### Annotated Bibliography: Responsible Beverage Service

RCT = Randomized Control Trial, QE = Quasi Experimental Design, CS = Case Study, Anecdotal = Anecdotal Evidence

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<tr>
<th>Study</th>
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<td>Johnsson &amp; Berglund (2009)</td>
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<td>• No-training control</td>
<td>2003 study were no longer evident after five months</td>
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<td>Toomey et al. (2008)</td>
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<td>• ARM Express, a single session</td>
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<td>• No significant differences at follow-up in reported policies/practices across</td>
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<td>Johnsson &amp; Berglund (2003)</td>
<td>RCT</td>
<td>12 pubs at Lund University in Sweden</td>
<td>• Server-training</td>
<td>Decreased BAC levels for intervention vs. control group</td>
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<td>• No-training control</td>
<td>• No significant group differences for patrons reaching a &quot;high BAC&quot;</td>
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<td>• Decrease in ‘rowdy’ social atmosphere for intervention vs. control group</td>
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<td>• No group differences for ‘high’ and ‘cozy’ atmospheres</td>
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<td>Wagenaar et al. (2005)</td>
<td>QE</td>
<td>Establishments in twenty cities in the Midwest</td>
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<td>• Police enforcement checks</td>
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<td>establishments following check</td>
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<td>• Significant long-term increase in sales to minors as a result of the training</td>
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<td>Toomey et al. (2001)</td>
<td>QE</td>
<td>14 bars in a major metropolitan area</td>
<td>• Alcohol Risk Management (ARM) training</td>
<td>Slight increase in underage purchase rate in control and decrease in the intervention, though non-significant</td>
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<td>• No-training control</td>
<td>• Higher pseudo-intoxicated purchase rate in control vs. intervention, though non-</td>
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<td>• More significant decrease in refusal rate for control vs. intervention</td>
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### Efficacy Research


**Overview:** A randomized control trial was conducted to assess the impact of server-training for decreasing alcohol consumption of patrons in student pubs at Lund University in Sweden. Six out of twelve pubs were randomly selected to participate in the educational program and forty students attended the training. Bartenders in control pubs were not given the training.
Breath tests were given to patrons and they were also asked to rate the social atmosphere of the pub as 'high', 'cozy', or 'rowdy'. Data was gathered before, one month, and five months after the intervention group had attended the training. A univariate F-test analysis was used to measure the change between the one month and five month examination in the intervention group compared to the control group.

**Results:**
- The positive effects on BAC levels at one-month were no longer evident after five months
- The positive effects on 'rowdy' social atmosphere, which decreased significantly at one-month, were no longer evident after five months

**Limitations:** Small sample size

**CPN Note:** This study suggests that RBS training may not have long-term efficacy. Due to the short-lived impact and the high turnover in staff, there may be a need for ongoing frequent training of servers.


**Overview:** The aim of this study was to evaluate the impact of a training program, Alcohol Risk Management (ARM), for owners/managers at alcohol establishments. The training intended to reduce the practice of selling alcohol to obviously intoxicated patrons and to change establishments' policies and practices. A randomized trial was conducted, and alcohol establishments (n=231) were randomly assigned to an intervention (full-ARM, the complete training of four sessions) or a delayed intervention condition (ARM Express, a single session) between 2002 and 2004.

The full-ARM training consisted of four one-on-one training sessions with the decision maker at establishments in Midwestern United States. The goal of the program was to help managers/owners select and implement policies.

Intervention effects were measured through baseline and follow-up pseudo-intoxicated alcohol purchase attempts and telephone surveys of owners/managers at alcohol establishments.

Purchase Attempts: Fourteen actors conducted pseudo-intoxicated purchase attempts at all sites. One attempt was made at baseline, one was made at the first follow-up (one month after the conclusion of the full-ARM training), and one was made at the second follow-up (3 months after the fourth session of the full-ARM training in intervention establishments). All attempts were made before ARM Express was conducted.

Surveys: Baseline and follow-up telephone surveys of decision-makers were conducted regarding establishment characteristics and alcohol policies/practices.

**Results:**
- Sales rates to pseudo-intoxicated patrons reduced 23% (relative to delayed-intervention/control condition) at the first follow-up purchase attempt but returned to baseline levels 3 months later
- On average, establishments selected 13 of 18 recommended policies, but there were no significant differences at follow-up in reported policies/practices across establishments
Limitations: Limited to one Midwestern city, follow-up surveys were conducted over long period of time

CPN Note: This study suggests that RBS training may not have long-term effect on sales to obviously intoxicated patrons. Due to the short-lived impact and the possibility of turnover in management, there may be a need for ongoing training of servers.


Overview: A randomized control trial was conducted to assess the impact of server-training for decreasing alcohol consumption of patrons in student pubs at Lund University in Sweden. Six out of twelve pubs were randomly selected to participate in the educational program and forty students attended the training. Bartenders in control pubs were not given the training.

Breath tests were given to patrons and they were also asked to rate the social atmosphere of the pub as 'high', 'cozy', or 'rowdy'. Data was gathered before and one month after the intervention group had attended the training. A regression analysis was used to measure the change between the first and second examination in the intervention group compared to the control group.

Results:
- The blood alcohol concentration (BAC) levels decreased significantly more in the intervention group between pre- and post-test compared to the control group
- There was not a significant difference between groups for patrons reaching a “high BAC” (above 0.1%)
- The ‘rowdy’ social atmosphere decreased significantly in the intervention group in comparison to the control group
- The changes in the ‘high’ and ‘cozy’ atmosphere did not differ between groups

Limitations: Small sample size


Overview: The Complying with the Minimum Drinking Age project (CMDA) is a community trial that aims to test the effects of two intervention approaches regarding alcohol sales to minors:

1. Server/management training
2. Police enforcement checks

CMDA is a multiple time-series quasi-experimental community trial with a nested cohort design. CMDA was implemented in twenty cities in four geographic areas in the Midwest. A random sample of establishments was visited every 2 weeks for 4.5 years. The primary outcome measured was alcohol sales to minors.

