

Stages of Change

John C. Norcross,¹ Paul M. Krebs,² and James O. Prochaska³

¹*University of Scranton*

²*New York University and VA New York Harbor Healthcare System*

³*University of Rhode Island*

The transtheoretical model, in general, and the stages of change, in particular, have proven useful in adapting or tailoring treatment to the individual. We define the stages and processes of change and then review previous meta-analyses on their interrelationship. We report an original meta-analysis of 39 studies, encompassing 8,238 psychotherapy patients, to assess the ability of stages of change and related readiness measures to predict psychotherapy outcomes. Clinically significant effect sizes were found for the association between stage of change and psychotherapy outcomes ($d = .46$); the amount of progress clients make during treatment tends to be a function of their pretreatment stage of change. We examine potential moderators in effect size by study outcome, patient characteristics, treatment features, and diagnosis. We also review the large volume of behavioral health research, but scant psychotherapy research, that demonstrates the efficacy of matching treatment to the patient's stage of change. Limitations of the extant research are noted, and practice recommendations are advanced. © 2010 Wiley Periodicals, Inc. *J Clin Psychol*: In Session 67:1–12, 2011.

Keywords: stage of change; transtheoretical model; therapy relationship; tailoring treatment; meta-analysis; treatment adaptation

In the transtheoretical model, behavior change is conceptualized as a process that unfolds over time and involves progression through a series of five stages: precontemplation, contemplation, preparation, action, and maintenance. Although the stages were initially and extensively applied to changing health behaviors, this model has also proven useful in conceptualizing and guiding the change that occurs in psychotherapy.

This article reviews the voluminous research evidence on the stages of change as applied to psychotherapy. We begin by defining the stages of change and the frequent means of measuring them. We summarize previous meta-analyses on the stages, the processes of change, and the efficacy of stage matching in behavioral health care. We then present an original meta-analysis intended to address two aims: to assess the ability of stages of change and related readiness measures to predict psychotherapy outcomes, and to assess the outcomes from psychotherapy studies that matched treatment to specific stages. The article concludes with recommendations for therapy practices predicated on these research findings.

Definitions and Measures

Stages of Change

The stages represent a period of time as well as a set of tasks needed for movement to the next stage. Although the time an individual spends in each stage may vary, the tasks to be accomplished are assumed to be invariant. For each stage of change, different change processes and relational stances produce optimal progress.

This article is adapted, by special permission of Oxford University Press, from a chapter of the same title by the same authors in J.C. Norcross (Ed.), 2011, *Psychotherapy Relationships That Work* (2nd ed.). New York: Oxford University Press. The book project was cosponsored by the APA Division of Clinical Psychology and the APA Division of Psychotherapy.

Correspondence concerning this article should be addressed to: John C. Norcross, Department of Psychology, University of Scranton, Scranton, PA 18510-4596; e-mail: norcross@scranton.edu

Precontemplation is the stage in which there is no intention to change behavior in the foreseeable future. Most patients in this stage are unaware or underaware of their problems. Families, friends, neighbors or employees, however, are often well aware that the precontemplators suffer from the problems.

Contemplation is the stage in which patients are aware that a problem exists and are seriously thinking about overcoming it but have not yet made a commitment to take action. Contemplators struggle with their positive evaluations of their dysfunctional behavior and the amount of effort, energy, and loss it will cost to overcome it.

Preparation is the stage in which individuals are intending to take action in the next month and are reporting some small behavioral changes (“baby steps”). Although they have made some reductions in their problem behaviors, patients in the preparation stage have not yet reached a criterion for effective action.

Action is the stage in which individuals modify their behavior, experiences, and/or environment to overcome their problems. Action involves the most overt behavioral changes and requires considerable commitment of time and energy. Individuals are classified in the action stage if they have successfully altered the dysfunctional behavior for a period from 1 day to 6 months.

Maintenance is the stage in which people work to prevent relapse and consolidate the gains attained during action. This stage extends from 6 months to an indeterminate period past the initial action. Remaining free of the problem and/or consistently engaging in a new incompatible behavior for more than 6 months are the criteria for the maintenance stage.

Processes of Change

The stages of change represent *when* people change; the processes of change entail *how* people change. Change processes are overt and covert activities that individuals engage in when they attempt to modify problem behaviors. Each process is a broad category that encompasses multiple techniques, methods, and relationship stances traditionally associated with disparate theoretical orientations.

The processes of change represent an intermediate level of abstraction between metatheoretical assumptions and specific techniques spawned by those theories. Although there are 400 plus ostensibly different psychotherapies, we have identified only 8 to 10 different common processes of change based on principal components analysis (Prochaska & DiClemente, 1983). A common and finite set of change processes has been repeatedly identified across diverse disorders (Prochaska, DiClemente, & Velicer, 1985).

