

co-ordinated with the Director of the Institute / Research Unit

**Institute/ Research Unit / Clinical Co-operation Group / Junior Research Group:**

**Institute of Health Economics and Health Care Management (IGM)**

**PSP-Element:**

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**Title of the highlight:**

Health-related quality of life in subjects with and without Type 2 diabetes: pooled analysis of five population-based surveys in Germany

**Keywords:**

Type 2 diabetes mellitus, health-related quality of life, population-based study, pooled analysis

**Central statement of the highlight in one sentence:**

Type 2 diabetes has negative consequences for health-related quality of life, underlining the burden of disease and the importance of diabetes prevention.

**Text of the highlight:**

The high and increasing prevalence of Type 2 diabetes mellitus and the high incidence of associated complications and co-morbid conditions make the disease a prime case to assess health-related quality of life (HRQL), which is a central domain of patient-based outcomes and essential for health decision-making and planning processes.

This study is part of the DIAB-CORE (Diabetes Collaborative Research of Epidemiologic Studies) research consortium of the Competence Network Diabetes.

Data from five population-based cohort studies (four regional and one national) with a total of 9579 subjects were included in the analysis. HRQL was assessed by the German version of the 12-item Short-Form Health Survey (SF-12 v1), a generic index instrument derived from the SF-36. The SF-12 yields summary

scores for physical and mental health, the physical component summary (PCS-12) and the mental component summary (MCS-12).

The findings show that subjects with Type 2 diabetes have significantly lower PCS-12 scores in each study as well as in the pooled analysis. The size of the difference (-4.1 points on a 0-100 scale) equals the decline in PCS-12 scores between subjects aged 45 and 65 years, which can be regarded as an indicator of how such differences are perceived. For mental health (MCS-12), only women with Type 2 diabetes report lower HRQL. These findings call for further efforts to identify men and women at high risk of developing Type 2 diabetes and strengthen the need for gender-sensitive intervention programmes.

**Publication:**

Schunk M, Reitmeir P, Schipf S, Völzke H, Meisinger C, Thorand B, Kluttig A, Greiser K.-H, Berger K, Müller G, Ellert U, Neuhauser H, Tamayo T, Rathmann W, Holle R: Health-related quality of life in subjects with and without Type 2 diabetes: pooled analysis of five population-based surveys in Germany. *Diabet Med*, 2012, 29, 646-653.

**Taking account of the HMGU mission:**

Type 2 diabetes is a main research focus of HMGU as a member of the German Center for Diabetes Research (DZD e.V.). The contribution to health care research in diabetes underlines the importance to analyse patient-oriented outcomes in understanding the consequences of disease and improving public health.

**The internal HMGU co-operation partners with whom the highlight was compiled, if appropriate:**

Institute of Epidemiology II: Dr. Christa Meisinger; Dr. Barbara Thorand

# Health-related quality of life in subjects with and without type 2 diabetes: pooled analysis of five population-based surveys in Germany (DIAB-CORE)

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## Background

- The assessment of health-related quality of life (HRQL) in Type 2 diabetes mellitus indicates the health burden of the disease with its high and increasing prevalence in the population.

## Aim

- To compare population values of HRQL measured with the SF-12 in subjects with and without type 2 diabetes.

## Data

- Individual data from four population-based survey studies from different regions in Germany and a nationwide survey (N=9579).
- Primary data from the studies were added to a joint database and pooled. All variables were recoded in the pooled data following DIAB-CORE standard procedures, established for the homogenization of basic variables.

## Methods

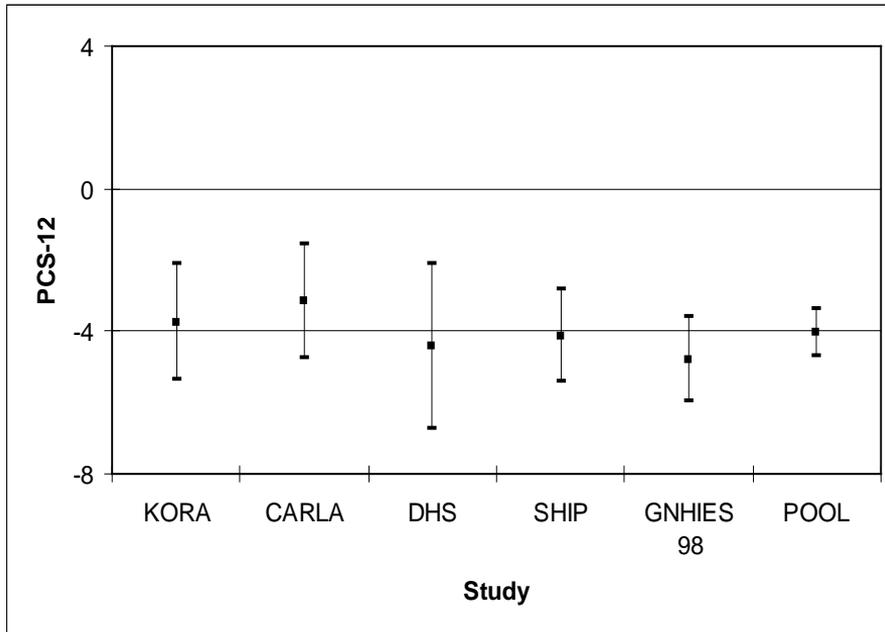
- Calculation of two component scores derived from the SF-12, the physical component summary score (PCS-12) and the mental component summary score (MCS-12)
- Regression analysis was carried out to examine the association between type 2 diabetes and PCS-12 and MCS-12 as well as interaction effects with age and sex.

