Monitoring of Individual Needs in Diabetes (MIND): Baseline Data From the Cross-National Diabetes Attitudes, Wishes, and Needs (DAWN) MIND Study

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OBJECTIVE—To test the feasibility and impact of implementing the computer-assisted Monitoring of Individual Needs in Diabetes (MIND) procedure, which is aimed at improving recognition and management of the psychological needs of diabetic patients in routine care.

RESEARCH DESIGN AND METHODS—The MIND study was implemented in diabetes clinics across eight countries as part of the annual review. The computerized assessment covered emotional well-being (World Health Organization 5 Well-Being Index), diabetes-related distress (Problem Areas in Diabetes), life events, and the patient's agenda. Medical data were retrieved from the charts, and agreed-upon actions were recorded.

RESULTS—Of 1,567 patients monitored using the MIND, 24.9% had either likely depression or high diabetes-related distress; 5.4% had both. Over 80% of these patients were newly identified cases, and 41% of patients with depression were referred to a mental health professional.

CONCLUSIONS—Monitoring of well-being and diabetes-related distress as part of routine diabetes care is feasible and helps to identify and discuss unmet psychosocial needs.

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P sychosocial problems are common among diabetic patients but often are not recognized and addressed (1,2). Systematic monitoring of well-being in diabetes care has shown to increase recognition rates and improve psychological outcomes (3–5) but is rarely practiced (6). As part of the Diabetes Attitudes, Wishes, and Needs (DAWN) program, we conducted the cross-national Monitoring of Individual Needs in Diabetes (MIND) study, which is aimed at implementing computer-assisted assessment and discussion of well-being as part of the annual review and evaluate its impact. Here, we present baseline data.

RESEARCH DESIGN AND METHODS

—The DAWN MIND study is a multinational, prospective, observational study aimed at evaluating the feasibility and impact of implementing monitoring and discussion of well-being as an integral part of the diabetes annual review in secondary diabetes care. Diabetes centers from eight countries participated: Croatia ($n = 200$), Denmark ($n = 202$), Germany ($n = 248$), Ireland ($n = 124$), Israel ($n = 288$), the Netherlands ($n = 312$), Poland ($n = 89$), and the U.K. ($n = 104$). Prior to the study, the MIND computer software was made available to all centers, along with 1-day training and a manual. The medical ethical committees of all participating centers approved the study.

All adult (aged >18 years) type 1 and type 2 diabetic patients were eligible, unless they were unable to read or complete questionnaires on the computer. Informed consent was obtained from the patients.

The computerized assessment included two validated and widely used psychological measures pertaining to emotional well-being (World Health Organization 5 Well-Being Index [WHO-5]) (7,8) and diabetes-related distress (Problem Areas in Diabetes [PAID]) (9) supplemented with a short measure of life events and a question for the patient to help set the agenda for their consultation. A moderate correlation ($r = -0.47$, $P < 0.01$) was found between WHO-5 and PAID, confirming that both constructs are related but not identical. The computer generated a summary of outcomes using standardized scores (bars 0–100) indicating means and clinical cutoff values. The patient and professional received a print out to facilitate discussion. Clinical characteristics were retrieved from the medical charts, including type and duration of diabetes, most recent A1C, treatment regimen, complication status, and comorbidity. The professional noted if patients had been offered or already were receiving psychological treatment.

Statistical analyses

SPSS version 15.0 was used to carry out statistical analyses. Descriptive statistics, *t* tests, Pearson correlations, and ANOVA were used to determine sociodemographic characteristics, clinical status, and psychological outcomes. The prevalence of likely depression (WHO-5 ≤28) and diabetes-related distress (PAID ≥40) was determined, along with the percentage

of newly identified cases and the number of patients offered a referral in response to the MIND assessment.

RESULTS—A total of 1,567 patients (51.9% men; mean age 54.2 ± 14.8 years) were monitored, of whom 57% ($n = 901$) were diagnosed with type 2 diabetes. Almost 80% of the patients had lived with diabetes for ≥6 years, and 51.8% had diabetes complications. Mean A1C was 7.9 ± 1.4%, with no difference by sex or type of diabetes.

Psychological outcomes
The mean well-being score (WHO-5) for the total group was 60.3 ± 22.5, and 11.4% ($n = 178$) had a score indicative of likely depression (WHO-5 ≤28). After the MIND procedure, 80.9% of the patients with likely depression were newly identified cases, of whom 41.0% were offered a referral for professional psychological care (Fig. 1).

The mean diabetes-related distress score (PAID) for the total group was 23.1 ± 18.8, and 19.0% ($n = 297$) reported high levels of diabetes-related distress (PAID ≥40). Of the patients with high diabetes-related distress, 86.9% were newly identified cases, of whom 31.8% were offered a referral for professional psychological care (Fig. 1).

Of the total group, 24.9% ($n = 390$) had either likely depression or high diabetes-related distress; 5.4% had both. A1C was weakly correlated with well-being (WHO-5) ($r = -0.06$, $P < 0.05$) and diabetes-distress (PAID) ($r = 0.16$, $P < 0.01$).

