Reducing Harms from Adolescents' Drinking:
Exploring the Effects of an Alcohol Intervention Curriculum Designed for Chinese Youth

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RATIONALE

- China has over 9000 years history of alcohol production and consumption.
- Traditional Chinese culture encourage moderate and social drinking.
- Strikingly rapid increase in alcohol consumption accompanied westernization since late 1970s (figure 1).
- Young people are more vulnerable to the harms of alcohol, which makes them the priority of intervention.

Figure 1 Recorded Chinese Adult (age 15+) Alcohol Consumption Per Capita (WHO, 2004)

- According to Bandura's social cognitive theory, certain behaviors may be explained by the reciprocal influence of personal and environmental factors (figure 2).
- This intervention program mainly focused on changeable personal factors:
  Outcome expectancy: "If I drink, then..."
  Self-efficacy: "I am confident to refuse a drink when..."

Figure 2 Reciprocal Nature of the Determinants of Human Functioning (Bandura, 1986)

SETTING

Figure 3 Location of Wuhan City in China

Figure 4 Time Schedule of the Repeated Measures Design

- Location: Wuhan City, China (figure 3)
- Six high schools participated, three in intervention group, the other three in control group.
- School type and student body size were balanced between the two groups.

- Two classes from each school, 10th and 11th grade.
- Three surveys before and after the intervention (figure 4).
- Gender, age, and type of drinking behavior (none, occasional, regular) did not significantly differ between the intervention and control groups.
- Sample size maintained steady (table 1).

Table 1 Number of Participants in the Three Surveys

School	Intervention Group				Control Group				Grand Total
	A	B	C	Total	D	E	F	Total	
Baseline									
Grade 10	52	51	52	155	59	54	52	165	320
Grade 11	58	50	43	151	54	57	56	167	318
Total	110	101	95	306	113	111	108	332	638
Post-test									
Grade 10	55	51	52	158	59	54	51	164	322
Grade 11	58	48	42	148	56	56	56	168	316
Total	113	99	94	306	115	110	107	332	638
Follow-up									
Grade 10	49	50	47	146	59	51	47	157	303
Grade 11	56	48	40	144	54	54	55	163	307
Total	105	98	87	290	113	105	102	320	610

INTERVENTION AND SURVEY

Figure 5 A Sample Slide Used in the Intervention Curriculum

- Features of the curriculum:
  ◊ Acknowledge both positive and negative effects of alcohol (figure 4)
  ◊ Focus on harm reduction rather than abstinence
  ◊ Clarify inaccurate perceptions about alcohol
  ◊ Build up skills to manage the drinking behavior

- Variables Studied
  ◊ Demographics
  ◊ Knowledge on Alcohol
  ◊ Alcohol self-regulation self-efficacy
  ◊ Drinking behavior
  ◊ Alcohol expectancy
- Investigators were trained to follow certain procedures (figure 5) to ensure that the survey was anonymous while students could be tracked down through the three surveys.

Figure 6 Flow Chart in the instruction for the Investigators

EVALUATION

- The direct effects of the intervention were assessed with path models.
- The mediation effects of knowledge, alcohol expectancy, and self-regulation self-efficacy were assessed with parallel path models (figure 8).
- Data analysis were accomplished by Mplus 5.1.

Is the intervention effective? Yes.

- The intervention increased Chinese high school students' knowledge, alcohol self-regulation self-efficacy and reduced positive alcohol expectancies and frequency of drinking at immediate post-test (table 2).
- Without booster sessions, only the effect on knowledge about alcohol lasted until follow-up test, which was

Figure 7 The Path Model Assessing the Direct Effects of the Intervention

Table 2 The Direct Effects of the Intervention

Outcome	Path	Estimate	S.E.	Est/S.E.	p value
Knowledge	1*	2.733	0.39	6.999	<.0005
	2*	1.68	0.348	4.826	<.0005
Negative Expectancy	1	-0.102	0.066	-1.56	0.119
	2	0.038	0.045	0.833	0.405
Positive Expectancy	1*	0.215	0.067	3.23	0.001
	2	-0.014	0.042	-0.325	0.745
Self Efficacy	1*	-4.316	1.635	-2.639	0.008
	2	0.692	1.261	0.549	0.583
Drinking Frequency	1*	0.481	0.133	3.629	0.0003
	2	-0.123	0.107	-1.147	0.251

* p<.05

Figure 8 The Parallel Path Model Assessing the Mediation Effects

Table 3 The Mediation Effects

Mediator	Indirect Path	Estimate	S.E.	Est/S.E.	p value
Knowledge	1	0.033	0	0.84	0.401
	2	0.009	0	0.383	0.701
Negative Expectancy	1	0.07	0.1	1.276	0.202
	2	-0.001	0	-0.106	0.915
Positive Expectancy	1*	0.182	0.1	2.498	0.012
	2	0.01	0	0.794	0.427
Self Efficacy	1*	0.236	0.1	2.574	0.01
	2	-0.005	0	-0.332	0.74

* p<.05

6 months after the intervention (table 2).

Is the effects on behavior mediated by other variables? Yes

- The effect of the intervention on frequency of drinking was mediated by positive alcohol expectancy and self-regulation self efficacy (table 3).
- In an expanded model (add another layer on top of figure 8), with two mediators, knowledge also mediated the effect on frequency of drinking via its effect on self-regulation self-efficacy.

RECOMMENDATIONS

- Careful experimental design is essentially important. To ensure the results of the project are generalizable, every alternative should be sought to guarantee that the sample is representative, even if random selection or random group assignment were not feasible.
- Booster sessions are necessary to reinforce the intervention effects. Learning about drinking should be seen as a lifelong process.
- Adapting the intervention to local cultural environment is always necessary.
  ◊ Local teachers reviewing the curriculum
  ◊ Translation of the measurement instruments
- A variety of techniques should be applied in teaching to attract young people's attention.
  ◊ Role play
  ◊ Group discussion
  ◊ Practicing
  ◊ Multimedia …...

For further questions, please contact
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