Behavioral and Psychosocial Interventions in Diabetes

A conceptual review

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A major task of diabetes care providers is to support patients in performing necessary self-care behaviors using well-accepted strategies such as recommending effective self-care regimens and educating patients in their use. Also critical are behavioral interventions that help patients implement self-care regimens in the face of life's exigencies.

The purpose of this article is to identify key behavioral/psychosocial interventions available to diabetes care providers. We present a conceptual framework for organizing the application of these interventions, focusing on practical interventions that can be implemented by a typical health care provider, including referral to a behavioral/psychosocial specialist where this seems the most practical choice.

ISSUES OF PRACTICALITY — A typical office visit lasts only 15 min (1). Therefore, feasibility is an important consideration in evaluating patient care recommendations. The strategies we propose should be no more time-consuming than these approaches, which are highly recommended for their feasibility. A previously demonstrated, effective counseling strategy for weight loss can be maintained by 15-min visits (2). A behavior change support approach, the 5As (ask, advise, assess, assist, arrange) Model, is estimated to take less than half the time of a normal office visit (3). An emotional support approach, the BATHE (background, affect, trouble, handling, empathy) Model, is estimated to take ~15 min (4).

Feasibility must also be assessed in terms of what it costs to ignore psychosocial problems or to employ an ineffective approach to behavior change. Patients who have psychological problems use health services more intensively, and if patients do not change their behavior, the clinician must spend time dealing with the problem at subsequent visits. Finally, research suggests that dealing with patients' concerns does not require additional time if done correctly (5). Thus, effective clinical procedure may also be efficient.

OVERVIEW OF INTERVENTIONS — The review we present is not exhaustive. We do not discuss all interventions that have been proposed or tried (e.g., community-level interventions, provider-oriented interventions, family-specific interventions, and educational interventions). Our goal in this article is more comprehensive (to provide a conceptual framework for our recommendations) yet more narrow (to focus on interventions that are both essential and practical). We discuss generic interventions that can be used to deal with any behavioral/psychosocial problem presented to diabetes clinicians, whether specific to diabetes or not (6).

In reviewing the literature for this review, we found that most published studies of behavioral/psychosocial interventions provide relatively few details about the intervention, a finding that others have commented on (7). We also found a number of conceptual frameworks regarding behavioral/psychosocial interventions and reviews of existing behavioral strategies. Based on the results of our preliminary review of the literature, we decided that our task in this article should be to provide a general framework for behavioral and psychosocial intervention that could guide the diabetes care practitioner. This framework incorporates two elements: the key issues to be addressed and the main elements of a comprehensive, coordinated intervention to address these issues. The conceptual foundation of our framework is the coping paradigm; although the connection of interventions to the coping framework is often implicit, it can be used to conceptualize and organize the plethora of theories and interventions that exist (8).

We started by identifying two domains of issues: *1*) self-care issues such as regimen acceptance and adherence and 2) emotional issues such as diabetes-related distress and depression. The majority of behavioral/psychosocial research in diabetes deals with one or both of these issues in some way. These two domains correspond to the two types of coping, namely, problem-focused coping, including strategies to resolve and/or prevent problems; and emotion-focused coping, including strategies to deal with the negative emotions resulting from problems (9). Research has shown that each of these coping strategies is effective, as is their combination (10–13). Problem-focused strategies are most appropriate for problems that can be directly remedied, and emotion-focused strategies are most appropriate for problems that cannot be directly remedied (14).

Although coping research often incorporates both types of strategies, research focusing on behavior change strategies rarely addresses psychological distress, and research on clinical management of depression/distress rarely addresses self-management behavior change. Research on behavior change

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Received for publication 27 June 2007 and accepted 28 June 2007.

Published ahead of print at http://care.diabetesjournals.org on 31 July 2007. DOI: 10.2337/dc07-1222.

Abbreviations: CBT, cognitive behavioral therapy; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, 4th edition.