The transtheoretical model posits that the processes of change are differentially effective in certain stages of change. In general terms, change processes traditionally associated with the experiential, cognitive, and psychoanalytic persuasions are most useful during the earlier precontemplation and contemplation stages. Change processes traditionally associated with the existential and behavioral traditions, by contrast, are most useful during action and maintenance. For instance, consciousness raising is used in the earlier stages of change to help clients progress from precontemplation to contemplation. Focus on this process helps clients to increase their awareness of the advantages of changing and the multiple benefits of psychotherapy. Similarly, the processes of dramatic relief (emotional arousal), such as anticipatory grieving and facing the fear, guilt, or regret that would come from not changing, and self-reevaluation, which encourages clients to think of positive images to improve and envision how they could feel about themselves if they enacted change, are used to help patients increase their motivation for change.

In the later stages of change, clients can employ counterconditioning (response substitution) as they replace healthier behaviors for their problem behaviors. This process includes the classic reciprocal inhibition methods: assertion to counter passivity, relaxation to replace anxiety, cognitive substitutions instead of negative thinking, and exposure to counter avoidance. Reinforcement management can also be used to help patients establish self-reward schedules to support attainment of their goals.

In sum, the psychotherapist's relational stance at different stages can be characterized as follows: With patients in precontemplation, often the role is like that of a *nurturing parent*, who joins with a resistant and defensive youngster who is both drawn to and repelled by the prospects of becoming more independent. With clients in contemplation, the role is akin to a *Socratic teacher*, who encourages clients to achieve their own insights into their condition. With clients who are in the preparation stage, the stance is more like that of an *experienced coach*, who has been through many crucial matches and can provide a fine game plan or can review the participant's own plan. With clients who are progressing into action and maintenance, the psychotherapist becomes more of a *consultant*, who is available to provide expert advice and support when action is not progressing smoothly. As termination approaches in lengthier treatment, the therapist is consulted less and less often as the client experiences greater autonomy and ability to live free from previously disabling problems.

Measures

Providing stage-matched therapy requires reliable and valid indicators of a client's stage of change. The most frequently used measure in psychotherapy research studies is the University of Rhode Island Change Assessment (URICA; McConaughy, DiClemente, Prochaska, & Velicer, 1989). This 32-item questionnaire yields separate scores on four continuous scales: precontemplation, contemplation, action, and maintenance (precontemplators score high on both the contemplation and the action scales).

The Stages of Change and Treatment Eagerness Scales (SOCRATES) was developed for measuring readiness for change with regard to problem drinking as an alternate measure to the URICA (Miller & Tonigan, 1996). This 19-item measure produces three continuous scales: Ambivalence, Recognition, and Taking Steps, which are considered to represent continuously distributed motivational processes. The SOCRATES has been found to be related to quit attempts for smoking cessation (DiClemente et al., 1991), alcohol use (Isenhardt, 1997; Zhang, Harmon, Werkner, & McCormick, 2004), and drug use (Henderson, Saules, & Galen, 2004).

In fewer research studies, but more frequently in clinical practice, the stages are measured using a series of questions that result in a discrete categorization. A therapist asks if the individual is seriously intending to change the problem in the near future, typically within the next 6 months. If not, they are classified as precontemplators. Clients who state that they are seriously considering changing the problem behavior in the next 6 months are classified as contemplators. Those intending to take action in the next month are in the preparation stage. Patients who state that they are currently changing their problem are in the action stage.

Previous Meta-Analyses

Empirical research on the stages of change has taken a number of tacks over the past 30 years (for reviews, see Prochaska et al., 2001; Prochaska & Norcross, 2010), resulting in a vast literature. In this section, we review the results of earlier meta-analyses on the integration of the stages and processes of change and on the efficacy of stage matching in behavioral change.

Years of research in behavioral medicine and psychotherapy converge in showing that different processes of change are differentially effective in certain stages of change. Rosen (2000) performed a meta-analysis of 47 cross-sectional studies examining the relations of the stages and the processes of change. The studies involved smoking, substance abuse, exercise, diet, and psychotherapy. The mean effect sizes (*d*) were approximately .70 for variation in cognitive-affective processes by stage and .80 for variation in behavioral processes by stage, both moderate and large effects. Effect sizes for stages by processes did not vary significantly by the problem treated. For the five studies that examined the change processes in psychotherapy, behavioral processes peaked in Action, while cognitive-affective processes peaked in Contemplation or Preparation. Of particular interest was the finding that "use of helping relationships was strongly related to stages in studies of psychotherapy" (Rosen, 2000, p. 601).

