Viden om involvering af familier og diabetes

Professor Frans Pouwer, medical psychologist

Department of Psychology, University of Southern Denmark,

Odense, Denmark
Outline:

Short introduction

What is the psychological impact of having diabetes?
  Impact on persons with diabetes
  Impact on family members

Should family members be involved?

A case for further improvements of diabetes care in DK

Future research developments
Start with some history...

Born in Middelburg, Zeeland (1968)

The Netherlands

Master in Clinical Psychology (1993)

Utrecht University

Two specialisations:

Health psychology

Depression and victimology
Job as medical psychologist: VU University Amsterdam, Dept Medical Psychology

Research in psychosocial oncology (1994-1996)
Training of medical students (communication skills, 1994-1996)
Bergen, The Netherlands

1995
What did I learn that day in 1995?

1. Diabetes patients can have a severe hypoglycemic event (very low bloodglucose)

2. A severe hypo is very stressful

3. Stressful, not only for the patient, also for family/friends

4. Family members play a crucial role in the management of diabetes

5. I was trained as a clinical psychologist, I was working at a department of medical psychology: yet I lacked basic knowledge about diabetes....
1995: invited by Dr. Frank Snoek to conduct semi-structured interviews in people with type 1 diabetes, focused on perceived differences between pork vs human insulin and hypoglycaemia-risk, supported by the Dutch Diabetes Association.
1996: My first “diabetes-publication”

Validity of a questionnaire assessing “fear of hypoglycemia”.

**Notities**

De Angst voor Hypoglycemie Vragenlijst (AHV)

Interne consistentie en validiteit

Frank J. Snoek, François Pouwer, Eline D. Mollema en Rob J. Heine*

**Summary**

The Dutch version of the Hypoglycemia Fear Survey: Internal consistency and validity

Aim of the present study was to investigate the factor structure, internal consistency and convergent validity of the Dutch version of the Hypoglycemia Fear Survey (HFS), a self-report questionnaire developed and validated by Cox, Irvine and Gonder-Frederick (1987) for use in adult, insulin requiring diabetic patients. The HFS was developed to detect the level of fear of hypoglycemic reactions, and consists of two subscales, the Worry scale and the Behavior scale. The HFS was translated into Dutch by the authors and administered to two samples of insulin requiring diabetic patients (n=419). Factor analysis confirmed the two-factor structure of the Dutch HFS; internal consistency of the Worry scale proved to be high, but moderate for the Behavior scale. Convergent validity of the Worry scale of the Dutch HFS was demonstrated by a satisfactory correlation with the STAI (Trait Anxiety). A revised version of the HFS Behavior scale is currently being tested for its psychometric properties. The HFS Worry scale has been shown to be a useful tool in detecting extreme low and high fear of hypoglycemia in diabetic patients, both for research and clinical purposes.

**Inleiding**

Hypoglycemic, een tekort aan glucose in het bloed, vormt de meest voorkomende 'bijwerking' van insuline-therapie bij diabetespatiënten (Cryer et al., 1989; Meijer & Hoekstra, 1995). De symptomen van een hypoglycemie kunnen, afhankelijk van de hoogte van de bloedglucose-spiegel, variëren van mild (zoals trillen, honger) tot ernstig (verwardheid, coma). Een hypoglycemie kan ontstaan als gevolg van een combinatie van een teveel aan insuline, een tekort aan koolhydraten en overmatige fysieke inspanning. Met name bij intensieve insuline-therapie, waarbij de patiënt zichzelf drie- tot viermaal daags insuline injecteert, neemt de kans

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</tbody>
</table>

Do health care providers recognise depression?

Underdetection and undertreatment in ≈ 25-60% of the cases with depression, by both nurses and doctors.


Pouwer F. Depression: a common and burdensome complication of diabetes that warrants the continued attention of clinicians, researchers and healthcare policy makers. Diabetologia. 2017;60(1):30-34.
Working group of St Vincent Declaration 1994:

“the psychological well-being of people with diabetes needs to be monitored using a standardised questionnaire, ..., alongside the monitoring of diabetes control.”

RANDOMISED CONTROLLED TRIAL

CONTROL GROUP:
standard diabetes care:

INTERVENTION:
standard diabetes care + monitoring:

Monitoring: computerised assessment and subsequent discussion of psychological well-being, by the diabetes nurse specialist, using the WBQ-12 (interval: 6 months)

Percentage of patients referred to medical psychologist (including intakes only)

↑ emotional well-being

↑ satisfaction with care from diabetes nurses

no effect on HbA1c
2001-2008: post doc at VU Medical Center

2008-2016: programme leader Diabetes, Tilburg University

2010-2014: director of the master medical psychology

2011-2016: full professor of medical psychology, Tilburg University

2017: full professor of medical psychology
University of Southern Denmark
Current status of the scientific literature:

Focus on several key psychological problems in diabetes care

How common are these problems? What are the consequences? Impact on family members? An important role for family members?

1. Depression
2. Diabetes-specific distress
3. Disturbed eating
4. Poor sleep quality
5. Suboptimal diabetes self-care
Diabetes (type 1 or 2) doubles the odds of depression.

Depression: a common complication of dm:


\[ p = 0.5 \]

\[ 1.9 (1.4-2.5)^* \quad \text{OR (95\% CI)} \quad 2.1 (1.9-2.4)^* \]

- **Depression Prevalence (%)**
  - **Diagnostic Interview**
    - Controls: 5.0
    - DM: 9.0

- **Self-report Scale**
  - Controls: 14.4
  - DM: 26.1

**Assessment Method**
  - (n = 7)
  - (n = 11)
N=14 studies

Pooled prevalence of elevated depression: 30%

Pooled prevalence of elevated anxiety: 32%

Associated with less optimal glycemic control
Depression in diabetes

This means...

That 2-3 of every 10 families with a family member who has diabetes have to cope with depression:

– 1 major depression...
– 1-2 subthreshold depression...
Global perspective:

Worldwide, approximately 41,500,000 people with diabetes suffer from co-morbid Major Depressive Disorder...

IDF diabetes atlas estimations 2015
Rates of pervasive depression (CES-D > 15) in subjects with type 2 dm only, type 2 dm with co-morbid disease(s), compared with healthy subjects.

