Changing for Life: Using the Stages of Change to Support the Recovery Process

James O. Prochaska, Ph.D.

Director and Professor
Cancer Prevention Research Center
University of Rhode Island

Founder
Pro-Change Behavior Systems, Inc.
Recovery from Mental and Substance Abuse Disorders: a voluntary and individually driven process of change through which individuals work to improve their own health and well-being, live a productive life, and welcome opportunities for growth.

• Recovery is holistic and exists on a continuum of improved health and wellness.

SAMSHA, 2011
Our working definition of recovery is the choice of life over death. Anything that manifests the will to live can be defined as recovery.
Stages of Change

PRECONTEMPLATION

PREPARATION

CONTEMPLATION

ACTION

MAINTENANCE

TERMINATION
By raising the possibility that recovery begins with experiences during active addiction, new types of interventions may be developed through which people may enter conscious, active recovery at earlier and earlier stages of change.”

Precontemplation:

Not Ready

Have no intention to start taking action in next 6 months
Characteristics of Precontemplation

1. Ignorance
2. Demoralization
3. Denial
• Recovery is based on respect
• Recovery is based on hope
Contemplation

Getting Ready

*Intend to start in next 6 months*
Characteristics of Contemplation

1. Doubt
2. Delay
Preparation

Ready

Practicing the behavior
Intend to start in next 30 days
Characteristics of Preparation

1. Fear of failure
2. Be prepared
Action

Recently Started to Change Overt Behavior

Consistently for less than 6 months
Action

• “Here I go!”

• Life is often exhilarating, sometimes terrifying. So is change.

• Learn the skills that work for you and get the support you need.
Action Characteristics

1. Most demanding
2. Most regressive
Maintenance

Has Overtly Changed Behavior

Consistently for 6 months or more
Maintenance Characteristics

1. Preventing relapse
2. Managing distress
Stages of Change
Termination: Sustaining goals for more than five years
Characteristics of Termination: Home Free

1. Full Confidence
2. No Temptation
Behavior Controls and Stages of Change

Precontemplation  Contemplation  Preparation  Action  Maintenance  Termination

Stimulus Control  Decisional Control  Rule Control  Stimulus Control
Engagement and Intervention Issues

• Reach
• Retain
• Progress
• Process
• Success
Programs have to communicate that they are tailored to needs of each patient:

1. Wherever you are at, we can work with that!
2. Traffic light: Red light not ready; Yellow light getting ready; Green light ready.
Proactive Engagement

• Proactive Engagement

• Communication Campaign

• Incentives
Proactive alone will not work

A. Kaiser example with smoking
Stage Profiles of Completers and Dropouts of Psychotherapy


*Psychotherapy, 36, 105-113.*
Stage Transitions

The pros and cons of changing across stages of change for 48 behaviors

Strong Principle of Progress:

Progression from Precontemplation to Action is a function of approximately one standard deviation increase in the Pros of a healthy behavior change.

$PC \rightarrow A \cong 1 \text{ S.D.} \uparrow \text{PROS}_H$

First Principle: Increase the Pros of Change

1. How much: One standard deviation
2. Increasing your Change IQ by 15 points
Weak Principle of Progress:

Progression from Precontemplation to Action is a function of approximately one-half of a standard deviation decrease in the Cons of a healthy behavior change.

\[ \text{PC} \rightarrow A \cong 0.5 \, \text{S.D.} \downarrow \text{CONS}_H \]

Second Principle: Decrease the Cons

1. How much: one-half standard deviation
2. Emphasize the pros twice as much as the cons.
Third Principle: A Positive Balance

1. When the balance goes negative: regress
2. When the balance goes positive: progress
Decisional Balance of Drug Addiction Treatment Across Stage

- **Pros**
- **Cons**

<table>
<thead>
<tr>
<th>Stage</th>
<th>T-Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PR</td>
<td></td>
</tr>
<tr>
<td>A/M</td>
<td></td>
</tr>
</tbody>
</table>
Perceived Coercion and Choice Over Participating In Drug Addiction Treatment Across Stage

![Graph showing T-Scores for Coercion and Choice across different stages of drug addiction treatment](image-url)
Programs have to increase the Pros

1. Medicare example
2. Health Plan example
When social controls (including incentives) are used, programs have to help transform social controls into self controls.

