Background

• Individuals diagnosed with prediabetes are at a high risk for the onset of type 2 diabetes and consequent health problems.1
• Those diagnosed with prediabetes who modify their health behaviors (e.g., diet quality, aerobic exercise) can prevent the onset of diabetes,2 though challenges such as depression and illness distress may impede health behavior change.3
• In addition, social perceptions may play meaningful roles in the physical and emotional functioning of individuals with prediabetes. In particular, the tendency to compare oneself with others (i.e., social comparison orientation) and perceived social support are known to influence health behavior change and health outcomes in illnesses such as cancer and type 2 diabetes.4,6
• Social problem solving has been studied frequently in diabetes, but fewer studies have assessed its role in prediabetes.7 Understanding the role of perceiving challenges as overwhelming problems (i.e., negative problem orientation) may allow clinicians to overcome psychosocial barriers to healthy behavior change.

Study Aims

• To characterize social comparison, social support, and social problem solving (problem orientation) among individuals with prediabetes, and
• To examine relations between these social perceptions and prediabetes outcomes:
  1) Distress about the illness
  2) Health-related quality of life (HRQOL)
  3) Depressive symptoms
  4) Aerobic physical activity, and
  5) Motivation for illness self-care.

Method

• Adults who reported a previous diagnosis of prediabetes by a physician were recruited via web and print advertisements.
• Interested individuals were directed to a web-based survey. Respondents received $5 to the Amazon store (www.amazon.com) as compensation.
• Participants (n = 142, 46% female, M age = 41, M height = 28.9 kg/m²) completed a demographics questionnaire and self-report measures of social comparison,6 social support,7 negative problem orientation,7 illness distress,10 HRQOL11 depressive symptoms,12 physical activity, and motivation for self-care.

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Table 1. Descriptive Statistics for Variables of Interest

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Possible Range</th>
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<tbody>
<tr>
<td>Social Comparison</td>
<td>42.23 (5.68)</td>
<td>11 - 66</td>
</tr>
<tr>
<td>Social Support Total</td>
<td>70.92 (7.37)</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Negative Problem Orientation</td>
<td>35.35 (10.76)</td>
<td>12 - 60</td>
</tr>
<tr>
<td>Illness Distress</td>
<td>47.89 (18.54)</td>
<td>0 - 80</td>
</tr>
<tr>
<td>Physical HRQOL</td>
<td>62.04 (18.23)</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Emotional HRQOL</td>
<td>55.09 (11.18)</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>31.14 (8.11)</td>
<td>0 - 60</td>
</tr>
<tr>
<td>Aerobic Physical Activity</td>
<td>154.53 (118.26)</td>
<td>0 - 600</td>
</tr>
<tr>
<td>Motivation for Illness Self-Care</td>
<td>15.36 (5.22)</td>
<td>0 – 20</td>
</tr>
</tbody>
</table>

Results

Physical and Emotional Functioning in Prediabetes

• As shown in Table 1, participants with prediabetes reported considerable distress about their health and emotional functioning. In particular, participants reported severe depressive symptoms (clinical threshold = 16).
• Reported social comparison orientation was noticeably higher in the present sample than in healthy samples.6
• Participants on average reported a moderate tendency to problems from a negative orientation.
• Participants also reported meaningful levels of social support, however.

Relations between Social Perceptions and Prediabetes Outcomes

• Social comparison, social support, and negative problem orientation all were meaningfully associated with diabetes distress, HRQOL, and depressive symptoms (ps < 0.05; see Figure 1).
• Minutes of aerobic physical activity per week was positively associated with social comparison (r = 0.27-0.40, p < 0.05), but was not related to social support (ps > 0.35). Conversely, motivation for self-care was positively associated with social support, but was not related to social comparison.
• Negative problem orientation was positively associated with minutes of aerobic activity (r = 0.29), but was negatively associated with motivation for illness self-care (r = -0.29, ps < 0.02).
• Although all three domains of social perception predicted physical HRQOL, only negative problem orientation predicted depressive symptoms (with all three domains in one model; see Table 2).

Conclusions

• Consistent with previous work in patient samples, social comparison and social support were strongly associated with most illness-relevant outcomes in prediabetes.
• Of note, negative problem orientation was the strongest predictor of prediabetes outcomes, and independently predicted outcomes when social comparison and social support were controlled.
• This is the first study to identify negative problem orientation as a key aspect of prediabetes. If replicated in large samples, findings indicate that attention to problem orientation in clinical care could improve outcomes and reduce the onset of type 2 diabetes.

Table 2. Prediction Models for Social Perceptions and Prediabetes Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Social Comparison</th>
<th>Social Support</th>
<th>Problem Orientation</th>
</tr>
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<tbody>
<tr>
<td>Illness Distress</td>
<td>0.81 (0.24)**</td>
<td>0.52 (0.29)</td>
<td>1.17 (1.15)**</td>
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<tr>
<td>Physical HRQOL</td>
<td>0.47 (0.21)*</td>
<td>0.51 (0.19)**</td>
<td>-1.37 (1.12)**</td>
</tr>
<tr>
<td>Emotional HRQOL</td>
<td>0.01 (0.16)</td>
<td>0.87 (0.12)**</td>
<td>-0.64 (0.16)**</td>
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<tr>
<td>Depressive Symptoms</td>
<td>-0.11 (0.13)</td>
<td>-0.10 (0.10)</td>
<td>0.06 (0.08)**</td>
</tr>
<tr>
<td>Aerobic Minutes</td>
<td>2.50 (2.60)</td>
<td>1.69 (2.24)</td>
<td>4.04 (2.25)</td>
</tr>
<tr>
<td>Self-Care Motivation</td>
<td>0.46 (0.10)*****</td>
<td>-0.20 (0.08)**</td>
<td>-0.36 (0.08)*****</td>
</tr>
</tbody>
</table>

Table 2 Note: HRQOL = health-related quality of life; *p < 0.05; **p < 0.01; ***p < 0.001.

References