Stages of Change and Eating Behaviors

Issues on categorizing

The concept that one size fits all or even that one size is always appropriate for each individual at all times is discounted in the research presented by Vallis et al. (1) in this issue of Diabetes Care. Often, the clinician’s short-sighted view of compliance to diet or other medical regimens is too simplistic. It fails to include the nuances of personal behavior that derail perfect adherence. This article includes research that more carefully describes human behavior related to stages of change. Important aspects of willingness to change are correlated with sex, age, marital status, BMI, diabetes education, quality of life, and social support.

The article by Vallis et al. provides an assessment of dietary change and the transtheoretical model. It provides added research on the applicability of this model to dietary counseling. The study design is a multifactorial split-plot with two randomized between-subject factors: treatment and usual care. Results focus on medically treated participants with type 2 diabetes in the treatment arm of the study. In this group, 75% of women were in the preparation stage compared with 51.8% for men. Those study participants who were married were in more advanced stages of change. Older people were more likely to be in the action phase. BMI was highest for those in contemplation and significantly lower in precontemplation and maintenance. Looking at health care use, those study participants with type 2 diabetes on medication and in the action stage were more likely to have participated in diabetes education. Quality of life was highest for study participants in maintenance and lowest for those in the action stage. This was rationalized by the authors stating that the action stage is a time of transition and may interfere with quality of life. Social support was highest for those in contemplation and lowest for those in action stage. The authors suggest that when the individual is actively thinking about change but has not yet begun change, support is easy to give. Also, the person in the action stage may be seen as having fixed the problem and possibly needing less support. Those in contemplation are more likely to seek out and accept support. The percentage of calories from fat decreased in action and maintenance significantly compared with preaction stages. Vegetable intake was significantly lower in all preaction stages. Daily fruit servings increased across stages with significantly lower servings in precontemplation or preparation. This provides support for the staging model when dealing with changes in eating behavior.

The authors of this manuscript caution against overinterpretation of this data. The small sample size necessitates additional research in which trends using this study data are identified.

Study design factors are very important when reviewing data involving stages of change and dietary patterns. Both Greene et al. (2) and Kristal et al. (3) discuss problems that arise when the stages of change construct is used in conjunction with dietary behavior. Measuring an addictive behavior such as smoking is nonambiguous in terms of definition and measurement. For example, a simple question might be, “How many cigarettes have you smoked in the past 24 h?” Defining dietary changes pose many problems that are not associated with this addictive behavior.

Some researchers (2,4,5) have proposed using an individual’s perception of his or her diet as a means of classifying stages of change. For example, “Do you limit the amount of high fat foods you eat?”, “How high in fat is your typical diet?”, and “Do you consistently avoid foods high in fat?” Other investigators have focused on a behavioral criterion based on an independent measure of nutrient intake (2,6,7). For example only subjects who meet the cutoff point (<30% of calories from fat) can be in the action or maintenance stage.

The rationale for using nutrient intake as a criterion is based on research (8) showing that there is a great difference between what a person perceives as a dietary fat intake and the actual dietary intake. An individual’s ability to relate dietary intake can be affected by level of education relative to diet, i.e., understanding the grams of dietary fat in foods and translating that to percent of calories coming from fat. The majority of non-educated and even educated persons have difficulty describing percent of calories from fat as it relates to their diets. Therefore, a person might believe that his or her diet is low in fat and be classified into the action phase, but if the diet is actually high in fat, the stage designation may be wrong. The resulting problem is that the person will not receive the appropriate stage-matched intervention.

In practice, Kristal et al. (3) presents two problems when using nutrient intake as criteria to define stages of change. One relates to methodology and the second to masking of clinically important changes when patients do not meet established nutrient criteria.

Methodologic errors are illustrated in research by Greene et al. (2), where he compares self-rated diet (“consistently avoid high-fat foods”) and nutrient intake (<30% of calories from fat) data when categorizing a subject in the action or maintenance stage. He found that 60% of his study participants fell into the action or maintenance stage using a self-rated diet. This is compared with only 20% when nutrient intake is used as the criteria.

The second problem might involve a person who has made extreme progress but does not meet the criterion for nutrient intake. Consider, for example, a patient who has gone from eating 45–32% of calories from fat and has increased fruits and vegetables from one to four servings. This person has consistently followed this new healthier pattern, feels confident that it will continue, and does not wish to make further changes. What stage is this person in: precontemplation, preparation, or maintenance? Certainly a change in fat from 45 to 32% is clinically significant, as is the fourfold increase in fruit and vegetable intake. However,
some might classify this study participant as a failure because the cutoff for defining maintenance (<30% of calories from fat and five servings of fruits and vegetables/day) was not met. This shows that classifying stages of change by nutrient criterion can be misleading and confusing.

In this research, Vallis et al. have used a combination of both perceived and actual diet in accordance with suggestions by Lechner et al. (7) and Auld et al. (9).

Finally, this article provides application-oriented answers to questions about the transtheoretical model. For clinicians using this model, it is helpful to see data on the stage most difficult to deal with “precontemplation” or “not ready to change” as some have labeled this stage (10,11).

The authors indicate that precontemplators are a heterogeneous group. The suggested solution to this problem is to individually tailor interventions. This may mean that the solution to the dilemma of whether to counsel in groups or individually lies in stage identification. When a precontemplator is identified, this stage may require more one-on-one attention. Once the individual progresses to the action stage, group counseling may be appropriate.

In summary, this study provides trends that assist clinicians in applying the transtheoretical model to individual and group counseling. As indicated by the author, the appropriate next step is to increase the sample size to more clearly identify the effect of staging on eating behaviors and important adherence factors, such as age, sex, BMI, etc.

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References
2. Greene GW, Rossi S, Reed GR, Willey C, Prochaska JO: Stages of change for reducing dietary fat to 30% of energy or less. J Am Diet Assoc 94:1105–1110, 1994