- Air Force example with smoking
Stages by Processes

Precontemplation ↔ Contemplation ↔ Preparation

Consciousness Raising
Dramatic Relief
Environmental Reevaluation

Self Reevaluation

Intervention Targeting and Tailoring

One Size Fits All

Targeted (Stage-Matched)

Tailored (Individualized)

Stage of Change

Pros & Cons
Self-Efficacy
Processes
Treatment Groups

1. Action-oriented Manuals
2. Stage-Matched Manuals
3. Stage-Matched Computers & Manuals
4. Counselors & Stage-Matched Computers
Gender

Point Prevalence Abstinence

Assessment (Month)

Male  Female

Proactive Cessation With Adolescents in Primary Care

Tailored Intervention                  Assessment Only

23.9%                                  11.4%

Proactive Cessation with Depressed Patients: Abstinence at 18 Months

Tailored Intervention + Assessment Only

24.6% 19.1%

Proactive Cessation with Patients Hospitalized for Mental Illness

<table>
<thead>
<tr>
<th>Tailored</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>8%</td>
</tr>
</tbody>
</table>
Recovery involves addressing and transcending discrimination, shame and stigma.
• Recovery should be supported by a welcoming and respectful community.

SAMSHA, 2011
Adding TTM-tailored Interventions to Midwife Counseling with Pregnant Smokers

Adding TTM-tailored interventions produced 8.2 times the impacts of midwife counseling alone

1. Increased Recruitment
2. Increased Retention
3. Increased Efficacy
4. Decreased Mis-reporting
5. Produced 8.2 times greater impacts

Percentage in Action/Maintenance for Stress Management

χ² significant (p < .001) at 6, 12, & 18 months (Pre-Action at Baseline Only)

OUTCOMES ARE FUNCTION OF

1. Stage effects
2. Severity effects
3. Treatment effects
4. Effort effects

Original Impact Equation

Impact = Reach X Efficacy

Impact = (5% Reach) X (30% Abstinence) = 1.5%

Impact = (75% reach) X (20% Abstinence) = 15%
New Impact Equation

Impact = Reach \times Efficacy \times (\sum \text{Behaviors Changed})
Costs per health condition and behavior and percentage of successful employees at long-term follow-up who participate in our programs

<table>
<thead>
<tr>
<th>Health Related Condition</th>
<th>Cost per Employee</th>
<th>Costs per 1,000 employees</th>
<th>% of long-term successes per 1,000 employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease</td>
<td>$6,000</td>
<td>$232,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Stress</td>
<td>$4,100</td>
<td>$2,700,000</td>
<td>65%</td>
</tr>
<tr>
<td>Smoking</td>
<td>$4,000</td>
<td>$880,000</td>
<td>25%</td>
</tr>
<tr>
<td>Diet Risk</td>
<td>$7,000</td>
<td>$2,000,000</td>
<td>45%</td>
</tr>
<tr>
<td>Exercise Risk</td>
<td>$3,800</td>
<td>$1,700,000</td>
<td>45%</td>
</tr>
<tr>
<td>Weight Risk</td>
<td>$3,900</td>
<td>$1,700,000</td>
<td>30%</td>
</tr>
<tr>
<td>Non-adherence: Statins</td>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>Non-adherence: Anti-</td>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>hypertensive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>$6,400</td>
<td>$1,900,000</td>
<td>70%</td>
</tr>
</tbody>
</table>

Dr. Alberto Colombi, Medical Director for PPG Industries
Number of Risk Factors in Preparation Among 3,616 Current Smokers

Risk Factors: Smoking, High Fat Diet, Sedentary, Not Using Sunscreen

- 63% No Risk Factors
- 27% 1 Risk Factor
- 8% 2 Risk Factors
- 2% 3 Risk Factors
- 0% 4 Risk Factors
Multiple Behavior Change Strategies