<table>
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<tr>
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<th>n</th>
<th>Depression (%)</th>
<th>OR (95% CI)</th>
<th>adjusted OR (95% CI)</th>
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<td>1.0 (–)</td>
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<td>Type 2 dm only</td>
<td>51</td>
<td>7.8%</td>
<td>0.88 (0.3–2.5)</td>
<td>0.94 (0.3–2.7)</td>
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<td>Type 2 dm &amp; Co-Morb</td>
<td>162</td>
<td>19.8%***</td>
<td>2.53 (1.6–3.9)</td>
<td>2.0 (1.1–3.5)¶</td>
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*** P < 0.001; ¶ adjusted for age, sex, marital status, education, BMI and smoking.
Prevalence of Depression in Individuals With Impaired Glucose Metabolism or Undiagnosed Diabetes

A systematic review and meta-analysis of the European Depression in Diabetes (EDID) Research Consortium

OBJECTIVE—Meta-analyses have shown that the risk for depression is elevated in type 2 diabetes. Whether this risk in individuals with impaired glucose metabolism (IGM) or undiagnosed diabetes (UDD) is elevated relative to normal glucose metabolism (NGM) or decreased relative to previously diagnosed type 2 diabetes (PDD) has not been the subject of a systematic review/meta-analysis. This study examined the prevalence of depression in IGM and UDD subjects relative to each other and to NGM and PDD subjects by reviewing the literature and conducting a meta-analysis of studies on this topic.

RESEARCH DESIGN AND METHODS—EMBASE and MEDLINE databases were searched for articles published up to May 2010. All studies that compared the prevalence of depression in subjects with IGM and UDD were included. Odds ratios (ORs) were calculated using fixed and random-effects models.

RESULTS—The meta-analysis showed that the risk for depression was not increased in IGM versus NGM subjects (OR 0.96, 95% CI 0.85–1.08). Risk for depression did not differ between individuals with UDD and individuals with either NGM (OR 0.94, 95% CI 0.71–1.25) or IGM (OR 1.16, 95% CI 0.88–1.54). Finally, individuals with IGM or UDD both had a significantly lower risk of depression than individuals with PDD (OR 0.59, 95% CI 0.48–0.73, and OR 0.57, respectively).

to be at increased risk for the development of cardiovascular complications of diabetes and to have increased mortality rates and higher health care costs (4–6).

The reasons for the high prevalence of depression in type 2 diabetes remain unclear, although it is likely that the burden resulting from having a chronic disease and/or its associated complications plays an important role (7,8). It is also possible that increased levels of blood glucose are implicated, although the exact nature of the relationship between hyperglycemia and depression remains unclear (9).

Hyperglycemia (and insulin resistance) may contribute to depression by two mechanisms: 1) through its impact on symptoms, such as fatigue and difficulty concentrating (10), complications, and fear of complications (11), and 2) through physiological pathways, including inflammatory processes, and reductions in neurotrophic function (12–14),...
### Undiagnosed DM vs. Normal Glucose Metabolism

<table>
<thead>
<tr>
<th>Study</th>
<th>OR (95% CI)</th>
<th>Events, UDD</th>
<th>Events, Comparator</th>
<th>% Weight (I-V)</th>
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<td>UDD v NGM</td>
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<td>Palinkas et al., 1991 (25)</td>
<td>0.84 (0.40, 1.79)</td>
<td>8/209</td>
<td>58/1284</td>
<td>5.77</td>
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<td>Rajala et al., 1997 (13)</td>
<td>0.99 (0.29, 3.40)</td>
<td>3/28</td>
<td>56/480</td>
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<td>Hiltunen et al., 2004 (14)</td>
<td>1.05 (0.39, 2.80)</td>
<td>6/33</td>
<td>26/149</td>
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<td>Golden et al., 2007 (17)</td>
<td>0.83 (0.60, 1.15)</td>
<td>46/292</td>
<td>721/3911</td>
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<td>Knol et al., 2007 (16)</td>
<td>1.06 (0.55, 2.07)</td>
<td>11/55</td>
<td>667/3499</td>
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<td>Icks et al., 2008 (26)</td>
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<td>557/3995</td>
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<td>Rhee et al., 2008 (19)</td>
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<td>Aujla et al., 2009 (21)</td>
<td>0.81 (0.53, 1.22)</td>
<td>29/136</td>
<td>1035/4116</td>
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<td>Gale et al., 2010</td>
<td>1.42 (0.84, 2.41)</td>
<td>16/182</td>
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<td>Holt et al., 2009 (20)</td>
<td>2.01 (0.80, 5.09)</td>
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<td>19/1568</td>
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<tr>
<td>I-V Subtotal (I-squared = 49.0%, p = 0.039)</td>
<td>0.88 (0.74, 1.06)</td>
<td>146/1483</td>
<td>3411/23217</td>
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<tr>
<td>D+L Subtotal</td>
<td>0.94 (0.71, 1.25)</td>
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### Undiagnosed DM vs. Impaired Glucose Metabolism

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<tr>
<th>Study</th>
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<td>Rajala et al., 1997 (13)</td>
<td>0.91 (0.25, 3.27)</td>
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<td>Hiltunen et al., 2004 (14)</td>
<td>0.89 (0.69, 1.16)</td>
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<td>Golden et al., 2007 (17)</td>
<td>1.21 (0.61, 2.41)</td>
<td>11/55</td>
<td>115/671</td>
<td>9.61</td>
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<td>Knol et al., 2007 (16)</td>
<td>1.67 (0.65, 4.28)</td>
<td>6/53</td>
<td>25/352</td>
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<td>Aujla et al., 2009 (21)</td>
<td>0.77 (0.49, 1.21)</td>
<td>29/136</td>
<td>167/643</td>
<td>22.98</td>
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<td>Gale et al., 2010 (22)</td>
<td>1.80 (0.94, 3.46)</td>
<td>16/182</td>
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<td>Holt et al., 2008 (20)</td>
<td>3.05 (1.05, 8.87)</td>
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<tr>
<td>I-V Subtotal (I-squared = 27.1%, p = 0.212)</td>
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<td>D+L Subtotal</td>
<td>1.16 (0.88, 1.54)</td>
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### Undiagnosed DM vs. Previously Diagnosed DM

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<td>UDD v PDD</td>
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<tr>
<td>Palinkas et al., 1991 (25)</td>
<td>0.33 (0.13, 0.87)</td>
<td>8/209</td>
<td>10/93</td>
<td>6.69</td>
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<td>Rajala et al., 1997 (13)</td>
<td>0.39 (0.09, 1.62)</td>
<td>3/26</td>
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<td>Hiltunen et al., 2004 (14)</td>
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<td>D+L Subtotal</td>
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## Impaired Glucose Metabolism vs. Normal Glucose Metabolism

