BRIEF REPORT

STAGES OF CHANGE PROFILES AMONG INCARCERATED DRUG-USING WOMEN

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Abstract — This study investigated the utility and psychometric properties of the University of Rhode Island Change Assessment Scale (URICA) in a sample of 257 female inmates from a large urban prison. It addressed three major issues: (a) whether URICA captures stages of change among female offenders with a recent history of drug abuse; (b) whether distinct, reliable subgroup profiles would emerge from a cluster analysis of the URICA scale; and (c) whether women in these clusters would differ in their demographic characteristics, drug-use patterns, or psychological symptoms. Results indicate that the URICA is a useful, reliable, and valid tool to assess stages of change in drug-using incarcerated women. Consistent with other studies conducted with different populations, the scale yielded five distinct stages: pre-contemplation, contemplation, preparation, action, and maintenance. Cluster analysis using the hierarchical agglomerate method classified the subjects into five clusters, which correlated with subjects' psychological symptoms. Intervention implications of URICA are discussed.
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Research into the process of addictive behavior change suggests that readiness to change exists on a continuum (DiClemente & Prochaska, 1985; Marlatt, Baer, Donovan, & Kivlahan, 1988; Miller & Hester, 1986). Prochaska and DiClemente (1986a, 1986b) conceptualized change as a stage phenomenon with five distinct stages: precontemplation, contemplation, preparation, action, and maintenance of new behavior patterns. The University of Rhode Island Change Assessment (URICA) scale, which is designed to capture subtle attitudinal differences identified within or between individual stage categories, provides a continuous measure of attitudes reflecting each stage of change (McConaughy, Prochaska, & Velicer, 1983). In previous studies, using cluster analyses to classify groups of subjects, the URICA yielded from five to eight distinct cluster profiles in association with stages of change (DiClemente & Hughes, 1990; DiClemente et al., 1991; McConaughy, DiClemente, & Velicer, 1989; McConaughy et al., 1983; Prochaska & DiClemente, 1983). The URICA has also been validated in various settings and with different populations of alcohol and drug users (Rossi et al., 1993). Prior to the current study, however, the URICA had not been evaluated with drug-using female offenders. This study's purpose was to examine the psychometric properties of the URICA when administered to a sample of female inmates from a large New York City prison. The study addressed three major issues: (a) whether the URICA would be useful for assessing stages of change in drug-using female offenders;

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(b) whether distinct, reliable subgroup profiles would emerge from a cluster analysis using the URICA scale; and (c) whether women in these clusters would differ on demographic characteristics, drug-use patterns, or psychological symptoms.

M E T H O D

Subjects

Participants were 257 females who reported drug use during the 30 days prior to arrest. More than half (62.6%, $n = 161$) were African American. Their mean age was 35 years. About 20% ($n = 50$) were homeless during the 30 days prior to arrest. The mean number of prior convictions was 6.07 ($SD = 9.4$). One quarter (24.2%, $n = 76$) of the subjects were classified as problem drinkers.

Table 1. Principle components analyses for the stages-of-change scales

Item	Factor Loading	
Precontemplation ($\alpha = .70$)		
1	.56	As far as I'm concerned, I don't have any problems that need changing.
5	.59	I'm not the problem one. It doesn't make much sense for me to be in the "worth" group.
11	.59	Being here is pretty much of a waste of time for me because the problems don't have anything to do with me.
13	.60	I guess I have faults, but there's nothing that I really need to change.
23	.61	I may be part of the problem, but I don't really think I am.
26	.51	All this talk about psychology is boring. Why can't people just forget about their problems?
29	.52	I have worries but so does the next guy. Why spend time thinking about them?
31	.49	I would rather cope with my faults than try to change them.
Contemplation ($\alpha = .76$)		
2	.64	I think I might be ready for some self-improvement.
4	.70	It might be worthwhile to work on my problems.
8	.66	I've been thinking that I might want to change something about myself.
15	.53	I have problems and I really think I should work on them.
Determination for Action ($\alpha = .67$)		
12	.58	I'm hoping "worth" group will help me to better understand myself.
19	.60	I wish I had more ideas on how to solve my problems.
20	.55	I have started working on my problems, but I would like help.
21	.68	Maybe "worth" group will be able to help me.
22	.46	I may need a boost right now to help me maintain the changes I've already made.
24	.67	I hope that someone in the "worth" group will have some good advice for me.
Action ($\alpha = .88$)		
3	.73	I am doing something about the problems that have been bothering me.
7	.75	I am finally doing some work on my problems.
14	.71	I'm really working hard to change.
17	.79	Even though I'm not always successful in changing, I'm at least working on my problems.
25	.85	Anyone can talk about changing; I'm actually doing something about it.
30	.85	I am actively working on my problems.
10	.50	At times my problems are difficult, but I'm working on it.