A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.

Table 1—*Behavior change theories/models, concepts, and interventions*

Category	Theory	Term/concept	Intervention
Motivators			
	BMR	Need	Information
	HBM	Susceptibility, severity	
	CSM	Illness identity, consequences	
Motivators			
	HBM	Benefits of treatment	Information, MI
	CSM	Control beliefs	
	TPB	Perceived behavior control	
Motivators			
	OLT	Incentives/rewards	Behavioral contracting
Inhibitors			
	BMR	Blocking factors	Problem-solving, environmental change
	HBM	Barriers to action	
Facilitators			
	BMR	Enabling factors	Problem-solving training, coping skills training, self-monitoring
	SCT, TTM	Self-efficacy	
Motivators and inhibitors			
	TTM	Decisional balance (barriers and benefits)	Information, MI
Intentions			
	BMR, TPB, TRA	Intentions	Goal-setting
	SRT	Goals	
	TTM	Readiness	
Triggers			
	BMR	Precipitating factors	Environmental change, self-monitoring, behavior contracting
	HBM	Cues to action	

Abbreviation (corresponding reference): BMR, Behavioral Model–Revised (15,16); CSM, Common Sense Model (17); HBM, Health Belief Model (18); MI, Motivational Interviewing (19); OLT, Operant/Learning Theory; TPB, Theory of Planned Behavior (20); TRA, Theory of Reasoned Action (21); TTM, TransTheoretical Model (22); SCT, Social Cognitive Theory (23); SRT, Self-Regulation Theory (24).

draws extensively on psychological theories of behavior, while research on distress is often pragmatic (rather than theoretical) and may use pharmacologic rather than behavioral interventions. Thus, there are good theoretical and practical reasons to examine the application of these strategies separately.

THEORIES/MODELS OF BEHAVIOR AND BEHAVIOR CHANGE

— To those who are not academic behavioral scientists, the theories and models of behavior and behavior change can appear a bewildering jumble. Upon closer inspection, much of this problem can be traced to a lack of consistent terminology and an emphasis on differences that are real but not relevant for clinical application. Moreover, although few approaches seek to be comprehensive, lack of attention to a particular factor does not mean that the factor is unimportant; the factor is simply not a focus for that particular theory/model. Based on a synthesis of existing theories/models (Table 1), we argue that four categories of factors should be the target of behavior change interventions in diabetes: motivators, inhibitors/facilitators, intentions, and triggers. Motivators are factors that predispose one to action—perceived need, perceived benefits of treatment, outcome expectancies, rewards/incentives, and cues to action. Inhibitors/facilitators are barriers to or resources for action; barriers can be the absence of prerequisites to action (i.e., resources such as funds, skills, or support) as well as the presence of an obstacle. Intentions are the proximal cause of behavior change; individuals must have an intention to change, be ready to change in the present, and have a particular goal toward which they can work. Triggers are the events that shift a person from being predisposed to action into an action state.

In addition to theories that identify specific mediators of behavior change, there are theories/frameworks that provide a philosophical foundation for behavior change interventions. The "empowerment" or patient-centered approach suggests that the patient is at the center of the behavior change process (25,26): the patient must implement diabetes self-care (and therefore must be amenable to proposed changes), and the patient must be internally motivated to change (27). Thus, diabetes care providers should attempt to foster patient autonomy by supporting patient efforts to change their own behavior, and information and interventions should be personalized, rather than using a "one size fits all" approach (28,29).

BEHAVIOR CHANGE INTERVENTIONS

— A variety of research reviews have identified commonly used and successful behavior change interventions designed to improve health outcomes. In addition to information and homework/skill rehearsal (often defined as educational interventions), the more common interventions include goal setting, motivational interviewing, problem-solving and coping skills training, environmental change (barrier reduction), behavioral contracting, self-monitoring, use of incentives/rewards,

and social support (7,19,30–32). These interventions can be linked to the key targets of behavior and behavior change (33) (Table 1). As Table 1 suggests, interventions are not specific to particular theories; thus, while most behavioral interventions might be described as "theory based," the efficacy of an intervention does not necessarily provide evidence for one theory over another.