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<td>D+L Subtotal</td>
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<td>0.96 (0.85, 1.08)</td>
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## Impaired Glucose Metabolism vs Previously Diagnosed Diabetes

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<td></td>
<td>Knol et al., 2007 (16)</td>
<td>0.50 (0.31, 0.79)</td>
<td>24/164</td>
<td>22/126</td>
<td>11.63</td>
</tr>
<tr>
<td></td>
<td>Adriaanse et al., 2008 (18)</td>
<td>0.81 (0.43, 1.52)</td>
<td>8/996</td>
<td>4/182</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td>Gale et al., 2009 (22)</td>
<td>0.25 (0.11, 1.21)</td>
<td>8/996</td>
<td>38/181</td>
<td>12.16</td>
</tr>
<tr>
<td></td>
<td>Holt et al., 2009 (20)</td>
<td>0.36 (0.11, 1.21)</td>
<td>52/425</td>
<td>38/181</td>
<td>12.16</td>
</tr>
<tr>
<td></td>
<td>Bouwman et al., 2010 (23)</td>
<td>0.52 (0.33, 0.83)</td>
<td>581/5241</td>
<td>284/1676</td>
<td>100.00</td>
</tr>
<tr>
<td></td>
<td>I-V Subtotal (I-squared = 18.7%, p = 0.276)</td>
<td>0.61 (0.52, 0.71)</td>
<td>581/5241</td>
<td>284/1676</td>
<td>100.00</td>
</tr>
<tr>
<td></td>
<td>D+L Subtotal</td>
<td></td>
<td>0.59 (0.48, 0.73)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Graphical Representation

- **Impaired Glucose Metabolism vs. Normal Glucose Metabolism**: Less depression IGM, More depression IGM
- **Impaired Glucose Metabolism vs Previously Diagnosed Diabetes**: Less depression IGM, More depression IGM
Diabetes and incident depression

Type 2 diabetes: 24% higher risk for developing depression

Incident and recurrent/persistent depression in people with DM2 in primary care

N=2416 people with diabetes type 2 (PoZoB diabetescohort)


High depression score on at least 1 assessment: 26%

Incident depression: 14% ("new" cases of depression in 2007/2008)

66% of those with a high depression score at baseline had a high depression score in 2007 en/of 2008 (persistent/ recurrent depression).

The best predictor of depression in the future is: a history of depression

Depression in diabetes

Type 2 diabetes \(\rightarrow\) Depression

Complications

Chronic stress:
Burden of having a chronic disease & diabetes complications

Debate: A role for hyperglycemia? Microvascular dysfunction?

Pouwer F. Diabetologia 2017;60(1):30-34
Kaplan-Meier curves for all-cause mortality for each diabetes and depression category.

Meta-analysis: depression in diabetes is a risk factor for all cause and CVD mortality:

### Depression as risk factor for all-cause mortality

<table>
<thead>
<tr>
<th>Study name</th>
<th>Hazard ratio</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sullivan 2012</td>
<td>1.60</td>
<td>1.11</td>
<td>2.773</td>
<td>2.437</td>
<td>0.025</td>
</tr>
<tr>
<td>Bot 2012</td>
<td>2.100</td>
<td>1.377</td>
<td>3.203</td>
<td>3.445</td>
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<tr>
<td>Winkley 2012</td>
<td>2.090</td>
<td>1.342</td>
<td>3.255</td>
<td>3.261</td>
<td>0.001</td>
</tr>
<tr>
<td>Ahola 2012</td>
<td>1.530</td>
<td>1.100</td>
<td>2.129</td>
<td>2.524</td>
<td>0.012</td>
</tr>
<tr>
<td>Pan 2011</td>
<td>1.530</td>
<td>1.288</td>
<td>1.817</td>
<td>4.845</td>
<td>0.000</td>
</tr>
<tr>
<td>Pieper 2011</td>
<td>1.530</td>
<td>0.880</td>
<td>2.660</td>
<td>1.507</td>
<td>0.132</td>
</tr>
<tr>
<td>Scherrer 2011</td>
<td>1.040</td>
<td>0.959</td>
<td>1.128</td>
<td>0.943</td>
<td>0.346</td>
</tr>
<tr>
<td>Iversen 2009</td>
<td>1.370</td>
<td>1.096</td>
<td>1.713</td>
<td>2.763</td>
<td>0.006</td>
</tr>
<tr>
<td>Lin 2009</td>
<td>1.460</td>
<td>1.224</td>
<td>1.741</td>
<td>4.210</td>
<td>0.000</td>
</tr>
<tr>
<td>Katon 2008</td>
<td>1.360</td>
<td>1.162</td>
<td>1.592</td>
<td>3.828</td>
<td>0.000</td>
</tr>
<tr>
<td>Richardson 2008</td>
<td>1.600</td>
<td>1.362</td>
<td>1.880</td>
<td>5.716</td>
<td>0.000</td>
</tr>
<tr>
<td>Bruce 2005</td>
<td>1.210</td>
<td>0.947</td>
<td>1.546</td>
<td>1.525</td>
<td>0.127</td>
</tr>
<tr>
<td>Egede 2005</td>
<td>1.330</td>
<td>1.018</td>
<td>1.737</td>
<td>2.092</td>
<td>0.036</td>
</tr>
<tr>
<td>Kuo 2004</td>
<td>0.970</td>
<td>0.753</td>
<td>1.249</td>
<td>-0.236</td>
<td>0.813</td>
</tr>
<tr>
<td>Black 2003</td>
<td>2.080</td>
<td>1.388</td>
<td>3.117</td>
<td>3.550</td>
<td>0.000</td>
</tr>
<tr>
<td>Rosenthal 1998</td>
<td>4.503</td>
<td>1.728</td>
<td>11.734</td>
<td>3.080</td>
<td>0.002</td>
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<tr>
<td>Pooled</td>
<td>1.461</td>
<td>1.286</td>
<td>1.661</td>
<td>5.811</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**All-cause mortality (n=16):**  
HR=1.46 (95% CI 1.29-1.66)

**Cardiovascular mortality (n=5):**  
HR=1.39 (95% CI 1.11-1.73)

Meta-analysis: depression in diabetes is associated with less optimal self-care behaviors