1) Sequential

2) Simultaneous: Modular

3) Simultaneous: Co-action

4) Simultaneous: Integrative
   a. Bullying Prevention
   b. Proactive Health Consumer
Smoking Point Prevalence

% in Action and Maintenance

Baseline | 12 Month | 24 Month

Treatment

Control

Two Years of Primary Care Counseling

I. No effects on any of the four target behaviors

II. No increased effect on four behaviors treated effectively with TTM-tailored interventions
Two Years of Worksite Campaign

I. No effects on any of the multiple targeted behaviors

II. No increased effect on multiple behaviors treated effectively with TTM-tailored interventions
Coaction: The increased probability of progressing to Action on a second behavior (e.g. diet) when individuals have progressed to Action on an initial behavior (e.g. smoking).

<table>
<thead>
<tr>
<th>Coaction in</th>
<th>Odds Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>1.00</td>
</tr>
<tr>
<td>TTM Intervention Group</td>
<td>1.50-3.50</td>
</tr>
</tbody>
</table>
Adherence: Regression from A/M by Group
Post-action at Baseline

Exercise Staging: Adherence Group
Progression to A/M by Group (pre-action at baseline)

Dietary Fat Staging: Adherence Group Progression to A/M by Group (pre-action at baseline)

Domains of Well-being (2011)

1. Physical Health
2. Emotional Health
3. Healthy Behaviors
4. Life Evaluation
5. Work environment
6. Basic Access
Elements of Well-being (2013)

1. Physical Health
2. Social Well-being
3. Community Well-being
4. Financial Well-being
5. Purpose
Dimensions of Support in Recovery

1. Health
2. Home
3. Purpose
4. Community

SAMSHA, 2011
Well-being RCT

- Determine the effects on multiple risks and multiple domains of well-being of Pro-Change’s effective LifeStyle Programs:
  - Online program for stress management
  - Telephonic coaching program for exercise management
- 3 group design

Baseline Demographics

- 39 States represented
- 59% female
- 52% currently employed
- 5.2% full time student
- 42.7% never smoke
- 20% reported no depression

**Age:**
Mean = 48.35 (13.53)
Range = 18-86

**Chronic conditions:**
Mean = 3.74 (3.09)
Range = 0-34

**Behavior risks:**
Mean = 4.14 (1.44)
Range = 0-9
Control Group

• Online Baseline Assessment
  – Survey Sampling Sweepstakes

• 6 Month Online Follow-up Assessment
  – Reminder e-mails & phone prompts
  – $30 Incentive
## Baseline Stage of Change

### Regular Exercise

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>30.2%</td>
<td>(1250)</td>
</tr>
<tr>
<td>C</td>
<td>32.7%</td>
<td>(1354)</td>
</tr>
<tr>
<td>PR</td>
<td>27.4%</td>
<td>(1132)</td>
</tr>
<tr>
<td>A</td>
<td>5.8%</td>
<td>(239)</td>
</tr>
<tr>
<td>M</td>
<td>3.9%</td>
<td>(161)</td>
</tr>
</tbody>
</table>

### Stress Management

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>31.0%</td>
<td>(1282)</td>
</tr>
<tr>
<td>C</td>
<td>26.3%</td>
<td>(1089)</td>
</tr>
<tr>
<td>PR</td>
<td>22.8%</td>
<td>(941)</td>
</tr>
<tr>
<td>A</td>
<td>8.1%</td>
<td>(336)</td>
</tr>
<tr>
<td>M</td>
<td>11.8%</td>
<td>(488)</td>
</tr>
</tbody>
</table>
Number of Behavior Risks
Mean Differences (T1-T2)

<table>
<thead>
<tr>
<th>Group</th>
<th>Multiple Imputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Coach</td>
<td>-1.18</td>
</tr>
<tr>
<td>Stress Online</td>
<td>-0.82</td>
</tr>
<tr>
<td>Control</td>
<td>-0.49</td>
</tr>
</tbody>
</table>
Exercise
% in Action/Maintenance at T2