(Continued)

Table 1. (continued)

Item	Factor Loading	
Maintenance ($\alpha = .58$)		
9	.59	I have been successful in working on my problems but I'm not sure I can keep up the effort on my own.
16	.56	I'm not following through with what I had changed as well as I had hoped, and in the "worth" group to prevent relapse of problems.
18	.29	I thought once I had resolved the problems, I would be free of them, but sometimes I still find myself struggling with them.
27	.42	I'm in the "worth" group to prevent myself from having relapse of my problems.
28	.52	It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.
32	.60	After all I had done to try and change my problem, every now and again they come back to haunt me.
6	.50	It worries me that I might slip back on a problem I have already changed, so I am in the "worth" group.

Instrument

URICA. The scale consists of 32 items, with 8 items measuring each of four stages of change proposed by DiClemente and Prochaska (1982, 1985). The items were written to be relevant to changes in a general problem area defined by the subjects (DiClemente & Prochaska, 1982; McConaughy et al., 1983; Prochaska & DiClemente, 1983) and then rated by them on a 5-point Likert-type scale.

Measurement

In addition to the *URICA* scale, face-to-face interviews elicited information on demographics, criminal behavior, alcohol and drug use, treatment history, and mental health. Drug use (heroin, crack cocaine, and marijuana) during the month prior to arrest was assessed by a questionnaire designed by the investigators. Alcohol abuse was measured by the Alcohol Use Disorder Test (Babor & Grant, 1992). Mental health was measured by the Center for Epidemiological Studies of Depression Scale (Radloff, 1977) and the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983).

Data analysis

Univariate frequency distributions were performed to describe demographic characteristics of ethnicity, marital status, level of education, homelessness, criminal history, and drug use. A principal components factor analysis using varimax rotation was conducted to assess the factor structure of the *URICA*. Internal consistency and reliability tests were performed for each component. To identify subjects' profiles vis-à-vis stages of changes, a cluster analysis using the hierarchical agglomerate method was employed resulting in five distinct clusters. To examine the external correlates of these cluster profiles, we examined cluster differences on demographic variables, depression and psychological symptoms, criminal history, patterns of substance use, and treatment histories.

R E S U L T S

A principal components factor analysis using varimax rotation yielded a five-component solution for the 32 items of *URICA*, with each component having an eigen-

value over 1.5. Forty-seven percent of the total variance were accounted for by these five components (see Table 1).

The 257 subjects were classified into five distinct clusters, each with a unique stage-of-change profile. Post hoc comparisons from Scheffe's test indicated significant stage-of-change differences among the clusters. Consequently, we considered the following five-cluster solution to be acceptable:

1. The 153 subjects (59.5% of the sample) in the denial cluster are characterized by above-average scores on precontemplation stage and below-average scores on all other stages.
2. The 22 subjects (9.3% of the sample) in the uninvolved cluster were characterized by below-average scores on all stages.
3. The 25 subjects (12.8% of the sample) in the ambivalent cluster were characterized by above-average scores on all stages.
4. The 33 subjects (12.5% of the sample) in the decision-making cluster were characterized by below-average scores on precontemplation and maintenance but above-average scores on contemplation, preparation, and action stages.
5. The 24 subjects (9.3% of the sample) in the participation cluster were characterized by below-average scores on precontemplation and above-average scores on all other stages.

Subjects in the five clusters did not differ significantly on demographic variables, drug use, or drug/alcohol treatment history. They did, however, differ significantly on patterns of depression and psychological symptoms. Subjects who were classified in the denial cluster were less likely to be depressed and reported fewer somatic symptoms than those subjects in the uninvolved, ambivalent, decision-making, and participation clusters. Subjects in the uninvolved and participation clusters were more likely to be depressed than subjects in the denial, ambivalent, and decision-making clusters. In addition, subjects in the uninvolved cluster reported the highest level of somatic symptoms. Those subjects who were classified in the denial cluster had a lower score on the total BSI and nine psychological symptoms than subjects in the other clusters. In contrast, subjects in the participation and uninvolved clusters had a higher score on the BSI and on all nine psychological symptoms than those subjects in the other three groups. This implies that those who are actively involved in change and those who have already tried to change are more likely to be depressed and demonstrate a higher level of psychological distress (see Table 2).