Meta-analysis of 47 studies (n=17,314)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>z (P)</th>
<th>Weighted r</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall analysis</td>
<td>47</td>
<td>9.81 ( &lt;0.001)</td>
<td>0.21</td>
<td>0.17–0.25</td>
</tr>
<tr>
<td>Appointment keeping</td>
<td>4</td>
<td>21.58 ( &lt;0.001)</td>
<td>0.31</td>
<td>0.29–0.34</td>
</tr>
<tr>
<td>Composite measures</td>
<td>18</td>
<td>9.66 ( &lt;0.001)</td>
<td>0.29</td>
<td>0.23–0.34</td>
</tr>
<tr>
<td>Diet</td>
<td>18</td>
<td>7.60 ( &lt;0.001)</td>
<td>0.18</td>
<td>0.13–0.22</td>
</tr>
<tr>
<td>Medication</td>
<td>18</td>
<td>5.15 ( &lt;0.001)</td>
<td>0.14</td>
<td>0.09–0.20</td>
</tr>
<tr>
<td>Exercise</td>
<td>13</td>
<td>7.89 ( &lt;0.001)</td>
<td>0.14</td>
<td>0.10–0.17</td>
</tr>
<tr>
<td>Glucose monitoring</td>
<td>15</td>
<td>3.50 ( &lt;0.001)</td>
<td>0.10</td>
<td>0.04–0.16</td>
</tr>
<tr>
<td>Foot care</td>
<td>2</td>
<td>0.88 (0.380)</td>
<td>0.07</td>
<td>-0.08 to 0.21</td>
</tr>
</tbody>
</table>

Gonzalez, J et al. Diabetes Care, 2008, 2398 - 2403
Depression in diabetes is associated with poor glycemic control

Depression and Poor Glycemic Control
A meta-analytic review of the literature

PATRICK J. LUSTMAN, PHD
RYAN J. ANDERSON, BA
KENNETH E. FREEDLAND, PHD
MARY DE GROOT, PHD
ROBERT M. CARNEY, PHD
RAY E. CLOUSE, MD

OBJECTIVE — Depression is common among patients with diabetes, but its relationship to glycemic control has not been systematically reviewed. Our objective was to determine whether depression is associated with poor glycemic control.

RESEARCH DESIGN AND METHODS — Medline and PsycINFO databases and published reference lists were used to identify studies that measured the association of depression with glycemic control. Meta-analytic procedures were used to convert the findings to a common metric, calculate effect sizes (ES), and statistically analyze the collective data.

RESULTS — A total of 24 studies satisfied the inclusion and exclusion criteria for the meta-analysis. Depression was significantly associated with hyperglycemia (Z = 5.4, P < 0.0001). The standardized ES was in the small-to-moderate range (0.17) and was consistent, as the 95% CI was narrow (0.13–0.21). The ES was similar in studies of either type 1 or type 2 diabetes (ES 0.19 vs. 0.16) and larger when standardized interviews and diagnostic criteria rather than self-report questionnaires were used to assess depression (ES 0.28 vs. 0.15).

CONCLUSIONS — Depression is associated with hyperglycemia in patients with type 1 or type 2 diabetes. Additional studies are needed to establish the directional nature of this relationship and to determine the effects of depression treatment on glycemic control and the long-term course of diabetes.

Diabetes Care 23:934–942, 2000

analysis to assess the reliability and strength of any association.

RESEARCH DESIGN AND METHODS — Medline and PsycINFO were used to locate studies published in the last 25 years (1975–1999) that reported the association of depression with glycemic control in adult diabetic subjects. The reference lists of these articles were examined to identify additional studies, and this led to the consideration of several unpublished papers and manuscripts.

Inclusion and exclusion criteria
Studies were limited to adult participants (≥18 years of age), to those that assessed glycemic control using a measure of glycohemoglobin (denoted as GHB within this article) (17,18), and to those that measured depression and GHB coincident to the study evaluation. Studies with <25 patients, those neither published nor available in English, and those that ascertained only a history of depression were excluded. Subjects in the included studies were patients diagnosed with type 1 or type 2 diabetes; studies of subjects with other diabetes diagnoses were excluded.
Depression in diabetes: a burdensome combination:

↓ lower quality of life …

↓ less optimal self-care …

↑ higher HbA$_1c$ …

↑ costs (absence from work/lower productivity)

↑ health care costs …

↑ risk of developing complications

Family-Based Interpersonal Psychotherapy (FB-IPT) for Depressed Preadolescents: Examining Efficacy and Potential Treatment Mechanisms

Dr Laura J. Dietz, PhD, University of Pittsburgh School of Medicine, Pittsburgh
Dr Rebecca J. Weinberg, PsyD, University of Pittsburgh School of Medicine, Pittsburgh
Dr David A. Brent, MD, and University of Pittsburgh School of Medicine, Pittsburgh
Dr Laura Mufson, PhD, Columbia University College of Physicians and Surgeons/New York State Psychiatric Institute (NYSPI), New York

Abstract

Objective—To conduct a randomized controlled trial to evaluate the preliminary efficacy of family-based interpersonal psychotherapy (FB-IPT) for treating depression in preadolescents (ages 7–12) as compared to child-centered therapy (CCT), a supportive and nondirective treatment that closely approximates the standard of care for pediatric depression in community mental health.

Method—Preadolescents with depression (N=42) were randomly assigned FB-IPT or CCT. Pre- and posttreatment assessments included clinician-administered measures of depression, parent- and child-reported depression and anxiety symptoms, and parent-child conflict and interpersonal impairment with peers.

Results—Preadolescents receiving FB-IPT had higher rates of remission (66.0% vs. 31%), a greater decrease in depressive symptoms from pre- to posttreatment, and lower depressive symptoms at posttreatment ($R^2=0.35$, $A R^2=0.22$, $B=-8.15$, $SE=2.61$, $t(37)=-3.13$, $p=0.002$, $F^2=0.28$) than did preadolescents with depression receiving CCT. Furthermore, preadolescents in
Psychological interventions for parents of children and adolescents with chronic illness

Christopher Eccleston¹, Emma Fisher¹, Emilly Law², Jess Bartlett¹, and Tonya M Palermo²
¹Centre for Pain Research, University of Bath, Bath, UK
²Anesthesiology and Pain Medicine, University of Washington, Seattle, Washington, USA

Abstract

Background—Psychological therapies have been developed for parents of children and adolescents with a chronic illness. Such therapies include interventions directed at the parent only or at parent and child/adolescent, and are designed to improve parent, child, and family outcomes. This is an updated version of the original Cochrane review published in Issue 8, 2012, (Psychological interventions for parents of children and adolescents with chronic illness).