In reviewing the research on these behavior change interventions, we found some general patterns. First, research on specific interventions has generally demonstrated their efficacy (as discussed below). Second, reviews that have considered diverse interventions have generally found an overall effect of the interventions (34,35). Third, there is little evidence regarding the additive and/or synergistic effect of combining interventions. Yet, we see no inherent conflict among the different intervention components discussed herein, and each has a different and complementary mechanism of action. Thus, the behavior change support process we propose incorporates many of the key principles contained in existing behavior change models and many of the intervention components advocated by experts in the field and/or supported by empirical evidence. Below we note empirical support for the efficacy of each intervention as each is discussed.

We go beyond documenting the efficacy of proposed interventions to document their practicality and demonstrate how a clinician could implement these interventions. We conceptualize this integrated set of interventions as a behavior change support process consisting of a step-by-step approach in which interventions occur in a particular sequence. This sequence consists of five major steps (the 5C intervention):

1. Constructing a problem definition
2. Collaborative goal setting
3. Collaborative problem solving
4. Contracting for change
5. Continuing support

Below we provide the rationale for each of the five steps and a simple description of what is involved.

Constructing a problem

The initial step of the behavior change support process is often regarded as self-evident and does not receive sufficient attention (8), but this step is not easy, and failure to perform it properly can condemn the behavior change process to failure before it starts (36). Below we identify some key considerations in constructing an appropriate problem definition.

Start with the patient's problem. This principle is at the heart of the patient-centered approach (25,26). When patients have problems that trouble them, it is better to start with those problems, unless the clinician has identified a problem that is immediately life-threatening or debilitating. This approach increases patients' confidence in their own abilities to change and increases the clinicians' credibility and thus his/her influence (37).

Specify the problem. Because the patient has the information about the problem, the clinician should act as a facilitator for the patient's self-examination, helping the patient define the problem in a potentially useful way. To be a good point of departure for the behavior change support process, the problem definition must be as specific as possible. For example, a problem definition of "too much snacking" is much better than "cannot stick to my diet," and "continual snacking after dinner" is better still. This is a problem that patient and clinician can work on together. This strategy also avoids the tendency for patients to "catastrophize" their problems, portraying them as ubiquitous and overwhelming. In spite of these catastrophic portrayals, patients' self-care problems are often rather confined (38). For example, the "snacking" patient may do well with meal portions.

Collaborative goal setting

Research has shown that intentions are major determinants of self-care behavior (39,40). Goal setting, a procedure for translating patients' self-management and behavior change intentions into goals, is a common behavioral intervention and contributes to behavior change (41,42). The goals that are set should be:

- specific: based on concrete actions (e.g., not snacking after dinner) rather than values (e.g., eating healthy)
- measurable: how much, how often (e.g., walk half an hour three times a week)
- action oriented: address behavior (e.g., exercise) rather than physiology (e.g., losing weight)
- realistic but challenging: not so difficult that patients become discouraged or so easy to reach that they provide no sense of accomplishment

The clinician's role in this process is to help patients identify a first step toward improved self-care—clinicians may want to point out that additional change may be desired, but it is important to focus on first steps in order to maximize the likelihood that behavior change will be initiated.

Collaborative problem solving

Achieving one's goals requires deciding how to solve problems in achieving those goals (43). Problem-solving ability is associated with improved health outcomes, and problem-solving interventions are often effective in improving health outcomes (30,44). Problem solving involves a broad range of activities; in this context, we highlight the process that patients must engage in to attain their behavior change goals, specifically those involved in dealing with the barriers to change.