DISCUSSION

The results indicated that the URICA is a useful tool to assess the stages of change for drug-using, incarcerated women. These stages are consistent with previous findings on the stages of change (Prochaska & DiClemente, 1983, 1986a, 1986b), and the results yielded a series of five distinct stages: (a) precontemplation, (b) contemplation, (c) preparation, (d) action, and (e) maintenance.

Cluster analysis classified the 257 subjects into five distinct clusters (denial, uninvolved, ambivalent, decision-making, and participation). These results confirm previous studies (DiClemente & Prochaska, 1982; McConaughy et al., 1983; Prochaska & DiClemente, 1983). Moreover, each cluster has a unique stage-of-change profile clearly related to the five stages in the URICA. Most women in this study were classified in the denial cluster and less than a quarter in the decision-making and participation clusters.

Table 2. Five cluster profile differences

	Denial	Uninvolved	Ambivalent	Decision Making	Participation
Center for Epidemiological Studies on Depression Scale total	16.57	27.28	20.58	17.06	22.00
Depressive affect	0.78	1.32	1.05	0.97	1.22
Well-being	1.81	1.5	2.27	2.14	1.82
Somatic symptom	0.68	1.14	1.00	0.69	1.00
Interpersonal sensitivity	0.61	1.07	0.92	0.55	0.76
Brief Symptom Inventory total	0.52	0.99	0.89	0.59	1.04
Somatization	0.39	0.69	0.53	0.37	0.52
Obsessive compulsive	0.52	1.15	1.00	0.51	1.00
Interpersonal sensitivity	0.59	0.90	0.86	0.65	1.21
Depression	0.69	1.35	0.93	0.79	1.39
Anxiety	0.56	0.98	0.82	0.57	1.09
Hostility	0.58	1.2	1.08	0.67	1.33
Phobic anxiety	0.32	0.61	0.69	0.31	0.70
Paranoid ideation	0.57	0.94	1.34	0.78	1.11
Psychoticism	0.44	0.87	0.87	0.62	1.03

All values in bold significant at $p < .001$.

Psychological symptoms differed across stages of change. Women with a high level of investment in change and those who had given up on changing their behavior were more likely to report a higher level of psychological distress such as somatization, anxiety, obsessive-compulsiveness, interpersonal sensitivity, depression, hostility, phobias, paranoid ideation, and psychoticism. These results suggest that female inmates who have tried to change but have encountered difficulties in maintaining positive changes were more likely to have a high level of psychological symptoms. However, those who failed to acknowledge their drug problem and who did not opt to change were less likely to report a high level of psychological distress.

The findings suggest that, as a result of their efforts to change, individuals in the participation cluster, as well as those who have tried to change but have given up (uninvolved cluster), may experience more psychological distress than others and, therefore, may need extra support, services, or treatment. Whether these emotional states are motivating factors in themselves or are simply associated with "hitting bottom" or are a result of past or present attempts to change is unknown.

Several limitations of this study should be noted. First, as the study was not based on a random sample, the results may not be generalizable to other offender populations. Second, the items in the URICA were not written for a specific problem but focused on a general problem defined by the individual subjects that may or may not be related to drug use. Third, the URICA suffers from problems common to all self-report instruments; that is, the instrument assumes that respondents are able to provide accurate estimates of their readiness to entertain change processes. Unknown, of course, is the degree to which anticipation of release and return to nonconforming lifestyles, antisocial behavior patterns, depression, or neurological deficits may alter a respondent's ability or desire to appraise her own circumstances accurately with respect to the prospect of change. It seems likely that the ability and willingness to provide accurate estimates related to stages of change are not independent of individual characteristics. Nonetheless, the results further extend the promise of this instrument and indicate that URICA may be a useful tool to assess the stages of change for drug-using female offenders.

The URICA scale may be helpful in guiding discharge planning and in matching drug-using inmates to treatment. URICA data could aid clinicians by providing a useful framework for designing interventions tailored to an individual's position vis-à-vis the process of change.

Future research should build on the findings of this study. Replication with similar samples is one obvious direction. Working with criminal justice providers, future investigators should determine whether the URICA predicts behavior associated with efforts to change. Variables of interest might include help seeking, avoidance of problem situations, compliance with diversionary treatment or custodial regulations, and recidivism. It would also be useful to determine whether the URICA can help professionals in the criminal justice system match incarcerated drug users to treatments. Setting variables, such as jail, may also influence the individual's appraisal of his or her readiness to change. It might seem that these circumstances would motivate substance users to consider difficult lifestyle changes. The findings of the present study, however, provide substantial evidence that the circumstances of jail apparently have little effect on an individual's readiness to change. Plausibly, the URICA could be used as an indicator of degree to which either criminal justice institutions or personnel therein are influencing drug users to consider their circumstances and avenues for change.

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