Large numbers of psychosocial treatments have been tailored to stage of change or readiness for change. These have primarily been population-based studies delivered via

computer, mail, or phone, with a focus on health behavior change. Such interventions have assessed and provided specific feedback by stage of change and other constructs, such as self-efficacy. Results of these studies clearly show the effectiveness of tailoring or matching to the patient's stage of change (Dijkstra, Conijn, & de Vries, 2006; Prochaska, Velicer et al., 2005).

A recent meta-analysis of 87 prospective studies found that tailoring interventions results in enhanced treatment effects (Krebs, Prochaska, & Rossi, in press). The mean effect size of $d = .18$ (95% confidence interval [CI] = .16–.20) represents a 39% increase (odds ratio [OR] = 1.39) over the assessment or minimal care conditions with which the interventions were compared and constitutes a medium-size effect for population-based interventions (Rossi, 2002).

This meta-analysis was focused on health behaviors, however, and did not include face-to-face psychotherapy nor address the disorders most commonly treated by mental health professionals. Thus, we undertook a new meta-analysis specifically focusing on the stages of change in psychotherapy.

Meta-Analytic Review

Search Strategy and Criteria

A combination of search methods was used to locate all published and in-press studies that matched psychotherapy to stage of change or that employed a measure of readiness for change to predict outcomes after a course of treatment. PsycINFO and PubMed were searched for studies indicating reference to psychotherapy and stages of change, readiness, and motivation as well as for instruments used to measure these constructs (e.g. URICA, SOCRATES, Contemplation Ladder). To locate studies that may have employed similar techniques, we also conducted a forward search for articles that cited identified studies, examined reference lists from published studies, and searched for articles published by authors of studies deemed for inclusion.

Studies selected for analysis met the following criteria: (a) studies reported results of behavioral/psychological face-to-face treatment; (b) treatment was provided by mental health professionals; (c) patients had a DSM-III or IV diagnosis; (d) treatments consisted of at least three group or individual sessions; (e) readiness to change measured prior to treatment was used to tailor treatment or as a predictor of treatment outcome; and (f) sufficient statistical information was available to calculate an effect size.

Effect Size Calculation

The results were analyzed using the Comprehensive Meta-Analysis software package (Biostat, 2006). Effect sizes were calculated using the standardized mean difference (Cohen's d). Results reported as correlations (r), mean differences (F or t), or tests of variance (X^2) were transformed to d (Lipsey & Wilson, 2001). Each obtained effect size estimate was weighted by the inverse of the variance of the estimate, which gives greater weight to studies with more reliable estimates (for the most part, studies with larger sample sizes). To ensure statistical independence of outcomes, where studies reported more than one outcome (e.g. substance use and treatment dropout), we included a mean effect size per study for calculating the overall mean effect. We employed a random effects variance estimation model, which assumes both study-level error and variability among studies because of sampling and enables generalization to a population of studies.

Variability of the random effects variance component was tested with the Q test, the significance of which indicates variability among the effect size of the sampled studies and suggests presence of factors (i.e. moderators) that could explain this variability. Categorical moderators were examined using a statistical test for meta-analysis that employs weighted data and compares within and between groups heterogeneity using the Q statistic as employed by the Comprehensive Meta-Analysis software package (Biostat, 2006). A sample size of 10 or more studies is necessary to provide sufficient statistical power for detecting differences between groups (Lipsey & Wilson, 2001). Continuous moderators were examined using

meta-regression techniques, which correct variance estimates for sample size. The significant Q test for our meta-analysis indicated that there was sufficient variability among the effect sizes of the studies to look for moderators that could explain this variability.

Publication bias, the tendency for significant study results to get reported more often than nonsignificant results, can upwardly skew effect size estimates in meta-analysis. Mean effects were assessed for degree of publication bias using two techniques: Fail safe N and trim and fill. Fail-safe N calculates the number of unpublished studies with a null effect size needed to reduce the overall effect to nonsignificance. Trim and fill (Duval & Tweedie, 2000) assesses the symmetry of a plot of effect size by sample size (funnel plot) under the assumption that when publication bias exists, a disproportionate number of studies will fall to the bottom right of the plot.

Studies

The search yielded 1,686 references, the abstracts of which were reviewed for possible inclusion. Of these, 113 papers were chosen for full text review, and 39 studies met criteria and were included in the present analysis (See Norcross, Krebs, & Prochaska, 2011, for a full list of the studies.)