# Health-related quality of life in subjects with and without type 2 diabetes: pooled analysis of five population-based surveys in Germany (DIAB-CORE)

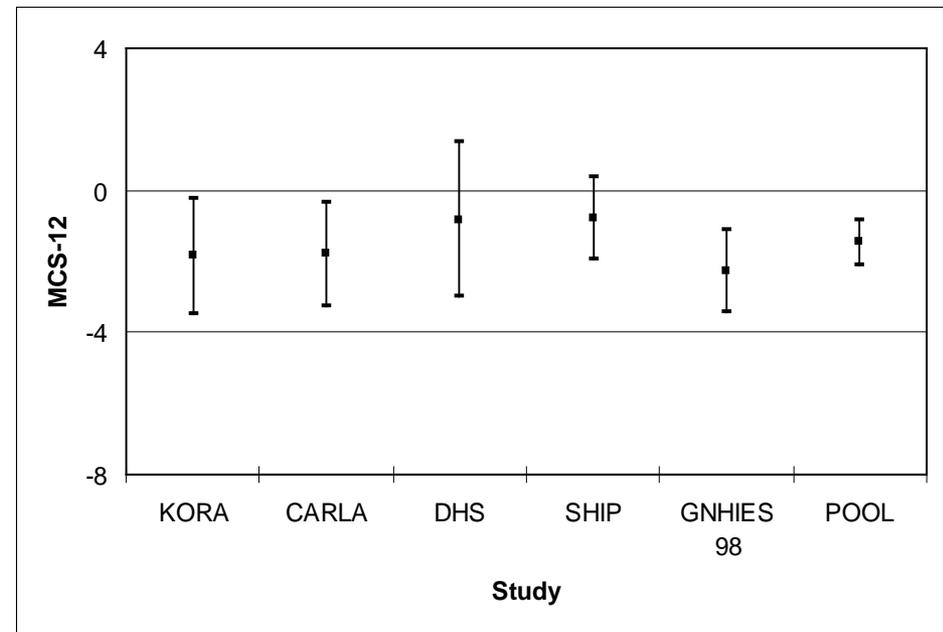
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## Age- and sex-adjusted mean differences

Physical component summary score (PCS-12)



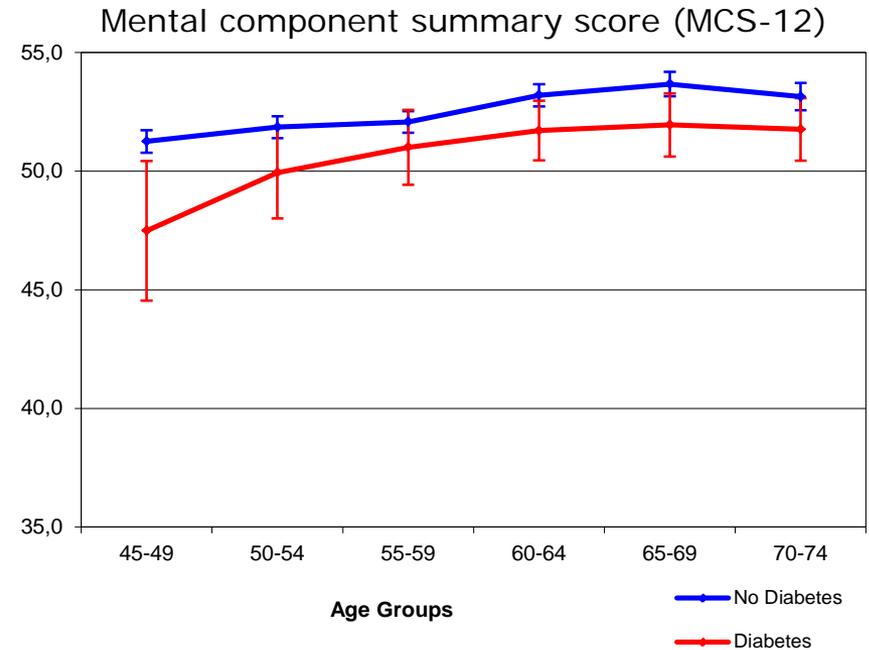
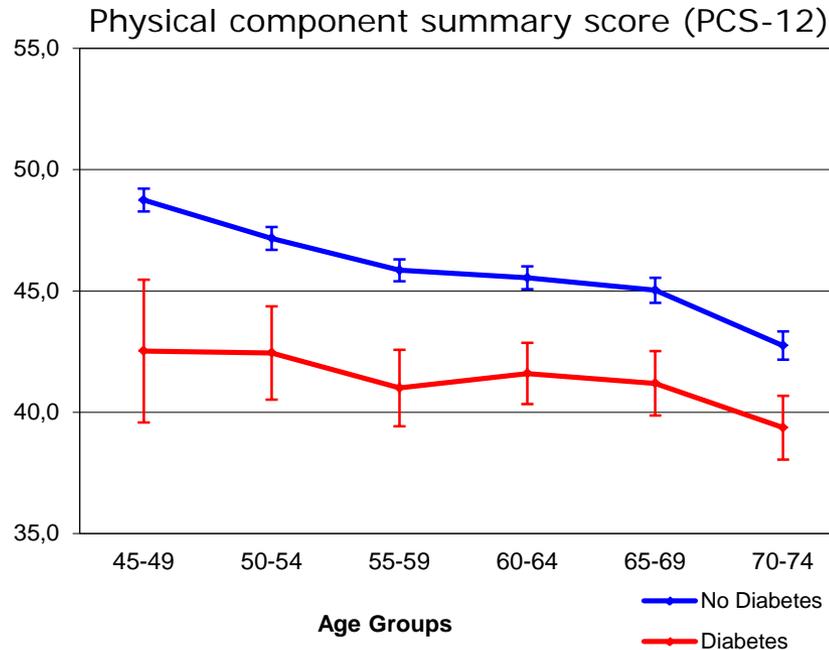
Mental component summary score (MCS-12)