Training Session: A one-on-one 2-hour training called Alcohol Risk Management-Express was offered to owners/managers to encourage them to select and implement up to 19 alcohol policies and practices.
Between February 1999 and January 2000, 119 intervention establishments participated in the program. A booster session was also offered, in which 96 establishments participated.

Enforcement Checks: Each intervention community determined a schedule for enforcement checks. In total, 959 enforcement checks were conducted. Enforcement checks (894) were also conducted in the comparison community. Pseudo-underage buyers attempted to purchase alcohol without showing identification. Analyses of 7,242 purchase attempts at 942 establishments were conducted. Data was collected every other week in all communities over four years. A time series analysis was used to assess both short-and long-term effects of the interventions.

Results:

- There was a 17% decrease in an off-premise establishment’s likelihood of selling alcohol to youth immediately following a law enforcement check. This effect decayed to 11% at 2 weeks following an enforcement check, and to 3% at 2 months following an enforcement check and eventually to zero. The authors note that the training and booster variables were not significant for off-premise establishments.
- Television broadcast regarding enforcement checks conducted in the community was significant. An increase in the number of broadcasts initially decreased the likelihood of underage sales by approximately 5%, decreasing to zero within two weeks after a broadcast.
- Effects of enforcement in on-premise establishments had significant initial and long-term effects. There was a 17% decrease in the likelihood of selling immediately following an enforcement check, decaying over time to 14% at 2 weeks and 10% at 2 months. The long-term decrease in likelihood was 8.2%.
- Participating in training was associated with an initial, yet non-significant, reduction in the likelihood of sales.
- There was a significant long-term increase in sales of approximately 7% as a result of the training.
- There was little diffusion to the whole community.

The authors conclude: “Enforcement checks prevent alcohol sales to minors. At the intensity levels tested, enforcement primarily affected specific establishments checked, with limited diffusion to the whole community. Finally, most of the enforcement effect decayed within 3 months, suggesting that a regular schedule of enforcement is necessary to maintain deterrence.”

Limitations: The authors note several limitations having to do with their assessment of the deterrent effect:

- The establishments where they collected data may or may not have had recent enforcement checks, thus “any residual effects of these earlier checks would attenuate the estimate of potential general effects” (p. 343).
- They assessed potential deterrent effects on establishments throughout a relatively large/wide-spread area and “diffusion of the deterrent effect may be limited spatially” (p. 343).

CPN Note: This study provides evidence for the efficacy of enforcement checkpoints to reduce sales to underage patrons, yet does not provide evidence for server training.

**Overview:** Project Alcohol Risk Management (ARM) is a one-on-one consultation program for owners and managers of bars. The intervention consisted of five sessions. The goal of the intervention was to help owners or managers develop and implement written policies for responsible alcohol sales and to inform staff of alcohol policies.

ARM consultants asked owners or managers to complete a 68-item risk assessment survey, which also assessed their policies and practices (e.g., carding patrons, announcing last call, not serving obviously intoxicated customers).

The program was implemented and evaluated in five bars located in a major metropolitan area. Nine control sites were used for comparison. Pre- and post-intervention data was gathered on underage and pseudo-intoxicated purchase attempts.

Six women aged 18-20 were hired to make alcohol purchase attempts. Two visits were made to each establishment during each of the two survey periods, with one purchase attempt.

Three male actors, ages 30, 34, and 44 were hired to make a pseudo-intoxicated purchase attempt. If granted the first drink, the actor would return for a second. Two visits were made to each establishment during each survey period, with up to two separate purchase attempts. Neither intervention nor control bars were aware of the observations.

**Results:**

- Prior to the intervention, only two of the five bars had written alcohol policies. Following the training, all had policies. Mean risk scores across intervention bars improved after the training.
- Underage Purchase:
  - Underage purchase rates within the two conditions were similar at baseline
  - Following the intervention, the purchase rate went up slightly in the control condition and down in the intervention (a relative decrease of 11.5%), though was not deemed significant
- Sales to pseudo-intoxicated buyers:
  - At baseline, the pseudo-intoxicated purchase rates for the first purchase attempt were comparable, although slightly higher for the control
  - Following the intervention, the pseudo-intoxicated purchase rate was slightly higher in the control condition and substantially lower in the intervention condition (a 45.8% relative decline). However, the authors explain how given the small sample size, the result was not statistically significant
- Refusals to pseudo-intoxicated buyers:
  - At baseline, refusals on either the first or second purchase attempts were much higher in the intervention group
  - After the intervention, the refusal rate in the intervention bars decreased slightly but decreased much more in the control establishments (a 6.5% relative change)

**The authors conclude:** The authors note that the main results of the project are encouraging, though not statistically significant, thus deeming the training as a promising way to reduce illegal alcohol sales. The authors also discuss the problem of participation rates, and give several suggestions for increasing participation, such as developing an effective program that takes less time to complete, offering
incentives for participation, and hiring consultants with experience in the hospitality industry. The authors also note that motivation to participate might be higher if there are community pressures to participate, with community enforcement efforts in place.

**Limitations:** Small sample size, threats of selection bias, no random assignment to condition

**CPN Note:** This study demonstrates that server training is a promising practice that may lead to better enforcement of underage drinking laws and to lower rates of serving intoxicated patrons.