Identify barriers to goal attainment. Barriers are among the most important determinants of (not) attaining goals (45,46). Barriers (16) include:

- cognitions, e.g., beliefs that treatments are not effective
- emotions, e.g., lack of self-efficacy
- social networks, e.g., lack of support
- resources, e.g., lack of time or money
- physical environment, e.g., lack of facilities

It is important to identify not only the barriers but also how/why they represent obstacles to success. This will enhance the ability to develop strategies for addressing the barriers.

Formulate strategies to achieve the goal. In this stage, the patient must decide how to achieve behavior change. Patients need help in thinking about how to make the desired change. Again, consistent with the patient-centered approach, clinicians should ask patients questions so that they can formulate and consider alternatives. Patients need help planning ways to overcome identified barriers to success and deciding how to reproduce prior successes. Overcoming barriers involves strategies that are proactive (trying to eliminate barriers in advance) and reactive (what to do if barriers present themselves). Patients need strategies for each barrier they identify as significant.

If a patient has had success in the past dealing with a problematic behavior, then it is possible to build upon this success, increasing the frequency with which it occurs. Note that there is a subtle difference

between what we have suggested and identifying situations in which the problem occurs ("failures"). Focusing on success has the benefit of enhancing diabetes self-efficacy. Self-efficacy—confidence in one's ability to perform health behaviors—increases the performance of those behaviors (45,47,48), and interventions to improve diabetes self-management through enhanced self-efficacy generally have positive results (49).

Contracting for change

Commitment to specific goals and strategies, including when the patient will start, should be made during this step. It is generally useful to make an explicit written agreement, sometimes called a "behavioral contract" (31,50), on what the patient (and clinician) will do. The point of the contract is not that it is enforceable but rather that it makes responsibilities explicit. The patient should receive a copy of the contract so it can act as a reminder.

Track outcomes. Patients should be encouraged to keep a written record of successes and lapses, as well as reasons why each occurred (to identify success and barriers to success). A sometimes unanticipated benefit of behavioral self-monitoring is that it increases vigilance and interest in goal attainment, which can facilitate behavior change (7).

Patients should be asked to review their monitoring records periodically and to discuss progress at each meeting with the clinician. When feasible, patients should be asked to contact the clinician to report how they are doing between visits, especially if the next scheduled contact is months away.

When behavior change does not meet expectations, patient and clinician should discuss whether the chosen goal-attainment strategy needs to be applied more rigorously, modified, or abandoned (probably in that order). Alternative goal-attainment strategies should be considered if the original one is to be abandoned. The clinician will then need to lead the patient through another cycle of the behavior change support process from that point.

Rewarding success. Rewards for achieving various levels of success can serve as incentive (7). These rewards should be something pleasant (44) but not to the opposition of the success (i.e., overeating should not be the reward for not overeating). Explicit criteria for receiving rewards should be stated in the written contract.

Continuing support

Research demonstrates that long-term interventions are more effective in diabetes than short-term interventions (24). This is to be expected in dealing with health conditions that are chronic rather than acute (51,52). Thus, it is important to plan for relapse prevention (53) because everyone lapses, i.e., patients will experience occasions during which their self-care behavior reverts to a suboptimal level (54). Most important is preparing patients for how to handle lapses—recognizing that when a lapse occurs, the key to avoiding demoralization and relapse is to reestablish the self-care regimen. Helping patients identify coping resources for relapse prevention, including positive self-reinforcements (see EMOTIONAL SUPPORT), is essential.