Objectives—To evaluate the efficacy of psychological therapies that include parents of children and adolescents with chronic illnesses including painful conditions, cancer, diabetes mellitus,
Included studies were RCTs of psychological interventions that delivered treatment to parents of children and adolescents with a chronic illness compared to an active control, waiting list, or treatment as usual control group.

13 trials focused on diabetes


Only 2 family interventions: Wysocki 1999 and 2006

“For children with diabetes and painful conditions, psychological therapies were beneficial at reducing medical symptoms (e.g., improving glycemic control, reducing pain intensity) for these conditions post-treatment, and these effects were maintained at follow-up for children with diabetes”
Another common psychological issue in people with diabetes and their families: Diabetes-distress
Self-report measures:

- Problem Areas in Diabetes (PAID-scale, Polonsky et al, 1995)
- Diabetes Distress Scale (DDS, Polonsky et al, 2005)
- Type I Diabetes Distress Scale (T1-DDS, Fisher et al, 2015)

Broad spectrum of diabetes distress is captured:

- Distress associated with treatment regimen
- Distress related to food/eating
- Worries about future/complications
- Fear of hypoglycemia
- Uncomfortable social interactions around diabetes
- Uncomfortable interactions with healthcare professionals

Living with type 1 diabetes is challenging for Zambian adolescents: qualitative data on stress, coping with stress and quality of care and life

Given Hapunda\textsuperscript{1,2}, Amina Abubakar\textsuperscript{2,4,5}, Fons van de Vijver\textsuperscript{2,6,7} and Frans Pouwer\textsuperscript{3}

Abstract

Background: Psychosocial problems are common in patients with diabetes. However, data on psychosocial issues affecting patients with diabetes in Zambia are scarce. The present study explored sources of stress, stress coping strategies, stigma and perceived quality of life and care as experienced by adolescents living with Type 1 Diabetes in Zambia.

Methods: Semi-structured interviews were carried out. Three groups of participants involving adolescents with Type 1 Diabetes (n = 10), caregivers (n = 8) and health practitioners (n = 4) were interviewed. Transcripts were analyzed using a thematic approach.

Results: Stress was commonly reported by adolescents mainly stemming from social, psychological and physical sources. To deal with stress, adolescents often employed different coping strategies such as adapting, accepting and avoiding among others. Both internal factors (those relating to the patients themselves) and external factors (those related to the context of the patients’ influence) the patients’ quality of health care. In addition, low quality of life was an issue among adolescents and their families. Poor diet, low socioeconomic status and lack of medicine were factors affecting quality of health care.

Conclusion: Stress was an issue affecting adolescents; the coping strategies employed were sometimes maladaptive such as avoiding injecting themselves to escape stress. Several aspects of quality of life were suboptimal in both adolescents and their families, such as stigmatization, short life expectancy, low socioeconomic status and poor social participation. Findings show that there is an urgent need for a strong response from all stakeholders (governments, patients, organizations and companies) to improve diabetes care and living conditions for young people with type 1 diabetes living in Zambia.

Keywords: Diabetes, Adolescents, Stress, Quality of life, Zambia
"In my family, they want me to stop injecting myself insulin. What they say stresses me a lot. They say that injecting myself is damaging my body."
Girl with diabetes, grade 9

"Children with such condition (diabetes) find it difficult to get married and cannot have children. Diabetes comes with many complications; so many men will not want to marry such a girl."
Female guardian 36 years old

"Sometimes they face segregation, they let them play alone or let them do things alone because some of them think that it is communicable and they can get it if they hang out with them."
Pediatrician
DAWN2: High levels of diabetes-specific emotional distress are very common among people with diabetes

- 46%* of people with diabetes had emotional distress due to their diabetes (PAID-5 ≥40)

Proportion of people with diabetes who had significant emotional distress related to diabetes*

---

*N Global score
†Adjusted for clustering, and weighted on age, gender, region, and education to allow generalisation from the sample to larger populations. Weights are based on population proportions for each country, as provided by each country’s survey advisory group, and on publicly available epidemiological data. Country-specific data and the mean of these data (dotted line) are adjusted and differ from the unadjusted global score* and country score (range) CI, confidence interval; WHO-5, World Health Organization Well-Being Index 5

Emotional impact of hypo’s – a quote:

‘I was living by myself and I had a hypoglycaemic crisis. I was no longer able to understand anything; they told me I did not make sense when I talked and that I wasn't able to move, to sleep calmly, and to recognise my children’

*Woman with type 2 diabetes, insulin medicated, aged 70 years, Italy 20 years with diabetes*
The burden of diabetes also impacts on family members’ quality of life

- 35%* of family members reported a ‘moderate’ to ‘very large’ burden from caring for a relative with diabetes

---

*Global score; †Country-specific data and the mean of these data (dotted line) are adjusted and differ from the unadjusted global score* and country score (range)

Many **family members** are concerned about hypoglycaemia

- **61%** of family members reported to be very worried about the risk of hypoglycaemia

*Global score; †Data adjusted for clustering to allow generalisation from the sample to larger populations

Family members want to help, but many do not know how best to help

46% would like to be more involved in helping deal with feelings about diabetes.
39% want to be more involved in caring for person with diabetes.
37% do not know how best to help.

Involvement can strengthen families

‘What moved me was when my family quit eating certain foods because I had to. Finally, my diabetes was slowly but effectively controlled under the care and help of my family. Since then, I have more confidently faced the hardship that this disease has brought’

*Man with type 2 diabetes, insulin medicated, aged 53 years, China 4 years with diabetes*
Involvement of family members in life with type 2 diabetes: Six interconnected problem domains of significance for family health identity and healthcare authenticity

Dan Grabowski¹, Tue Helms Andersen², Annemarie Varming¹, Christine Ommundsen² and Ingrid Willaing¹

Abstract

Objectives: Family involvement plays a key role in diabetes management. Problems and challenges related to type 2-diabetes often affect the whole family, and relatives are at increased risk of developing diabetes themselves. We highlight these issues in our objectives: (1) to uncover specific family problems associated with mutual involvement in life with type 2-diabetes and (2) to analytically look at ways of approaching these problems in healthcare settings.

Methods: Qualitative data were gathered in participatory problem assessment workshops. The data were analysed in three rounds using radical hermeneutics.

Results: Problems were categorized in six domains: knowledge, communication, support, everyday life, roles and worries. The final cross-analysis focusing on the link between family identity and healthcare authenticity provided information on how the six domains can be approached in healthcare settings.

