



# #DiabetesPsychologyMatters

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**Editor's Note:** This article was adapted from the address Dr. Snoek delivered as the recipient of the American Diabetes Association's Richard R. Rubin Award for 2019. This award recognizes a behavioral researcher who has made outstanding, innovative contributions to the study and understanding of the behavioral aspects of diabetes in diverse populations. Dr. Snoek delivered the address in June 2019 at the Association's 79th Scientific Sessions in San Francisco, CA.

In June 2019, I was honored and humbled to become the first non-American researcher to receive the American Diabetes Association award named after Richard R. Rubin. Richard, who sadly died in 2013, was a true ambassador for behavioral science in diabetes, as so eloquently described by his long-time friend and colleague Mark Peyrot, himself a hero in behavioral diabetes research (1). Richard Rubin was already a big name in the field when I started my career as a researcher and clinician in diabetes psychology in the early 1990s. I had the pleasure of meeting him several times, as well as collaborating with him as coauthors on a book chapter and a few articles over the years. Richard was an inspiration to me.

## Contributions of Behavioral Research

Psychology has much to offer to diabetes care. First, psychology provides knowledge, theory, and constructs that help to describe and understand human behaviors and develop hypotheses that can be empirically tested. Diabetes is by all means a "human condition," with a prominent role for self-management behaviors and a significant psychosocial impact. Psychology can help us make sense of human behaviors in the context of diabetes care, and that includes not only the behaviors of people with diabetes, but also those of their significant others and of health care professionals. Second, behavioral science offers methodologies and measures to help capture the lived experience of individuals affected by diabetes. The importance of psychological screening and patient-reported outcomes is increasingly recognized, and numerous validated tools are available for both research and clinical purposes in the diabetes field. The development of such tools is important and laborious work

done mostly by psychologists and has not always been appreciated enough. Third, psychology offers strategies and interventions to effectively promote behavior change and emotional well-being. The latter has been the ultimate aim of our research: to develop, test, and implement effective interventions that help people with diabetes achieve optimal health outcomes. And this leads us to theory and measurement. As Kurt Lewin, one of the founders of modern psychology, once said, "If you truly want to understand something, try to change it" (2).

## Indirect Approaches

When we think of psychological interventions, we usually picture a psychologist in a room with a patient or a group of patients. However, most people with diabetes do not have access to a psychologist; rather, they see nurses, doctors, and sometimes dietitians or other health care professionals. These professionals on the front lines of diabetes patient care are the ones who deliver most of the care, and, with appropriate training and tools, they can indirectly offer psychological interventions as part of their routine consultations.

As one example, we developed a procedure called MIND (Monitoring of Individual Needs in Diabetes) that we have tested both locally and internationally (3). Briefly, people with diabetes are offered a short psychological assessment as part of routine consultation. This assessment includes questions to elicit patients' agenda for their consultation and questions tapping into their diabetes-related distress and emotional well-being. A trained diabetes nurse specialist discusses the outcomes with each patient, and together they

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decide whether any actions are needed, such as referral to a mental health professional. This approach is not a simple depression screening procedure; rather, it aims to put emotional well-being at the forefront of the consultation and to promote psychologically informed diabetes care.

Another example of indirect psychological intervention would be diabetes self-management education and support programs. Such programs, grounded in psychological theory and delivered by diabetes educators, have been shown to empower patients and improve their well-being (4).

### Direct Approaches to Reducing Diabetes Distress

In the past decade, comorbid depression has been the focus of many studies, and rightfully so given its high prevalence and its negative impact on both quality of life and diabetes outcomes. Recently, attention has shifted from depression to diabetes-related distress, or simply “diabetes distress.” Diabetes distress is distinct from depression in that it is not a disorder, but rather an emotional response to the strains of living with diabetes. It affects 20–40% of people with diabetes and is associated with difficulties in diabetes self-management and with suboptimal outcomes (5). The good news is that diabetes distress is highly responsive to psychological and psychoeducational interventions.

### When and for Whom?

Recent meta-analyses (6,7) have found that cognitive behavioral therapy offered to participants with high baseline levels of diabetes distress and elevated A1C levels effectively improves both. Of course, it makes sense to offer interventions to those with high levels of diabetes distress, comprising ~25% of the patient population based on commonly defined cut-off scores on the Problem Areas in Diabetes (PAID) scale or the Diabetes Distress Scale (DDS), two validated, freely available questionnaires developed by Bill Polonsky and his colleagues (8,9).

Although it is practical to distinguish high versus low diabetes distress, in reality there are three levels of distress: low, moderate, and high, as shown by our own work (unpublished) and that of Fisher et al. (10). Distribution of PAID and DDS scores may differ across populations and settings, but for people with either type 1 or type 2 diabetes, we can expect overall ~20% to experience high distress, 40% to feel moderate distress, and 40% to have low distress. From a public health perspective, we need to ask ourselves whether we can shift the distribution so that fewer people experience distress about their diabetes. For that purpose, we need to know more about the natural course and trajectories of diabetes distress in a given population.

This need speaks again to the importance of performing repeated assessments (i.e., monitoring patients over time and responding to their changing needs rather than acting on a one-time screening). We should be cautious in interpreting a single elevated distress score as an indication for professional help; high diabetes distress at a given moment in time is not necessarily maladaptive and indeed may well be an adaptive response to a stressful event (e.g., receiving bad news regarding the progression of a diabetes complication). It is over time that we can see whether and how well a person adapts and whether professional support is called for.