KORA (S4): Cooperative Research in the Region of Augsburg; CARLA: Cardiovascular Disease, Living and Ageing in Halle; DHS: Dortmund Health Study; SHIP (S0): Study of Health in Pomerania; GNHIES 98: German National Health Interview and Examination Survey 1998.

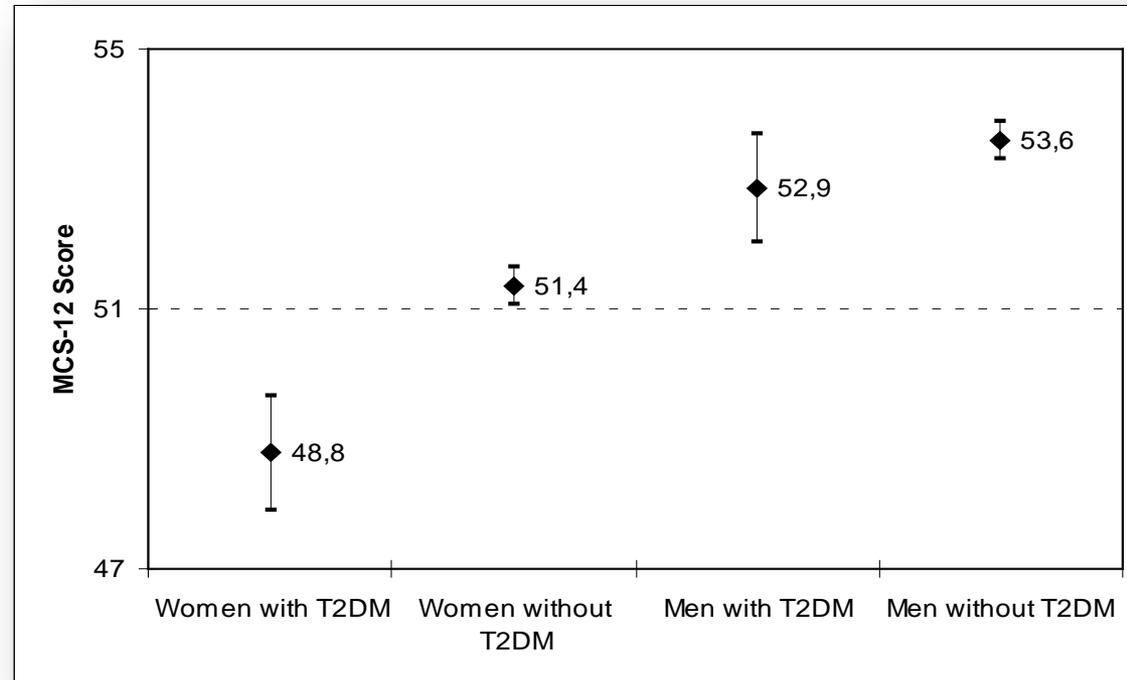
- Effect of type 2 diabetes on HRQL is similar across all five studies

## Multivariate regression analysis adjusting for sex and study effects



- Subjects with type 2 diabetes have significantly lower PCS-12 scores (-4.1 points)
- Average diabetes effect in PCS-12 scores equals 20-year age effect in no diabetes group
- The difference on the MCS-12 score (-2.5 points) for subjects with type 2 diabetes is smaller and only significant in women

## Multivariate regression analysis adjusting for age and study effects



- Significant sex effects in MCS-12 scores
- Men with diabetes report significantly higher MCS-12 scores (+4.1 points) compared to women with diabetes