Conclusion: The study generated important knowledge about problems associated with family involvement in life with type 2 diabetes and about how family involvement can be supported in healthcare practice.

Keywords
Family, involvement, type 2 diabetes, health identity, authenticity

Date received: 19 December 2016; accepted: 3 August 2017

Introduction

Family involvement plays a key role in diabetes management, and the importance of family approaches has received increasing recognition.¹,² However, family involvement is a complex matter, often characterized by unclear structural relations and contrasting needs and expectations within the family. Supportive and obstructive behaviours frequently co-occur. For this reason, more family involvement is not diabetes.⁵⁻¹¹ A major obstacle to constructive intra-familial communication about prevention, familial risk and risk reduction behaviours is a lack of perceived disease relevance.¹²,¹³ Godino et al.¹⁴ reported that people’s motivation to engage in risk-reducing health behaviours or to undergo screening is dependent on whether or not they are aware of their susceptibility to a given disease.
“We often see that lots of things remain unsaid. It can be really hard for the one with diabetes to express his wishes about what kind of help and support he really needs. Often they don’t know how to talk about this at all, and then it just gets worse and worse – we have to help them create the right dialogue. (Healthcare professional – workshop 3/participant 1)”
PIFT (Pårørendelnddragelse, Forebyggelse og Tidlig opsporing)

Formål: I familier, hvor mindst ét medlem har type 2 diabetes, er det ofte svært at involvere hele familien i hverdagen med diabetes. PIFT-projektet har i tæt samarbejde med familier og sundhedsprofessionelle udviklet en værktøjskasse med dialogredskaber til at skabe gensidig positiv involvering i familier med type 2 diabetes.
Samarbejdspartnere: Diabetesforeningen og Region SydDanmark
A Systematic Review: Family Support Integrated with Diabetes Self-Management among Uncontrolled Type II Diabetes Mellitus Patients

Rian Adi Pamungkas 1,2, Kanittha Chamroonsawasdii 1,* and Paranee Vatanasomboon 3
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2 Department of Nursing, College of Health, Mega Rezky Makassar, Makassar 90245, Indonesia
3 Department of Health Education and Behavioral Science, Mahidol University, Bangkok 10400, Thailand; paranee.vat@mahidol.ac.th
* Correspondence: kanittha.cha@mahidol.ac.th; Tel.: +66-02-3548-5439 (ext. 1301)

Received: 27 June 2017; Accepted: 6 September 2017; Published: 15 September 2017

Abstract: The rate of type-2 diabetes mellitus (T2D) is dramatically increasing worldwide. Continuing diabetes mellitus (DM) care needs effective self-management education and support for both patients and family members. This study aimed to review and describe the impacts of diabetes mellitus self-management education (DSME) that involve family members on patient outcomes related to patient health behaviors and perceived self-efficacy on self-management such as medication adherence, blood glucose monitoring, diet and exercise changes, health outcomes including psychological well-being and self-efficacy, and physiological markers including body mass index, level of blood pressure, cholesterol level and glycemic control. Three databases, PubMed, CINAHL, and Scopus were reviewed for relevant articles. The search terms were “type 2 diabetes,” “self-management,” “diabetes self-management education (DSME),” “family support,” “social support,” and “uncontrolled glycaemia.” Joanna Briggs Institute (JBI) guidelines were used to determine which studies to include in the review. Details of the family support components of DSME intervention and the impacts of these interventions had on improving the health outcomes patients with uncontrolled glycaemia patients. A total of 22 intervention studies were identified. These studies involved different DSME strategies, different components of family support provided, and different health outcomes to be measured among T2D patients. Overall, family support had a positive impact on healthy diet, increased perceived support, higher self-efficacy, improved psychological well-being and better glycemic control. This systematic review found evidence that DSME with family support
Figure 1. Summary of evidence search and selection.

“A collaborative approach to DSME mixed methods of teaching and family support involvement [15,17,18, 20, 23, 24 ].”

“The combination of didactic with other methods such as participatory learning, goal setting, action planning and problem-solving had a positive impact on health outcomes and improved health behaviors [16,20–24,26 ].”

“A study that assessed the outcomes found a significant improvement in clinical outcomes such as HbA1c, blood pressure, lipid profile and BMI status after implementing the program.

3 studies mentioned that not significant change of HbA1c level was observed in the short intervening period [20,23,26 ].”

Disordered eating behaviors and body dissatisfaction among adolescents with type 1 diabetes

n= 477 adolescents (mean age 16 years; 62% females)

88% of females wanted to be thinner.

Of the males, 76% reported body dissatisfaction; however, only 43% expressed a desire for thinness with the remainder desiring a larger body size.

Disturbed eating in DM1:

Children with a high HbA$_1c$ often have emotional/behavioral problems such as depression, anxiety, eating problems.

Approximately 10% of adolescent girls with DM1 suffers from an eating disorder (binge eating, purging). Twice the rate of the general population.

They often abuse insulin to loose weight quickly (through intentional insulin omisions).

Consequence: high HbA1c, strongly increased risk for the developement of complications.

Systematic review and meta-analysis of the efficacy of interventions for people with Type 1 diabetes mellitus and disordered eating

P. Clery, D. Stahl, K. Ismail, J. Treasure and C. Kan
Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, UK
Accepted 1 September 2017

Abstract

Aim To examine the types of interventions currently available for people with Type 1 diabetes mellitus and their effectiveness.

Background The prevalence of disordered eating in people with Type 1 diabetes mellitus is twice that in their counterparts without diabetes, and is associated with worse biomedical outcomes and greater mortality.

Methods Medline, Embase, PsycINFO, the Cochrane Library, PubMed and OpenGrey databases were searched up to August 2016 to identify studies on interventions in people with Type 1 diabetes-associated disordered eating. For the systematic review, intervention components were identified and their effectiveness was examined. For the meta-analysis, the pooled effect sizes of glycaemic control (HbA1c) between pre- and post-treatment in treatment and comparison groups were calculated using a random effects model.

Results Of 91 abstracts reviewed, six studies met the inclusion criteria, of which three had appropriate data for the meta-analysis (n = 118). The pooled effect size was −0.21 95% CI (−0.58 to 0.16; where negative values represent an improvement in HbA1c levels), indicating no statistically significant improvement in the treatment group compared with comparison group. Inpatient therapy appeared to be the most effective treatment, and this had multiple components including cognitive behavioural therapy, psychoeducation and family therapy.

