



PREDICTIVE VALUE OF READINESS, IMPORTANCE, AND CONFIDENCE IN ABILITY TO CHANGE DRINKING AND SMOKING

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Background

- Counseling and brief interventions have been developed to address health behaviors such as unhealthy alcohol use and smoking
- Within motivational intervention paradigms, clinicians are encouraged to assess clients' motivation toward changing these behaviors

Background

- Readiness to change, importance of changing and confidence in ability to change are some of the various behavior change constructs that have been explored
- Shifts in these dimensions are often considered intermediate goals on the way to achieving decreases in consumption

Background

- In addition to being useful facilitators during clinical encounters, readiness, importance and confidence may have predictive value for future behavior change
- Some may play a more prominent role as predictors of future change than others
 - It is also possible that these dimensions will consist of substance-specific characteristics
 - i.e. readiness may be more important in facilitating tobacco use changes than in effecting alcohol use changes (or vice-versa)

Background

- If so, this could help guide clinicians when choosing which of these dimensions to prioritize and assess appropriately

Objective

- Therefore, we studied
 - Readiness to change
 - Importance of changing
 - Confidence in ability to change
- in order to predict risk status six months after baseline for drinking and smoking among 20-year-old Swiss young men.

Methods

- The sample was drawn from a large prospective cohort of 20-year-old men attending the army recruitment center in Lausanne, Switzerland
- Subjects participated in a randomized controlled trial of the impact of a multi-substance brief motivational intervention

Methods

- Within the present study, only those individuals who had unhealthy alcohol use or smoked were included.
- Subjects were eligible if they reported
 - Drinking >21 drinks per week, or >1 episode per month with 6 or more drinks/occasion (one drink = 10g of ethanol) OR
 - Smoking one or more cigarettes per day.

Methods

- Subjects were assessed on each of the three behavior change constructs using visual analog scales ranging from 1 to 10 for alcohol use and for smoking (total of 6 scales)
- Answers were later recoded into three categories: low (1-4), medium (5-7) and high (8-10)

Methods: outcomes

- At six months, subjects were classified as having unhealthy alcohol use if they reported
 - Drinking >21 drinks per week OR
 - Having >1 episode per month with 6 or more drinks per occasion
- They were classified as smokers if they reported smoking at least one cigarette per day

Methods

- Analyses were conducted separately for subjects with unhealthy alcohol use and for those who smoked daily
- Logistic regressions were used to assess the relationship between each behavior change construct and subsequent unhealthy substance use at the six-month follow-up

Methods

- Analyses conducted on subjects with unhealthy alcohol use were adjusted for the presence of smoking risk status at baseline
- Analyses for subjects who smoked were adjusted for the presence of unhealthy alcohol use at baseline
- All of the models were adjusted for the receipt of brief intervention

Results

- Of the 853 potential subjects 577 were included because they reported unhealthy alcohol use and/or smoking
- There were
 - 261 with unhealthy alcohol use only
 - 102 with smoking only
 - 214 with unhealthy alcohol use and smoking

Results: baseline characteristics

| | Subjects with unhealthy alcohol use (n=475) | Subjects with smoking (n=316) |
|--|---|-------------------------------|
| Age, mean (SD) | 20.0 (1.2) | 20.1 (1.2) |
| Unhealthy alcohol use, n (%) | | 214 (68%) |
| Smoking, n (%) | 214 (45%) | |
| Number of drinks per week, mean (SD) | 14.2 (15.7) | 11.7 (14.4) |
| Number of binge drinking episodes per month, mean (SD) | 4.9 (4.0) | 3.8 (4.5) |
| Number of cigarettes per smoking day, mean (SD) | 6.9 (8.1) | 13.0 (6.9) |
| Education level, obligatory school only, n (%) | 194 (41%) | 138 (44%) |
| <i>Occupation:</i> | | |
| In training, n (%) | 340 (72%) | 211 (67%) |
| Employed, n (%) | 102 (21%) | 76 (24%) |
| Inactive, n (%) | 33 (7%) | 29 (9%) |

Results

- Among the 475 subjects reporting unhealthy alcohol use at baseline
 - Mean (SD) readiness, importance and confidence to change drinking scores were 4.0 (3.1), 2.8 (2.2) and 7.2 (3.0), respectively
 - The repartition into low, medium and high categories was:
 - 62% / 20% / 18% for readiness
 - 82% / 12% / 6% for importance
 - 21% / 21% / 58% for confidence
- At six months, 108 (29%) of the 377 who completed the follow-up assessment reported no unhealthy alcohol use

Results

- Among the 316 smokers at baseline
 - Mean readiness, importance and confidence to change smoking scores were 4.6 (2.6), 5.3 (2.6) and 5.9 (2.6), respectively
 - The repartition between low, medium and high was
 - 54% / 30% / 16% for readiness
 - 42% / 34% / 24% for importance
 - 30% / 39% / 31% for confidence
- Of the 255 subjects who completed the follow-up assessment at six months, 33 (13%) reported that they no longer smoked daily

Association between readiness, importance and confidence and favorable outcomes at six months:

- High confidence levels were associated with subsequent changes in drinking and smoking risk status

| | Subjects with unhealthy alcohol use Separate logistic regression models (one model for each construct), AOR (95%CI)* | Subjects with smoking Separate logistic regression models (one model for each construct), AOR (95%CI)* |
|-----------------------------------|---|---|
| Readiness (reference group: low) | Model 1 | Model 1 |
| Medium | 1.26 (0.71, 2.22) | 2.05 (0.89, 4.70) |
| High | 1.42 (0.78, 2.58) | 2.07 (0.76, 5.68) |
| Importance (reference group: low) | Model 2 | Model 2 |
| Medium | 0.91 (0.45, 1.84) | 1.41 (0.58, 3.43) |
| High | 2.94 (1.15, 7.50) | 2.10 (0.83, 5.29) |
| Confidence (reference group: low) | Model 3 | Model 3 |
| Medium | 2.16 (0.97, 4.78) | 2.18 (0.74, 6.45) |
| High | 2.88 (1.46, 5.68) | 3.29 (1.12, 9.62) |

Association between readiness, importance and confidence and favorable outcomes at six months:

- High confidence levels were associated with subsequent changes in drinking and smoking risk status

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|--|---|---|
|--|---|---|

The magnitudes of association were similar for both behaviors: Subjects who had high confidence in their ability to change were about 3 times more likely to no longer report an unhealthy behavior than were subjects with low confidence levels

| | Model 3 | Model 3 |
|-----------------------------------|--------------------------|--------------------------|
| Confidence (reference group: low) | | |
| Medium | 2.16 (0.97, 4.78) | 2.18 (0.74, 6.45) |
| High | 2.88 (1.46, 5.68) | 3.29 (1.12, 9.62) |

- Results were mixed for importance of changing: there was an association between high importance and changes in drinking, but not in smoking.
- Readiness to change did not seem to be associated with changes in either drinking or smoking

| | Subjects with unhealthy alcohol use Separate logistic regression models (one model for each construct), AOR (95%CI)* | Subjects with smoking Separate logistic regression models (one model for each construct), AOR (95%CI)* |
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Limitations

- Secondary analyses of randomized trial data
- Subjects agreed to participate in a research model designed to allow them to receive a brief motivational intervention, and thus might have been predisposed to changing

Conclusion

- In this sample, changes in alcohol use are far more frequent than changes in smoking
 - 29% of the subjects with baseline unhealthy alcohol use were no longer drinking unhealthy amounts at six months
 - 13% of the baseline smokers no longer smoked at least one cigarette per day at follow-up

Conclusion

- Confidence appears to be a good predictor of subsequent reductions in both alcohol and tobacco use:
 - Subjects who had high confidence in their ability to change were about 3 times more likely to no longer report an unhealthy behavior than were subjects with low confidence levels

Conclusion

- Whether there is a causal relationship between confidence in ability to change and subsequent changes in drinking and smoking, or whether changes in confidence can lead to better outcomes remains to be determined.
- Nevertheless, this study adds to the body of evidence suggesting that confidence and self-efficacy are critical dimensions that may be causally linked to behavior change

Thank you

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Methods: secondary outcomes

- Number of drinks per week, number of episodes per month with 6 or more drinks per occasion and number of cigarettes per smoking day were used as secondary outcomes in negative binomial regression models
- Models were adjusted for baseline consumption (alcohol/smoking) and for receipt of brief intervention

Secondary outcomes:

subjects with unhealthy alcohol use at baseline

| | Number of drinks per week | | | Number of binge drinking episodes per month | | |
|--|---------------------------|--------------|----------|---|--------------|----------|
| | <i>IRR</i> | <i>95%CI</i> | <i>p</i> | <i>IRR</i> | <i>95%CI</i> | <i>p</i> |
| Readiness (reference group: low) | | | | | | |
| Medium | 0.92 | 0.74, 1.13 | 0.40 | 0.99 | 0.78, 1.24 | 0.91 |
| High | 1.07 | 0.86, 1.34 | 0.53 | 1.08 | 0.85, 1.38 | 0.52 |
| | | | | | | |
| | <i>IRR</i> | <i>95%CI</i> | <i>p</i> | <i>IRR</i> | <i>95%CI</i> | <i>p</i> |
| Importance (reference group: low) | | | | | | |
| Medium | 1.11 | 0.87, 1.42 | 0.40 | 1.11 | 0.85, 1.45 | 0.43 |
| High | 1.00 | 0.70, 1.45 | 0.98 | 1.07 | 0.71, 1.60 | 0.75 |
| | | | | | | |
| | <i>IRR</i> | <i>95%CI</i> | <i>p</i> | <i>IRR</i> | <i>95%CI</i> | <i>p</i> |
| Confidence (reference group: low) | | | | | | |
| Medium | 0.84 | 0.66, 1.08 | 0.18 | 0.82 | 0.62, 1.06 | 0.13 |
| High | 0.80 | 0.65, 0.98 | 0.03 | 0.74 | 0.59, 0.92 | 0.008 |

Secondary outcomes: subjects with smoking at baseline

| | Number of cigarettes per smoking day | | |
|--|--------------------------------------|--------------|----------|
| | <i>IRR</i> | <i>95%CI</i> | <i>p</i> |
| Readiness (reference group: low) | | | |
| Medium | 1.03 | 0.88, 1.20 | 0.73 |
| High | 0.98 | 0.81, 1.18 | 0.79 |
| | | | |
| | <i>IRR</i> | <i>95%CI</i> | <i>p</i> |
| Importance (reference group: low) | | | |
| Medium | 0.99 | 0.85, 1.15 | 0.92 |
| High | 1.08 | 0.91, 1.28 | 0.36 |
| | | | |
| | <i>IRR</i> | <i>95%CI</i> | <i>p</i> |
| Confidence (reference group: low) | | | |
| Medium | 0.96 | 0.82, 1.13 | 0.62 |
| High | 0.91 | 0.77, 1.08 | 0.29 |