EMOTIONAL SUPPORT INTERVENTIONS

— A review of the use of coping strategies in behavioral/psychosocial interventions revealed that problem-focused interventions are more common than emotion-focused interventions (7). Research suggests that most clinicians know that emotional distress is common among their patients with diabetes and that this distress has a deleterious effect on diabetes outcomes, but fewer clinicians feel able to treat this distress (55). Nevertheless, the health consequences of emotional problems are clear-cut; they are associated with poorer self-care behavior, poorer metabolic outcomes, morbidity, mortality, functional limitations, and poorer quality of life (56–59), and the negative effects are not limited to diagnosable psychiatric disorders (60,61). Thus, addressing emotional problems is a key health care intervention even if diabetes self-care is adequate, and all clinicians should be able to (62):

1. Identify patients who are suffering from diabetes-related distress.
2. Apply effective treatments to relieve diabetes-related distress.
3. Identify patients who are suffering from psychiatric disorders.
4. Refer patients for specialized mental health care when appropriate.

As with the behavior change support process, the emotional support process is a step-by-step approach, making it easy to implement. It is generally best to start with interventions that can be implemented during regular visits before considering more intensive interventions, which may require referral to a behavioral/psychosocial specialist. Of course, symptoms may be so severe that the clinician should move directly to step 3 or 4 (above).

Identifying patients who suffer from diabetes distress

Diabetes-related distress is associated with less active self-care (63–65); therefore, one sign that patients may be distressed is an unwillingness or inability to engage in active self-management despite recognition of the need for change. Patients sometimes spontaneously express their diabetes-related distress, often in terms of demoralization about their ability to manage their diabetes. Patients who are distressed can be identified by asking the following questions designed to assess specific sources of distress as well as the intensity of the distress:

- Are you having trouble accepting your diabetes?
- Do you feel overwhelmed or burned out by the demands of diabetes management?
- Do you get the support you need from your family for diabetes management?
- Do you worry about getting diabetes complications?

The 20-item PAID (Problem Areas in Diabetes) questionnaire can be used to formally assess diabetes distress (63–65). Most patients can complete the PAID questionnaire in less than 5 min, and the results can be obtained in less than 2 min; therefore, patients and clinicians can complete the questionnaire and discuss the results at the same visit.

Primary interventions to alleviate diabetes-related distress

The behavior change support process discussed above provides an important way to help overcome diabetes-related distress because it incorporates strategies specifically chosen to foster a specific outcome. However, some patients may not be able to increase self-care efforts due to diabetes-related distress, indicating a need for intervention to support emotional coping.

Helping patients recognize the power of "self-talk" (what they say to themselves) can enhance emotion-focused coping and is the foundation of the preferred approach for dealing with emotional distress, termed cognitive behavioral therapy (CBT). CBT is designed to help people identify the negative, usually unrealistic, thoughts that lead to distress, diminished

motivation, and less-active self-care (e.g., "I'll never be able to do anything right."). CBT also helps patients find more positive realistic perspectives on diabetes-related problems and practice and apply the new perspective, thus relieving distress, enhancing motivation, and encouraging more active self-care. The principles of CBT are straightforward, and clinicians can incorporate strategies based on these principles into their work with patients (66). Interventions involving CBT-based approaches have produced positive outcomes (67–69).

CBT-based interventions can be integrated into the behavior change support process discussed above and can be implemented even when change in self-care behavior is not an issue. Each intervention targets a specific source of diabetes distress; the clinician should apply the intervention(s) that address the patient's most problematic source(s) of distress (i.e., lack of confidence regarding self-care, unrealistic expectations, or lack of motivation to change behavior).

Enhancing diabetes-specific self-efficacy. Self-efficacy or a sense of mastery is associated with lower depression (70,71) and is therefore a suitable target for intervention. A useful technique for enhancing self-efficacy is focusing on patients' self-management successes, especially on those occasions when patients succeed in situations that are most often problematic (see step 3 of the behavior change support process above). Helping patients identify their self-care successes can activate a positive cycle of optimism, activism, and further success.