Conclusion Limited or no improvement in glycaemic control and disordered eating symptoms was observed in people with Type 1 diabetes-associated disordered eating who were receiving currently available interventions. The present review suggests that developing an intensive intervention with a joint focus on both disordered eating and diabetes management is needed for this complex patient group.

Aim: identify studies on interventions in people with DM1 and disordered eating

N=92 abstracts reviewed

N=6 studies included, only 3 suitable for meta-analysis
In conclusion, people with Type 1 diabetes-associated eating disorders have a poorer response of their eating disorder symptoms to conventional eating disorder management, and little improvement in their diabetic control.

It appears that people with Type 1 diabetes-associated eating disorders require a different form and intensity of intervention.

**Two interventions that included family support/involvement successfully reduced eating disorder symptoms (Olmsted et al, 2002, Alloway et al, 2001)**

What about treatment of depression in DM?
Cognitive Behavioral Therapy effective in treating depression in diabetes

Remission of depression after 10 sessions of Cognitive Behavioral Therapy (CBT); CBT-group (n=20) vs control group (n=22)

Meta-analysis of 14 RCTs (n=1724 patients with diabetes and depression)

Combined effect of all interventions was moderate, -0.370; 95% CI -0.470 to -0.271;

Large effect for psychotherapeutic interventions combined with diabetes self management interventions: -0.581; 95% CI -0.770 to -0.391, n=310

Moderate effect for pharmacological treatments: -0.467; 95% CI -0.665 to -0.270, n=281.

Collaborative care/stepped care (use of psychotherapy or pharmacotherapy in primary care: effect size of -0.292; 95% CI -0.429 to -0.155, n=1133;

Van der Felz-Cornelis et al, General Hospital Psychiatry, 2010
Web-based CBT therapy against depression in people with diabetes

Online CBT against depression in diabetes

Randomized controlled trial (n=255 adults with diabetes and elevated depression scores).

Internet-CBT was effective

Depression-scores decreased (P = 0.04, d = 0.29; clinical improvement 41% vs. 24% P < 0.001).

Decrease in diabetes-specific emotional distress (P = 0.03)

No effect on HbA$_{1c}$ (P > 0.05).

Stepped care for depression in diabetes in primary care

Research report

Effectiveness of a stepped care intervention for anxiety and depression in people with diabetes, asthma or COPD in primary care: A randomized controlled trial

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Department of Medical and Clinical Psychology, Center of Research on Psychology in Somatic diseases (CoRPS), Tilburg University, PO Box 90153, 5000 LE Tilburg, The Netherlands

Abstract

Background: Depression and anxiety are common in people with a chronic somatic disease. Although guidelines recommend stepped care, the effectiveness of this approach has not been evaluated in people with diabetes, asthma, or COPD in primary care.

Methods: 3559 People were sent screening questionnaires (41% response). Of 286 persons with anxiety and/or depression (Generalized Anxiety Disorder questionnaire, GAD-7, cut-off ≥ 8 and/or Patient Health Questionnaire, PHQ-9, cut-off ≥ 7), 46 were randomized into the intervention (stepped care and monitoring of symptoms; n=23) or control (usual care) group (n=23). Main outcomes were symptoms of anxiety and depression after the 12-months intervention and six months post intervention. Analysis of covariance was first adjusted for condition and baseline GAD-7/PHQ-9 scores and additionally for age, sex and education.

Results: The intervention group had a significantly lower level of anxiety symptoms at the end of the program (GAD-7 6± 6 vs. 9± 6; Cohen's d=0.61). This effect was still present six months post intervention. The effect on depression was statistically significant in the first model (PHQ-9 6± 4 vs. 9± 6;
Disturbed sleep in DM1 or DM2:

Poor sleep quality (PSQI-score >5)
31% of adults with type 1
42% of adults with type 2 diabetes
Fatigue in DM1:


Fatigue in type 1 diabetes: an understudied problem

Mounting evidence suggests that chronic fatigue is a common and understudied problem in patients with type 1 diabetes. In their clinical trial reported in The Lancet Diabetes & Endocrinology, Juliane Menting and colleagues were the first to have rigorously tested the effectiveness of an intervention for chronic fatigue in type 1 diabetes. The blended intervention (known as Dia-Fit) was composed of face-to-face and web-based sessions of cognitive behavioural therapy (CBT).

Compared with a waiting list control group (n=60), the CBT intervention (n=60) significantly reduced fatigue severity score (assessed with the Checklist Individual Strength [CIS] fatigue severity subscale; mean difference 13.8, 95% CI 10.0-17.5; p=0.0001) and functional impairment (assessed with the total score of the Sickness Impact Profile-8; mean difference 5.13, 95% CI 3.40-6.86; p=0.0001) after 5 months, with large effect sizes for both. However, the intervention did not have an effect on HbA1c (mean difference 0.2 mmol/mol, 95% CI -2.2 to 2.6; p=0.889) or glucose variability (mean difference 0.1 mmol/L, 95% CI -0.5 to 0.3; p=0.537).

The absence of an effect on glycaemic control in the trial is not in line with the results of a meta-analysis of trials in other patient populations, which suggested that CBT for a range of psychological outcomes (comorbid diabetes-related distress, depression, anxiety, and quality of life) also reduced short-term (4 months) and medium-term (up to 8 months), but not longer-term HbA1c. Floor effects might have played a part in the findings from this meta-analysis, since the mean baseline HbA1c was lowest in the studies that investigated the longer-term effects. Moreover, few studies had long-term follow-up, limited statistical power, and the included studies were heterogeneous.

The Dia-Fit intervention was based on the principles of CBT, and was targeted on changing cognitions and behaviours that are thought to maintain fatigue and not on improving glycaemic control. Participants who were randomly allocated to the intervention group could follow up to eight modules. Although some modules could potentially improve glycaemic control—for example, by increasing physical activity or by improving the sleep-wake pattern—how many of the participants have followed these modules was not described in detail.

Replication studies are now needed to test the effectiveness of CBT in reducing chronic fatigue in type 1 diabetes, to further explore its possible effect on glycaemic control, and to determine its potential effects on diabetes self-care behaviours, sleep quality, and mood. Menting and colleagues excluded participants with a mood disorder from their study, but many participants are likely to have had a raised depression score. In this subgroup, the intervention might have had a positive effect on their mood, since CBT and improvement of energy levels can help to reduce symptoms of depression.

In randomised controlled trials, researchers aim to control for regression towards the mean, the natural course of the disease, the Hawthorne effect, and placebo or nocebo effects. Menting and colleagues chose to use a waiting list control group in view of the absence of existing proven treatment options. In future studies, alternatives to the waiting list control group should be carefully considered, such as the psychological placebo or an active control.