Table 1 summarizes attributes of the 39 studies, encompassing 8,238 psychotherapy patients. All studies reported data only from final follow-ups, which were mostly conducted immediately upon treatment completion. Thirteen studies were randomized controlled trials, while the remainder used a one-group pre-post design. Six studies concerned treatments for adolescents (aged 13–17 years), while the others focused on adults (aged 18+ years). Sample sizes ranged from 42 to 1,075, with an average of 211 participants at recruitment and a 77% retention rate at follow-up. Most samples ($k = 26$) comprised primarily White participants (>60%), four with primarily African American participants (>60%), and six studies recruited a racially mixed sample. The number of treatment sessions ranged from 4 to 28 with 12 being the modal number. Twelve studies reported using a treatment manual, with cognitive-behavioral therapy ($k = 19$) the most common theoretical orientation guiding treatment.

Results

Our first aim in the meta-analysis was to examine the impact of patients' pretreatment stage of change on treatment outcome. The 39 studies reported 71 separate outcomes. Results of the individual studies are summarized in Table 2.

The mean effect size was $d = .46$ with a 95% CI of .35 to .58 (range $-.20$ to 2.7), $Q(38) = 186.05$, $p < .001$. Analysis of publication bias suggested a fail safe N of 2,554. By convention, a d of .46 indicates a medium effect, demonstrating that the stages of change reliably predict outcomes in psychotherapy. That is, the amount of progress clients make during treatment tends to be a function of their pretreatment stage of change. For example, an intensive action-oriented and maintenance-oriented smoking cessation program for cardiac patients achieved success for 22% of precontemplators, 43% of the contemplators, and 76% of those in action or prepared for action at the start of the study were not smoking 6 months later (Ockene et al., 1992).

Our second aim was to assess the outcomes from psychotherapy studies that matched treatment to specific stages of change. Unfortunately, we located no controlled group studies meeting our inclusion criteria that matched psychotherapy to client stage or readiness. As a result, we could not perform that analysis.

A number of studies used in-person sessions and delivered treatment based on stage or readiness to change, but they did not meet inclusion criteria, in that treatment either was a single session, provided by medical staff (as opposed to a mental health professional), or focused on health behaviors, such as tobacco smoking, physical activity, or diabetes management (Champion et al., 2003; Chouinard & Robichaud-Ekstrand, 2007; Clark, Hampson, Avery, & Simpson, 2004; Patten et al., 2008; Van Sluijs, Van Poppel, Twisk, Brug, & Van Mechelen, 2005; Wiggers et al., 2005). The one study that intervened on psychiatric and

Table 1
Summary of Studies and Samples (k = 39) Included in the Meta-Analysis

Characteristic	<i>k</i>	%
Country		
United States	25	64
Canada	7	18
Australia	2	5
United Kingdom	2	5
Spain	2	5
Germany	1	3
Study design		
Single group pre-post	24	62
Randomized controlled trial	15	38
Patient age		
Adult (18+)	33	85
Adolescent (13–17)	6	15
Patient race/ethnicity		
White (>60% of sample)	26	67
Mix (none greater than 60% of sample)	6	15
African American (>60% of sample)	4	10
Data not reported	3	8
Treatment setting		
Outpatient	25	64
Inpatient	14	36
Treatment manual used	12	31
Number of Treatment Sessions		
<10	4	10
10–19	13	33
20+	4	10
Data not reported	17	44
Treatment orientation		
Cognitive-behavioral	19	49
12-step	4	10
Other	5	13
Data not reported	17	44
Readiness measure		
University of Rhode Island Change Assessment	27	69
Stages of Change Readiness and Treatment	5	13
Eagerness Scale (SOCRATES)		
Anorexia Stages of Change Questionnaire	2	5
Other	5	13

substance use diagnoses was not individually stage-tailored (James et al., 2004). All of the studies we did locate reported findings in support of stage matching treatments.

Moderators

The significant *Q* test for our meta-analysis indicated that there was considerable variability among the effect sizes of the studies, and thus we searched for moderators that could explain this variability. We conducted moderator analyses on the effect size for the stages of change for patient characteristics, treatment features, and diagnostic categories. We could not search for potential moderators in these 39 studies in the measures used to assess stages; more than 30 studies employed the University of Rhode Island Change Assessment (URICA; stages of change scale).

For patient characteristics, we found no statistically significant difference between adolescent and adult populations and race/ethnicity (all *ps* > .10). However, effect size was positively correlated with having a larger number of female participants (*p* = .02).