<table>
<thead>
<tr>
<th></th>
<th>Complete Case</th>
<th>Multiple Imputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Coach</td>
<td>52.0%</td>
<td>57.3%</td>
</tr>
<tr>
<td>Stress Online</td>
<td>36.3%</td>
<td>46.6%</td>
</tr>
<tr>
<td>Control</td>
<td>29.9%</td>
<td>37.3%</td>
</tr>
</tbody>
</table>
## Stress Management

% in Action/Maintenance at T2

<table>
<thead>
<tr>
<th>Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Coach</td>
<td>74.9%</td>
</tr>
<tr>
<td>Stress Online</td>
<td>64.7%</td>
</tr>
<tr>
<td>Control</td>
<td>53.1%</td>
</tr>
<tr>
<td>Category</td>
<td>% in Action/Maintenance at T2</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Exercise Coach</td>
<td>30.7%</td>
</tr>
<tr>
<td>Stress Online</td>
<td>26.4%</td>
</tr>
<tr>
<td>Control</td>
<td>21.1%</td>
</tr>
</tbody>
</table>
Overall Well-Being
Mean Differences (T1-T2) by Group

<table>
<thead>
<tr>
<th>Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Coach</td>
<td>12.65</td>
</tr>
<tr>
<td>Stress Online</td>
<td>10.11</td>
</tr>
<tr>
<td>Control</td>
<td>6.41</td>
</tr>
</tbody>
</table>
IWBS: Physical Health
Mean Differences (T1-T2)

<table>
<thead>
<tr>
<th>Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Coach</td>
<td>15.05</td>
</tr>
<tr>
<td>Stress Online</td>
<td>11.13</td>
</tr>
<tr>
<td>Control</td>
<td>6.07</td>
</tr>
<tr>
<td>Group</td>
<td>Mean Differences (T1-T2)</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Exercise Coach</td>
<td>14.54</td>
</tr>
<tr>
<td>Stress Online</td>
<td>12.03</td>
</tr>
<tr>
<td>Control</td>
<td>7.75</td>
</tr>
</tbody>
</table>
Life Evaluation Categories: T1

Control Stress Exercise

- Suffering
- Struggling
- Thriving
Life Evaluation: T1-T2 Difference

MI

-30%
-20%
-10%
0%
10%
20%
30%

Control Stress Exercise

Suffering Struggling Thriving

0% -10% -20% -30%

Control Stress Exercise

Suffering Struggling Thriving
Comparative Outcomes of Interventions

Inclusive Care from Two Clusters of Paradigms for Individual Patients and Entire Populations

<table>
<thead>
<tr>
<th>Patient Health</th>
<th>Complemented by</th>
<th>Population Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Individual Patients</td>
<td></td>
<td>1. Entire Populations</td>
</tr>
<tr>
<td>2. Passive Reactance</td>
<td></td>
<td>2. Proactive</td>
</tr>
<tr>
<td>3. Acute Conditions</td>
<td></td>
<td>3. Chronic Conditions</td>
</tr>
<tr>
<td>4. Efficacy Trials</td>
<td></td>
<td>4. Effectiveness Trials</td>
</tr>
<tr>
<td>5. Action Oriented</td>
<td></td>
<td>5. Stage-based</td>
</tr>
<tr>
<td>6. Clinic based</td>
<td></td>
<td>6. Home based</td>
</tr>
<tr>
<td>7. Clinician Delivered</td>
<td></td>
<td>7. Technology Delivered</td>
</tr>
<tr>
<td>8. Standardized</td>
<td></td>
<td>8. Tailored</td>
</tr>
<tr>
<td>10. Fragmented</td>
<td></td>
<td>10. Integrated</td>
</tr>
</tbody>
</table>
The more population paradigms applied, the greater the engagement, impact, health and well-being.
Inclusive Care

Inclusive Research + Inclusive Practice

= 

Inclusive Care