In a systematic review of 49 randomised controlled trials testing the effectiveness of CBT in the acute phase of unipolar depression, investigators concluded that the effect size estimates for CBT were substantively different depending on the type of control used. "No treatment" was more effective than waiting list, leading the researchers to conclude that nocebo effects might have occurred in the waiting list control groups. However, Menting and colleagues argue that nocebo effects are unlikely to have occurred in their control group because the course of fatigue in the control population was similar to the natural course of fatigue in type 1 diabetes.

www.thelancet.com/diabetes-endocrinology Vol 5 June 2017
Percentages reaching target HbA1c (≤ 58 mmol/mol) in Denmark:

Insulin pump users: 30%

MDI: 25%
### Andel af patienter hvor HbA1c under eller lig 59 mmol/mol (7,5 %)

#### Pt med HbA1c≤59, type 1

1x. Andelen af patienter type 1, som har HbA1c under eller lig 7,5% (59 mmol/mol)

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<th>Std. opfyldt</th>
<th>Tæller/ nævner</th>
<th>Uoplyst (pct.)</th>
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<th>Aktuelle år 13/14</th>
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#### Pt med HbA1c≤59, type 2

1x. Andelen af patienter type 2, som har HbA1c under eller lig 7,5% (59 mmol/mol)

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<th>Std. opfyldt</th>
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https://www.sundhed.dk
Room for improvement, even in Denmark

More focus on psychological barriers is urgently needed!

Medical psychologists: valuable members of every diabetes team, who can support people with diabetes, family members and the medical team:

To facilitate behaviour change
Advise medical team regarding communication with patients/team

To treat: Depression
  Eating problems (boulimia/anorexia)
  Sleeping problems
  Improving self-care, motivational problems, not accepting diabetes
  Educational problems, problems at school
  Problems at work
  Marital problems
  Fear of self-injecting/self-testing
  Sexual problems
  Fear of hypo’s
  Hypo-unawareness

Room for improvement, even in Denmark

More focus on psychological barriers is urgently needed!
But are psychologists available? Are they well-trained? A case for further improvements in Denmark

In Denmark, a doctor can refer a patient to a psychologist in case of:

- Victims of robbery, violence and rape, incest, traffic and accident
- Persons who have attempted suicide
- Women having undergone induced abortion after the 12th week of pregnancy
- Persons suffering from seriously debilitating illness
- Persons above the age of 18 years with mild to moderate depression
- Persons between the ages of 18 and 38 years with mild to moderate anxiety disorder, including mild to moderate OCD
- Relatives of persons suffering from a seriously debilitating illness
- Relatives of recently deceased persons
- Relatives of seriously mentally ill persons
“The Danish authorities are controlling expenses for psychotherapy by limiting the number of psychologists with a public support agreement.”

“Further, there is a limitation to the number of clients with public support, that any of those psychologists can take in every year.”

“There is a quota for every of the above criteria, and the quota for depression and anxiety are often filled up quickly, resulting in even longer waiting lists than you will usually find when using a public support agreement.”

Source: http://www.actpsykolog.dk/the-danish-health-care-system---psychotherapy.html
For the coming three years we are working on a strategic level primarily through three political themes.

- Equality within health
- Secondary prevention
- Patient Empowerment

On an operational level we are working to achieve six key policy issues. These issues address important obstacles that people with diabetes face in their daily life.

- Everyone with diabetes should have access to psychological treatment
- Everyone with diabetes should have access to appropriate assistive products
- Young people with diabetes should be offered a more targeted approach – to ensure an optimal transition from child to adult
- People in increased risk of developing diabetes should be screened
- Everyone with diabetes should be offered appropriate patient education
- Everyone with diabetes should have their rights acknowledged
More psychologists: an expensive decision for the Danish Government?
**Figure Legend:**

Intervention vs control differences on mean depression scores (range, 0-4) from the 20 depression items from the Hopkins Symptoms Checklist-90 (SCL-90). Error bars indicate standard errors. The 3-, 6-, and 12-month means were adjusted for baseline. Asterisk indicates $P = .04$; dagger, $P = .03$. 
Decrease of costs after intensified depression treatment!

Pathways study:

This effective treatment of depression saved costs:

Period of 24 months: 61 extra depression-free days

Cost for outpatient care: $314 less in comparison with standard care

“Net economic benefit” of this depression intervention:
Decrease of cost: $952 per patiënt

Simon et al. Arch Gen Psychiatry, 2007
1.5 million Danes live with a chronic disease

In a typical municipality with 50,000 inhabitants:

- 2-3,000 citizens with type 2 diabetes
- 2,000 citizens with heart disease
- 2,000 citizens with COPD
- 2,300 citizens with cancer
- 8,000 citizens with muscular-skeletal disease
- 2,000 citizens with depression
Danmark needs well-trained Medical Psychologists:

Master Medical psychology in Tilburg:

- Started in 2006
- Master of Science (2 years)
- Still unique
- Specialisations: pediatric psychology, adults, clinical neuropsychology, biological psychology
- Focus: cardiology, oncology, diabetes, lung diseases
- Maximum of 65 new students
- Selection (interview)
- No master of Medical Psychology in Denmark!
- SDU: medical psychology covered in B06 and K03
## Medical psychology in Tilburg

### 1st year

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<th>Pathology:</th>
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<td>Pediatric psychology</td>
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### 2nd year

Clinical internship and research
Danish people with diabetes and their family members need:

Better access to high quality psychological care/support

Better reimbursement of psychological care in diabetes

Psychologist in every diabetes team

Master (or postdoctoral education) in medical psychology
Future directions of research
Large EU grant application on hypoglycemia: 2017

Prof Frans Pouwer and prof Jane Speight (WP6)

IMI2

10th Call for proposals
Objectives (O): To provide a comprehensive assessment of the burden of hypoglycaemia for people with diabetes (PWD) and their family members (FM) and to identify knowledge gaps

O6.1: Determine the impact of hypoglycaemia on (dimensions of) QoL in PWD

O6.2: Determine the impact of hypoglycaemia on (dimensions of) QoL in family members of PWD

O6.3: Determine the impact of hypoglycaemia on cognitive function and academic performance in PWD

O6.4: Summarise expressed care needs/wishes of PWD/FM regarding hypoglycaemia

O6.5: Design/execute innovative research that fills identified knowledge gaps.
Mange tak!!!

Har du spørgsmål?