Table 2
Effect Sizes by Study

Study	Primary diagnosis	Readiness measure	N	d	SE	95% CI	
						Upper	Lower
Alexander and Morris, 2008	Domestic abuse	URICA	210	0.44	0.19	0.08	0.81
Ametller et al., 2005	Eating Disorder	Anorexia Stages of Change	70	0.34	0.12	0.10	0.58
Blanchard et al., 2003	Substance abuse	URICA	252	0.16	0.13	-0.10	0.42
Brodeur et al., 2008	Domestic abuse	URICA-DV	302	0.11	0.12	-0.12	0.34
Callaghan et al., 2005	Substance abuse	URICA	130	0.74	0.19	0.37	1.11
Callaghan et al., 2008 (Budney, 2000)	Substance abuse	URICA	60	0.37	0.41	-0.44	1.18
Callaghan et al., 2008 (Budney, 2006)	Substance abuse	URICA	90	0.62	0.29	0.05	1.20
Carpenter et al., 2002	Substance abuse	URICA	174	0.49	0.22	0.05	0.92
Chung and Maisto, 2009	Substance abuse	Contemplation Ladder	142	0.03	0.23	-0.43	0.49
Connors et al., 1998a	Alcohol abuse	URICA	682	0.49	0.08	0.34	0.65
Connors et al., 1998b	Alcohol abuse	URICA	465	0.52	0.10	0.33	0.70
Demmel et al., 2004	Alcohol abuse	SOCRATES	350	0.58	0.13	0.33	0.83
Derisley et al., 2000	General therapy	URICA	60	1.30	0.32	0.68	1.92
Dozois et al., 2004	Anxiety	URICA	81	0.34	0.24	-0.12	0.80
Eckhardt et al., 2008	Domestic abuse	URICA-DV	199	0.52	0.16	0.21	0.84
Geller et al., 2004	Eating disorder	RMI	60	0.78	0.35	0.10	1.47
Gossop et al., 2006	Substance abuse	SOCRATES	1,075	0.23	0.08	0.08	0.38
Haller et al., 2004	Substance abuse	URICA	75	0.87	0.26	0.36	1.38
Henderson et al., 2004	Substance abuse	URICA	96	0.63	0.22	0.20	1.06
Hewes and Janikowski, 1998	Alcohol abuse	SOCRATES	58	2.49	0.60	1.31	3.68
Hunt et al., 2006	PTSD	URICA	42	0.68	0.35	0.00	1.36
Isenhardt, 1997	Alcohol abuse	SOCRATES	125	0.69	0.19	0.32	1.07
Kerns et al., 2000	Pain management	Pain Stages of Change	68	0.24	0.10	0.05	0.44
Kinnaman et al., 2007	Alcohol abuse	URICA	120	-0.02	0.19	-0.39	0.34
Lewis et al., 2009	Depression	Stages of Change Q (Bellis)	332	0.30	0.12	0.08	0.53
Mitchell, 2006	Substance abuse	SOCRATES	357	0.71	0.11	0.49	0.93
Pantalon et al., 2002	Substance abuse	URICA	117	0.14	0.20	-0.25	0.52
Pantalon et al., 2003	Psychiatric inpatients	URICA	120	-0.20	0.09	-0.38	-0.02
Petry et al., 2005	Gambling disorder	URICA	234	0.70	0.16	0.38	1.01

Table 2
Continued

Study	Primary diagnosis	Readiness measure	N	d	SE	95% CI	
						Upper	Lower
Project Match Group, 1999	Alcohol abuse	URICA	806	0.28	0.07	0.14	0.42
Rooney et al., 2007	PTSD	URICA	50	0.63	0.31	0.03	1.23
Scott and Wolfe, 2003	Domestic abuse	URICA	194	0.63	0.21	0.23	1.04
Smith et al., 1995	General therapy	URICA	74	1.84	0.33	1.20	2.48
Soler et al., 2008	Borderline PD	URICA	60	0.54	0.61	-0.67	1.74
Stotts et al., 2003	Alcohol abuse	URICA	115	0.49	0.24	0.03	0.96
Tambling and Johnson, 2008	Relational problem	URICA	469	-0.09	0.13	-0.34	0.15
Treasure et al., 1999	Eating disorder	URICA	125	0.70	0.47	-0.22	1.61
Wade et al., 2009	Eating disorder	Anorexia Stages of Change	47	2.67	0.50	1.68	3.65
Willoughby et al., 1996	Alcohol abuse	URICA	152	-0.15	0.17	-0.49	0.18
Overall effect size				0.46	0.06	0.35	0.58

Note. SE = standard error; CI = confidence interval; URICA = University of Rhode Island Change Assessment; SOCRATES = Stages of Change Readiness and Treatment Eagerness Scale; RMI = Readiness and Motivation Interview; PTSD = posttraumatic stress disorder; PD = personality disorder.