Personal agenda
In response to the agenda-setting item, 14.7% of the total group had indicated a wish to discuss their mood or stress, compared with 31.3% of the patients identified as having either likely depression or high diabetes-related distress.

CONCLUSIONS—Findings from this DAWN MIND study confirm a high prevalence of psychological comorbidity in people with diabetes across countries, with almost one-quarter suffering from either depressive symptoms or high diabetes-related distress. Importantly, more than three-quarters of patients with emotional problems were newly identified. Interestingly, less than a third (31.3%) of these patients had indicated a wish to discuss their mood or stress level. However, in all patients identified as being in need of psychological care, discussing well-being scores was well received, confirming previous research (10). In less than half of the cases where scores flagged emotional problems, a referral was offered to the patient. As a means to increase referral rates, further refinement of the MIND procedure could be considered, linking MIND outcomes to identified referral pathways as part of a collaborative care program (5).

Importantly, the weak association found between A1C and emotional well-being demonstrates that the patient's psychological status cannot be inferred from glycemic outcomes and should not be limited only to those in poor control.

In busy diabetes clinics, adding a psychological-monitoring procedure to the annual review may pose challenges. Completing the questionnaires, however, only takes 5–7 min, and a discussion of the outcomes takes, on average, another 15 min. Additional shortening of the MIND procedure could be considered, for example by using an abbreviated version of the PAID (11).

Some limitations of our study warrant consideration. The lack of a control group could be viewed as a weakness. However, the superiority of monitoring of well-being versus usual care was previously demonstrated in randomized controlled trials (3–5). Participating clinics were self-selected and sample sizes were relatively small, limiting the external validity of the findings. Rates of poor well-being and high diabetes-related distress found in this study, however, are consistent with numerous studies (12,13).

We conclude that routine monitoring of well-being as an integral part of diabetes care as recommended by International Diabetes Federation and the American Diabetes Association (14,15) is feasible, well received, and promotes the recognition of patient's psychological needs. Longitudinal data will show if implementing MIND positively impacts emotional well-being.
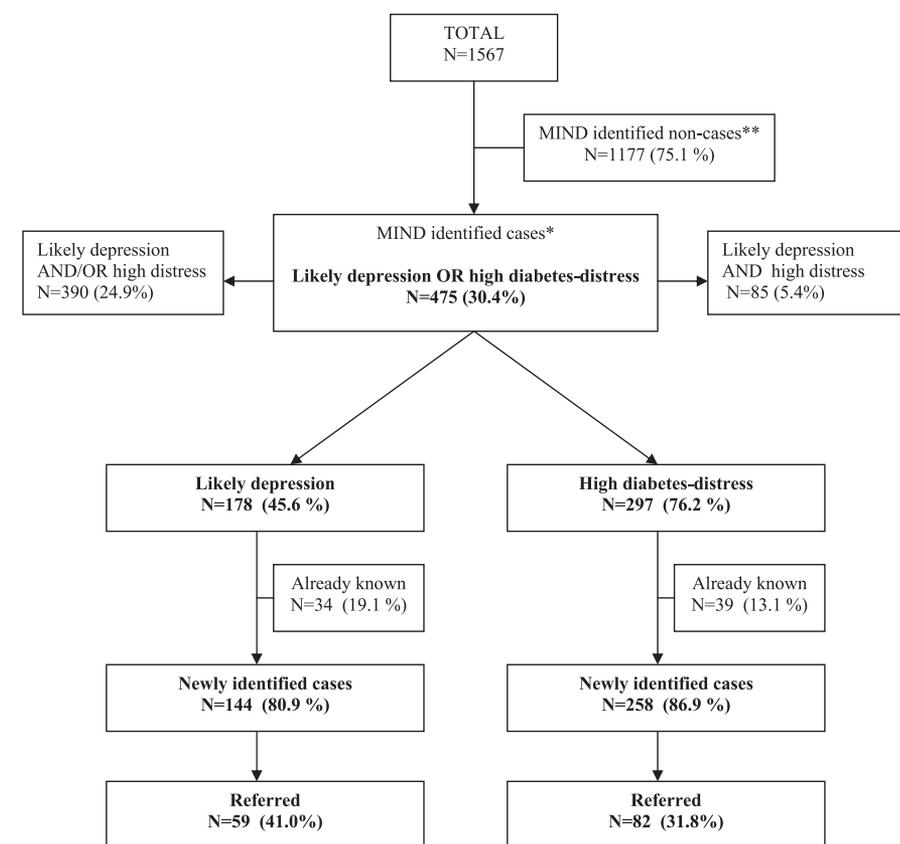

Figure 1—*Flowchart of (newly) identified cases and referral to professional psychological care after MIND baseline monitoring. *MIND-identified cases = likely depression (WHO-5 ≤28) or high diabetes-related distress (PAID ≥40); **MIND-identified noncases = average to good well-being (WHO-5 >28) and/or low diabetes distress (PAID <40).*

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