A limited number of studies have looked into trajectories of diabetes distress over time (11,12) and found that, overall, roughly one-third of people with diabetes report either stable-high or moderate-but-increasing levels of distress, indicating a (future) need for psychological support. The remaining two-thirds can be classified as having stable-low or moderate-but-decreasing distress, and for these individuals, monitoring and watchful waiting would suffice.

What causes people to transition from low to moderate to high diabetes distress or vice versa? To answer this question, we need methods to help track the emotional status of people with diabetes over time and in real life. Regarding the precision of measurement, the traditional approach of administering retrospective well-being questionnaires repeatedly over a certain period of time is helpful but not likely to be informative when it comes to identifying specific events or triggers preceding a change in distress level. So-called ecological momentary assessment (EMA), also known as the experience sampling method, is both needed and feasible with current technology. With EMA, patients are provided a mobile device application (app) that prompts questions on a smartphone over the course of a day and stores the data automatically. The app thus provides the opportunity to capture psychological functioning in real time without recall bias. Similar to continuous glucose monitoring, EMA can help us connect the dots and better understand the dynamics of diabetes distress in the context of a person's life (13). Moreover, “digital phenotyping” allows us to personalize psychological support and offer so-called just-in-time adaptive interventions the timing, content, and intensity of which are based on individuals' digital profile (14).

### What? Behavior Change and Mental Health

In the field of psychology, we are used to distinguishing between behavior change (lifestyle) interventions and mental health interventions, which come from different traditions and theoretical models. The first type of intervention is aimed at promoting health behaviors (e.g., following a healthy diet,

quitting smoking, getting physical exercise, and performing diabetes-specific self-care tasks), with an emphasis on beliefs and perceptions regarding health risks and future benefits. The second type of intervention has mood repair as its primary aim and targets negative emotions. The distinction between these two types of intervention is not only largely artificial, but it is also not helpful in the context of supporting people with diabetes, for whom health behavior and mood are both priorities and are closely connected.

An elegant illustration of this connection comes from a recent study involving 28,000 healthy volunteers that used EMA to ask participants about their feelings and activities. It was found that negative affect drives people to seek solace in short-term rewards aimed at boosting mood (e.g., going out), whereas positive affect leads people to shift priorities toward less pleasant activities (e.g., chores) that are important for long-term goals but that can dampen mood. We can clearly see the relevance of these dynamics for diabetes, where people are continuously challenged to make healthy decisions that have long-term consequences, while attaining a satisfactory quality of life now.

Particularly for people with diabetes and comorbid psychological distress, an integrated approach is therefore warranted to help overcome potential conflicting self-regulatory demands (15). A recent study by de Groot et al. (16) that combined depression treatment with physical activity in people with type 2 diabetes is a good example. Behavior change and mental health are two sides of the same coin.

### How? Reaching Those in Need

Systematic reviews and meta-analyses of psychological therapies have shown that these treatments are moderately effective in both type 1 and type 2 diabetes and are worth disseminating (6,7,17–20). Unfortunately, we reach only a limited number of people in need. Offering therapies via the Internet can help to expand our reach. Online interventions have been shown to be safe, patient-friendly, cost-saving, and effective in people with or without a chronic illness.

We were among the first to develop and test a Web-based course on coping with depression specifically for people with diabetes and comorbid depression, and we showed that it effectively reduced depressive symptoms and diabetes distress even in the more severe cases (21,22). We are currently piloting a fully self-guided, Web-based program called MyDiamate. This app is designed to be a “buddy” for people with diabetes and to assist them in healthy coping. It offers different modules and modalities and can be used 24/7 at the discretion of the user. We hope to further develop this app and make it available to a large audience.

As Richard Rubin once noted, “Coping effectively with diabetes requires emotional strength and coping skills” (23). That’s where we can make a difference, and that is why diabetes psychology matters.

### ACKNOWLEDGMENTS

Whereas Richard Rubin had strong personal links to this field, with both a sister and a son diagnosed with type 1 diabetes, serendipity played more of a role in my own career. Having done some research in diabetes as a student in clinical psychology, I came to work years later as a medical psychologist at the Academic Hospital of Vrije Universiteit in Amsterdam, where I was fortunate enough to be invited to join the diabetes research and care center under the leadership of Robert Heine, MD. This position resulted in a long and successful collaboration, and Robert opened many doors for me. When he moved to the United States, he was succeeded by Michaela Diamant, MD, with whom I continued to collaborate with great pleasure until her death in 2014. I remain grateful to them both.

It is a privilege to work in a clinical academic setting with bright and dedicated students, and I am proud to see some of them become established researchers themselves, including Frans Pouwer, now based in Denmark; Eelco van Duinkerken, who is building a career in Brazil; and Maartje de Wit, who now works with me in Amsterdam. I also want to acknowledge the support and collegiality of my fellow researchers from the United States, particular Dan Cox, Linda Gonder-Frederick, Barbara Anderson, Bill Polonsky, Garry Welch, Larry Fisher, Bob Anderson, Ed Fisher, David Marrero, and Mark Peyrot. Working with them all through the years has been a true pleasure.

Finally, I would like to thank my wife Sandra and my two sons, who posted on Instagram the day I delivered this address, “Great job, Daddy.”

### DUALITY OF INTEREST

No potential conflicts of interest relevant to this article were reported.

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