For treatment features, we found no differences in effect size between inpatient and outpatient treatment settings, treatments that used a manual and those that did not, and the number of therapy sessions. However, for studies reporting primary theoretical orientation, 12-step programs had the highest effect size ($k = 4$, $d = .73$) as compared with cognitive-behavioral treatment ($k = 19$, $d = .39$) or other orientations ($k = 5$, $d = .24$; $p = .001$).

We also analyzed the effect size of the stages of change for particular diagnostic categories: addictions, eating disorders, and mood disorders. Fourteen studies predicted addiction outcomes using baseline readiness to change; the mean effect was $d = .37$ (95% CI = .23–.52, $p < .001$). Four studies assessed the relationship between baseline readiness to change and prediction of eating disorder outcomes; the mean effect size was $d = .99$ (95% CI = .24–1.74, $p < .001$). Seven studies assessed the relationship between baseline readiness to change and prediction of mood disorder symptoms; the mean effect size was $d = .45$ (95% CI = .19–.71, $p < .001$).

Limitations of the Research

Although more than 1,500 research studies have been conducted on the stages of change, few have directly and prospectively matched psychotherapy to the patient's stage of change. Rather, the available research concerns the predictive utility of the stages of change in terms of outcomes and dropouts, the differential use of the processes of change at various stages of change, and the relative efficacy of diverse forms of service delivery. Further, the majority of published research concerns health behaviors and addictive disorders, as contrasted with the wide range of Axis I disorders.

Summary and Therapeutic Practices

The results of this meta-analysis support the usefulness of stages of change in predicting important treatment outcome measures, such as symptom relief, premature dropout, and the working alliance. Stage of change assessment is straightforward and takes only a few minutes in the initial therapeutic encounter, yet it has vital implications for guiding treatment method and promoting therapy progress. Below is a brief outline of research-supported therapist behaviors that can enhance treatment outcomes.

- *Assess the client's stage of change.* Probably the most obvious and direct implication is to assess the stage of a client's readiness for change and to tailor treatment accordingly. In clinical practice, assessing stage of change typically entails a straightforward question: "Would you say you are not ready to change in the next 6 months (precontemplation), thinking about changing in the next 6 months (contemplation), thinking about changing in the next month (preparation) or have you already made some progress (action)?" The stages are problem specific, so the question will probably be asked several times for multidisordered patients.
- *Beware treating all patients as though they are in action.* Professionals frequently design excellent action-oriented treatments but then are disappointed when only a small percentage of clients seek that therapy or remain in therapy. The vast majority of patients are *not* in the action stage. Aggregating across studies and populations (Velicer et al., 1995), we estimate that 40% are in precontemplation, 40% in contemplation, and only 20% prepared for action. Thus, professionals offering only action-oriented programs are likely to underserve or misserve the majority of their target population. The therapeutic recommendation is to move from an action paradigm to a stage paradigm.
- *Set realistic goals by moving one stage at a time.* A goal for many patients, particularly in a time-limited managed care environment, is to set realistic goals, such as helping patients progress from precontemplation to contemplation. Such progress means that patients are changing if we view change as a process that unfolds over time, through a series of stages. Helping patients break out of the chronic, stuck phase of precontemplation constitutes treatment success, because it almost doubles the chances that patients

will take effective action in the next 6 months (Prochaska, Velicer, Prochaska, & Johnson, 2004).