Encouraging realistic expectations. We noted that setting realistic goals is a key element of the behavior change support process. Similarly, being realistic about self-care expectations is a key emotion-focused coping skill (41,72). Unrealistic expectations (e.g., expecting to never miss daily exercise or never overeat) set patients up to perceive the results of their efforts as failure, which can initiate a cycle of guilt, self-blame, demoralization, and further failure. To counter these negative effects, patients should be encouraged to be realistic about their goals and to focus on the big picture. Clinicians should emphasize the fact that a "slip" is normal and no reason to become discouraged; the key is to renew one's efforts to get back on track.

Enhancing motivation. Diabetes management is dependent on patient motivation, and motivational interviewing (19) can be used to enhance motivation for diabetes self-care (73,74). This technique helps to identify and reinforce how important changing the behavior is to the patient and the benefits that the patient anticipates for making a change. Clinicians can play an active role in summarizing the patient's reflections on the pros and cons of making a change (emphasizing the pros).

Identifying psychiatric disorders

If interventions designed to relieve diabetes-related distress are not effective, the patient might be suffering from a psychiatric disorder. In patients with diabetes, depression is among the most common psychiatric disorders and also among the disorders with the clearest documented impact on diabetes outcomes. Patients with diabetes who suffer from other psychiatric disorders (e.g., clinical eating and anxiety disorders) often also suffer from depression (75,76); therefore, diabetes clinicians should consider depression a key target for assessment and intervention.

Clinicians may not recognize depression in their patients with diabetes, or they may mistake depression for symptoms of diabetes-related distress or poor metabolic control (77,78). Using a standard protocol for diagnosing depression can facilitate an accurate diagnosis. Clinicians can identify patients likely to be clinically depressed by asking two questions about mood and anhedonia (according to Diagnostic and Statistical Manual of Mental Disorders, 4th edition [DSM-IV] cardinal diagnostic criteria [79]), as follows: "During the past 2 weeks, have you felt down, depressed, or hopeless?" and "During the past 2 weeks, have you lost interest or pleasure in doing things?" Positive responses to one or both questions should trigger questions about the remaining seven DSM-IV symptoms. The PHQ-9 (9-item Patient Health Questionnaire) (80) is useful for screening because the items match the DSM-IV diagnostic criteria for depression, and therefore the results provide both a measure of depression symptom severity and a categorical DSM-IV diagnosis.

Treating depression

Diabetes clinicians may be able to identify patients who are depressed, but many clinicians lack the time and other resources required to treat depression. In this situation, clinicians should consider referring patients for specialized mental health care. Whether diabetes clinicians refer depressed patients or provide antidepressant treatment themselves, some facts should be kept in mind.

Depression in patients with diabetes can be treated effectively with medication or counseling (44,67,81,82). All commonly prescribed antidepressant agents seem to be similarly effective when it comes to relieving depression; therefore, prescription decisions should be based on the individual patient's circumstances (e.g., prior experience with these agents, cost, and likely side-effects). In depressed patients who are not in good control of their diabetes, counseling (especially CBT) is the preferred treatment (either alone or in conjunction with medication). Medication may relieve the symptoms of depression, but this may not improve diabetes outcomes such as glycemic control (68,83). A course of CBT is generally of short duration, and once the patient's depression has been resolved, the diabetes care clinician may be able to provide the necessary emotional and behavior change support. Clinicians should be aware of the fact that depression is a chronic condition, with relapse both common and frequent (84). Thus, careful monitoring for relapse is imperative.

MULTIPLIER EFFECTS — We have assumed that the behavior change and emotional coping support processes are collaborative processes in which the clinician elicits and guides the patient's input. However, similar processes have been adapted to a coping skills training model in which patients are taught how to implement a behavior change or emotion-focused coping process on their own, without requiring health care resources (32,85). Patients can then implement that process whenever they need it.

Some diabetes education programs offer self-management training that incorporates the skills training approach described here. Documented benefits of these programs include improved emotional well-being, self-care behavior, and glycemic control (32,49,85,86).

Clinicians who cannot implement (or refer to) a full-scale coping skills training program can at a minimum explain the steps of the behavior change and emotion-focused coping support processes and encourage patients to practice using the processes in their own lives.

