting kinesiophobia. Nevertheless, the impact of CR on kinesiophobia is currently unknown, partly due to the absence of information on the responsiveness of instruments to measure kinesiophobia.

Purpose: To determine the responsiveness of the Dutch version of the Tampa Scale for Kinesiophobia questionnaire (TSK-NL Heart), to assess changes in kinesiophobia during participation in CR and to assess predictors of high levels of kinesiophobia at completion of CR.

Methods: This study was performed among 109 patients (mean age: 61 years; 76% men) who participated in a 6- till 12-week CR program. Kinesiophobia was measured using the TSK-NL Heart questionnaire. To determine the responsiveness of the TSK-NL Heart, the Cardiac Anxiety Questionnaire (CAQ) and the general anxiety scale of the Hospital Anxiety and Depression Scale (HADS-A) were used as external measures. All questionnaires were completed pre- and post-CR. Internal responsiveness was estimated by calculating the effect size (ES) and standardized response mean (SRM). External responsiveness was determined by calculating the correlation between change scores on the TSK-NL heart and on the external measures. Furthermore, univariate logistic regression analysis was performed with the dichotomized TSK-NL Heart score post-CR as dependent variable (high vs low scores) and baseline characteristics (age, sex, reason for referral and pre-CR scores on the TSK-NL Heart, CAQ and HADS) as predictor variables.

Results: Prevalence of a high levels of kinesiophobia improved from 40.4% pre-CR to 25.7% at completion of CR ($p = 0.05$). Both the ES and the SRM of the TSK change score were moderate for patients with an improved CAQ and HADS-A score (respectively ES = 0.52; SRM = 0.57 and ES = 0.54; SRM = 0.60) and small for patients with a stable score (ES = 0; SRM = 0 and ES = 0.26; SRM = 0.36). There was a moderate correlation between the TSK-NL Heart change score and the CAQ ($R_s = 0.30$, $p = 0.023$) and a small correlation between the TSK-NL Heart change score and the HADS-A ($R_s = 0.21$, $p = 0.107$). The odds of having high kinesiophobia levels post-CR were increased by having a high level of kinesiophobia pre-CR (OR = 9.83, 95%CI: 3.52-27.46), a higher baseline score on the CAQ (OR = 1.12, 95%CI: 1.06-1.19), and a higher baseline score on the HADS-A (OR = 1.26, 95% CI: 1.11-1.42).

Conclusion: The TSK-NL Heart has moderate responsiveness. In addition, this study shows that there are reductions in kinesiophobia during the course of CR. Nevertheless, a large number of patients (26%) still had high levels of kinesiophobia at completion of CR. Interventions targeting kinesiophobia should focus on patients that enter CR with high levels of kinesiophobia, cardiac anxiety and generic anxiety.