- *Treat precontemplators gingerly.* Across every disorder that has been studied, people in precontemplation underestimate the pros of changing, overestimate the cons, and are not particularly conscious that they are making such evaluations (Hall & Rossi, 2008; Prochaska, 1994). If psychotherapists try to impose action on precontemplators, they are likely to drive them away, while attributing their lack of progress to clients' resistance (see Beutler et al., this issue). When this occurs, we find that it is often the therapists who are not ready or motivated to match their relationship and methods to clients' needs, and are resistant to trying new approaches to retaining more clients. Motivational interviewing (Miller & Rollnick, 2002) has incorporated these lessons into its philosophical spirit and its treatment methods with regard to "rolling with resistance."
- *Tailor the processes to the stages.* The research reliably demonstrates that patients optimally progress from precontemplation and contemplation into preparation by using consciousness raising, self-liberation, and dramatic relief/emotional arousal. Patients progress best from preparation to action and maintenance by using counterconditioning, stimulus control, and reinforcement management. To simplify: change processes traditionally associated with the insight or awareness therapies for the early stages, and change processes associated with the action therapies for the later stages.
- *Avoid mismatching stages and processes.* A person's stage of change provides prescriptive as well as prescriptive guidance on treatments of choice. We have observed two frequent mismatches (Prochaska, Norcross, & DiClemente, 1995). First, some therapists rely primarily on change processes most indicated for the contemplation stage—consciousness raising, self-reevaluation—while patients are moving into the action stage. They try to modify behaviors by focusing on increasing a patient's awareness alone, a common criticism of classical psychoanalysis, in that insight alone does not necessarily bring about behavior change. Second, other therapists rely primarily on change processes most indicated for the action stage—reinforcement management, stimulus control, and counterconditioning—without the requisite awareness, decision making, and readiness provided in the contemplation and preparation stages. Modifying behavior without awareness is a common criticism of radical behaviorism in that overt action without insight is likely to lead to temporary change.
- *Prescribe stage-matched relationships of choice as well as treatments of choice.* We conceptualize this practice, paralleling the notion of treatments of choice in terms of treatment methods, as offering "therapeutic relationships of choice" in terms of interpersonal stances (Norcross & Beutler, 1997). Once you know a patient's stage of change, then you will know which relationship stances to apply to help him or her progress to the next stage and eventually to maintenance. These relational matches, as reviewed earlier, entail a nurturing parent stance with a precontemplator, a Socratic teacher role with contemplator, an experienced coach with a patient in action, and then a consultant once in maintenance.
- *Practice integratively.* Psychotherapists moving with their patients through the stages of change over the course of treatment will probably employ relational stances and change processes traditionally emphasized by disparate systems of psychotherapy. That is, they will practice integratively (Norcross & Goldfried, 2005). Although some theorists insist that such integration is philosophically impossible, our research has consistently documented that psychotherapists can be remarkably effective in synthesizing powerful change processes across the stages (Prochaska & Norcross, 2010).
- *Anticipate recycling.* Most psychotherapy patients will recycle several times through the stages before achieving long-term maintenance. Accordingly, professionals and programs expecting people to progress linearly through the stages of change are likely to gather disappointing results. Be prepared to include relapse prevention in treatment, anticipate the probability of recycling patients, and try to minimize therapist guilt and patient shame over recycling (Prochaska, Norcross, & DiClemente, 2005).

Selected References and Recommended Readings

- Biostat. (2006). *Comprehensive Meta-Analysis*. Englewood, NJ.
- Champion, V., Maraj, M., Hui, S., Perkins, A.J., Tierney, W., & Menon, U. (2003). Comparison of tailored interventions to increase mammography screening in nonadherent older women. *Preventive Medicine: An International Journal Devoted to Practice and Theory*, 36(2), 150–158.
- Chouinard, M.C., & Robichaud-Ekstrand, S. (2007). Predictive value of the transtheoretical model to smoking cessation in hospitalized patients with cardiovascular disease. *European Journal of Cardiovascular Prevention and Rehabilitation*, 14(1), 51–58.
- Clark, M., Hampson, S.E., Avery, L., & Simpson, R. (2004). Effects of a tailored lifestyle self-management intervention in patients with Type 2 diabetes. *British Journal of Health Psychology*, 9(3), 365–379.
- DiClemente, C.C., Prochaska, J.O., Fairhurst, S.K., Velicer, W.F., Velasquez, M.M., & Rossi, J.S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology*, 59(2), 295–304.
- Dijkstra, A., Conijn, B., & de Vries, H. (2006). A match-mismatch test of a stage model of behaviour change in tobacco smoking. *Addiction*, 101(7), 1035–1043.
- Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, 56(2), 455–463.
- Hall, K.L., & Rossi, J.S. (2008). Meta-analytic examination of the strong and weak principles across 48 health behaviors. *Preventive Medicine*, 46(3), 266–274.
- Henderson, M.J., Saules, K.K., & Galen, L.W. (2004). The predictive validity of the University of Rhode Island Change Assessment questionnaire in a heroin-addicted polysubstance abuse sample. *Psychology of Addictive Behaviors*, 18(2), 106–112.
- Isenhart, C.E. (1997). Pretreatment readiness for change in male alcohol dependent subjects: Predictors of one-year follow-up status. *Journal of Studies on Alcohol*, 58(4), 351–357.
- James, W., Preston, N.J., Koh, G., Spencer, C., Kisely, S.R., & Castle, D.J. (2004). A group intervention which assists patients with dual diagnosis reduce their drug use: A randomized controlled trial. *Psychological Medicine*, 34(6), 983–990.
- Krebs, P., Prochaska, J.O., & Rossi, J.S. (in press). Defining what works in tailoring: A meta-analysis of computer-tailored interventions for cancer-preventive behavior change. *Preventive Medicine*.
- Lipsey, M., & Wilson, D.B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- McConaughy, E.A., DiClemente, C.C., Prochaska, J.O., & Velicer, W.F. (1989). Stages of change in psychotherapy: A follow-up report. *Psychotherapy*, 26(4), 494–503.
- Miller, W.R., & Rollnick, S. (2002). *Motivational interviewing*. New York: Guilford.
- Miller, W.R., & Tonigan, J.S. (1996). Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors*, 10(2), 81–89.
- Norcross, J.C., & Beutler, L.E. (1997). Determining the therapeutic relationship of choice in brief therapy. In J.N. Butcher (Ed.), *Objective psychological assessment in managed health care: A practitioner's guide*. New York: Oxford.
- Norcross, J.C., & Goldfried, M.R. (2005). *Handbook of psychotherapy integration*. (2nd ed.). New York: Oxford.
- Norcross, J.C., Krebs, P.M., & Prochaska, J.O. (2011). Stages of change. In J.C. Norcross (Ed.), *Psychotherapy relationships that work* (2nd ed.). New York: Oxford.
- Ockene, J., Kristeller, J.L., Goldberg, R., Ockene, I., Merriam, P., & Barrett, S. (1992). Smoking cessation and severity of disease: The Coronary Artery Smoking Intervention Study. *Health Psychology*, 11(2), 119–126.
- Patten, C.A., Decker, P.A., Dornelas, E.A., Barbagallo, J., Rock, E., & Offord, K.P. (2008). Changes in readiness to quit and self-efficacy among adolescents receiving a brief office intervention for smoking cessation. *Psychology, Health and Medicine*, 13(3), 326–336.
- Prochaska, J.O. (1994). Strong and weak principles for progressing from precontemplation to action on the basis of twelve problem behaviors. *Health Psychology*, 13(1), 47–51.
- Prochaska, J.O., & DiClemente, C.C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 51(3), 390–395.
- Prochaska, J.O., DiClemente, C.C., & Velicer, W. F. (1985). Predicting change in smoking status for self-changers. *Addictive Behaviors*, 10(4), 395–406.