RESEARCH IMPLICATIONS — In our earlier review (87) of psychosocial issues and interventions in diabetes, we

Table 2—*Behavioral/psychosocial interventions: a step-by-step approach*

Intervention	Sample question
Problem-focused interventions	
1. Start with the patient's problem.	"What's the hardest thing about managing your diabetes?"
2. Specify the problem.	"Can you give me an example?"
3. Negotiate an appropriate goal.	"What is your goal for changing your self-care behavior?" "Is that realistic?"
4. Identify barriers to goal attainment.	"What could keep you from reaching your goal?" "Why would that keep you from reaching your goal?"
5. Formulate strategies to achieve the goal.	"How can you overcome that barrier to reaching your goal?" "How have you successfully dealt with that before; would that work now?"
6. Contract for change.	"What are your criteria for defining success?" "How will you reward yourself for success?"
7. Track outcomes.	"How will you keep track of your efforts?"
8. Provide ongoing support.	"What will you do if you slip in your efforts to reach your goal; what can I do to help?"
Emotion-focused interventions	
9. Identify diabetes distress.	"Do you feel overwhelmed by diabetes?"
10. Alleviate diabetes distress.	"What are you saying to yourself when you deal successfully/unsuccessfully with a diabetes-related challenge?"
11. Identify depression.	"In the past 2 weeks have you felt depressed or lost interest or pleasure in things?"
12. Treat disorder or refer for treatment.	"Would you like to talk to someone who could help you resolve these problems?"

found the research foundation to be less than we had hoped. In the 15 years since that review, the field has yet to resolve these research gaps. The recommendations in this article are based on available research and clinical experience, but critical propositions from various theoretical models have not been subjected to rigorous empirical testing. Studies performed by proponents of various theories are claimed to provide support for a theory, while often they merely demonstrate that some intervention is better than nothing (88). Future research needs to address fundamental theoretical propositions. For example, is it more efficacious to help patients change the behaviors the patients themselves want to change (as the Empowerment Model proposes) or to change the behaviors that the clinicians judge to be more important and critical to the patients' care? Is identifying the stage of change and customizing treatment to that stage (as the Transtheoretical Model proposes) more resource efficient and/or efficacious than providing a standardized, broad-spectrum intervention?

The field would also benefit from examination of more specific questions. For example, while the efficacy of goal setting is generally accepted, the question of whether it is better to formulate easily achievable goals or more challenging goals remains unresolved. Common sense suggests that easy goals are best, but theory suggests that more difficult goals will lead to more behavior change and better outcomes, at least until the goals become impossible to attain (89).

We also need more research that integrates problem-focused and emotion-focused interventions. Are behavior change interventions less effective among individuals who are psychologically distressed, or are some interventions better suited for such individuals? Does focusing cognitive-behavioral interventions for distress on diabetes-specific issues produce better diabetes outcomes (e.g., self-care, glycemic control) and/or mental health outcomes (e.g., depression symptoms) than focusing on more generic life issues? Does the efficacy of these different foci depend on the patients' perceptions of their own problems?

Finally, we need more studies addressing the additive and/or synergistic effects of our interventions. This includes combinations of the 5C interventions, as well as cross-domain (emotion-focused and problem-focused) interventions. The overarching question is how we should distribute our efforts across the set of validated interventions.

CONCLUSIONS — The strategies described here are consistent with a number of behavioral theories and models. They are practical and can be implemented within the context of standard diabetes care visits. They can work effectively with diabetes patients, as well as patients without diabetes who are struggling with living a healthy lifestyle. The use of these strategies requires skill, but these skills can be acquired by any diabetes care provider who is appropriately motivated. A simplified version of the steps to implement this process is provided in Table 2. Asking questions and helping patients to work through their issues can enable diabetes care clinicians to improve outcomes with relatively little consumption of resources.

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