- Prochaska, J.O., & Norcross, J.C. (2010). *Systems of psychotherapy: A transtheoretical analysis* (7th ed.). Pacific Grove, CA: Brooks/Cole.
- Prochaska, J.O., Norcross, J.C., & DiClemente, C.C. (1995). *Changing for good*. New York: Avon.
- Prochaska, J.O., Norcross, J.C., & DiClemente, C.C. (2005). *Stages of change: Prescriptive guidelines*. In G.P. Koocher, J.C. Norcross, & S.S. Hill (Eds.), *Psychologists' desk reference* (2nd ed.). New York: Oxford University Press.
- Prochaska, J.O., Redding, C.A., & Evers, K. (2001). The transtheoretical model and stages of change. In K. Glanz, F.M. Lewis, & B.K. Rimer (Eds.), *Health behavior and health education* (3rd ed.). CA: Jossey-Bass.
- Prochaska, J.O., Velicer, W.F., Prochaska, J.M., & Johnson, J.L. (2004). Size, consistency, and stability of stage effects for smoking cessation. *Addictive Behaviors*, 29(1), 207–213.
- Prochaska, J.O., Velicer, W.F., Redding, C.A., Rossi, J.S., Goldstein, M., DePue, J., et al. (2005). Stage-based expert systems to guide a population of primary care patients to quit smoking, eat healthier, prevent skin cancer and receive regular mammograms. *Preventive Medicine*, 41, 406–416.
- Rosen, C.S. (2000). Is the sequencing of change processes by stage consistent across health problems? A meta-analysis. *Health Psychology*, 19(6), 593–604.
- Rossi, J.S. (2002, October). Comparison of the use of significance testing and effect sizes in theory-based health promotion research. Paper presented at the 43rd annual meeting of the Society for Multivariate Experimental Psychology, Keystone, CO.
- Van Sluijs, E.M.F., Van Poppel, M.N.M., Twisk, J.W.R., Brug, J., & Van Mechelen, W. (2005). The positive effect on determinants of physical activity of a tailored, general practice-based physical activity intervention. *Health Education Research*, 20(3), 345–356.
- Velicer, W.F., Fava, J.L., Prochaska, J.O., Abrams, D.B., Emmons, K.M., & Pierce, J.P. (1995). Distribution of smokers by stage in three representative samples. *Preventive Medicine*, 24(4), 401–411.
- Wiggers, L.C.W., Oort, F.J., Dijkstra, A., De Haes, J.C.J.M., Legemate, D.A., & Smets, E.M.A. (2005). Cognitive changes in cardiovascular patients following a tailored behavioral smoking cessation intervention. *Preventive Medicine*, 40(6), 812–821.
- Zhang, A.Y., Harmon, J.A., Werkner, J., & McCormick, R.A. (2004). Impacts of motivation for change on the severity of alcohol use by patients with severe and persistent mental illness. *Journal of Studies on Alcohol*, 65(3), 392–397.