

Server Intervention and Responsible Beverage Service Programs

Robert F. Saltz, Ph.D.

Prevention Research Center Berkeley, California

The recent rise in alcohol-impaired automobile crashes, injuries, and fatalities after a dip in those rates over the past few years reminds us how intractable this problem is. School-based education and mass media programs, intensified law enforcement, and court-ordered treatment programs have no doubt changed the normative climate regarding drinking and driving, and yet something about the phenomenon limits the effectiveness of these attempts to change individual attitudes and behavior.

Recognizing that people's ability to alter their habits depends greatly on situational influences, prevention specialists have turned their attention to reducing the risk of alcohol-impaired driving through modification of the drinking environment itself. Altering those contexts can, in conjunction with the educational approaches, reduce risk to a far greater degree than would either strategy alone.

Server intervention refers to a broad set of strategies to create safer drinking environments that first, reduce the risk of intoxication and second, reduce the risk that intoxicated persons will harm themselves or others. These strategies include specialized training for servers and managers, but could also comprise raising the prices of alcoholic beverages, promoting food, and altering decor to foster safe drinking. Since approximately half of those driving while intoxicated (DWI) come from a place licensed to sell alcoholic beverages (O'Donnell 1985), it seems natural to look at ways to intervene in those places to prevent the problem.

In a series of articles, Mosher (1979, 1983, 1984a) has laid out a conceptual framework for server intervention that addresses environmental reforms at two basic levels: the legal environment and the specific environment of the licensed establishment. The broad goal of server intervention is to work in a coordinated fashion at both levels to achieve consistent and effective prevention.

The first and most encompassing level, the legal environment, includes dram shop (civil) liability law, State and local Alcoholic Beverage Control (ABC) codes, and criminal statutes that affect serving practices. Dram shop (liquor liability) laws are those that hold commercial servers (and sometimes social hosts) liable if they serve obviously intoxicated or underage persons who subsequently cause harm to others or themselves. Mosher (1984a) as argued that current liability laws are vague and pay little attention to their potential in preventing alcohol-related deaths and injuries, and has coauthored a model dram-shop law that would correct these deficiencies (Colman et al. 1985). ABC

NOTE: preparation of this article was supported by the National Institute on Alcohol Abuse and Alcoholism Research Center grant AA06282 to the Prevention Research Center, Pacific Institute for Research and Evaluation. The material in this chapter is taken from a larger paper appearing in *Health Education Quarterly*.

statutes and regulations also, of course, determine how, when, and where alcoholic beverages may be served, but there again, little heed is paid to prevention. Indeed, many view these provisions as "quaint but outdated remnants of a past era" when the primary concern was with controlling vice and other criminal activity (Mosher 1984b). Criminal statutes constitute a third facet of the legal environment, usually drafted to state explicitly what is often contained in ABC codes and dram shop laws (e.g., laws prohibiting sale to minors or obviously intoxicated persons).

The level that has received more attention is the environment of the establishment itself. The earliest server intervention programs concentrated primarily on training servers to recognize intoxication and refuse service to any customer who appeared intoxicated.¹ As they gained experience with such programs, however, many trainers felt that server training alone was not sufficient to prevent intoxication.² First, intervention took place after the onset of intoxication, and second, servers seemed unable to carry out their new responsibilities unless management and management policies were solidly behind the prevention effort. Thus, more comprehensive programs were developed to include review and modification of management policies and operations, in addition to training for employees. Reflecting the evolution, one now hears more about "responsible beverage service" than server intervention per se.

The review and revision of management policies are not limited to those prohibiting alcohol sales to minors and obviously intoxicated customers. They also focus on the availability and promotion of nonalcoholic beverages and food, standards for customer behavior, minimum staffing levels, transportation for intoxicated customers, and full management support for servers who limit their customers' consumption.

Server training is necessary because most new policies require the server to accommodate to several major changes. Servers must redefine their role with respect to the customer and learn a new set of skills for monitoring and controlling customers' drinking. In addition to concrete knowledge and skills, however, training must help servers understand the program goals, modify their own attitudes about alcohol and its service, and overcome any fear or anxiety they may have about their new duties.

Research to Date

In the last couple of years, a handful of server intervention studies have been conducted. Although their aims and methods differ, each has tried to estimate the impact of server training or server intervention on either the server's behavior or the customer's consumption of alcohol. Very little (if any) systematic research has yet been conducted regarding specific components of a program, or how the program can be delivered for maximum impact and efficiency.

One of the first evaluations of server intervention, the Navy Server Study (Saltz 1987), sought simply to determine whether the concept of server intervention had potential merit as a prevention strategy. Two similar Navy Clubs for enlisted personnel were selected, with one serving as a program site and the other as a comparison. The test site employed approximately 50 people who had direct contact with customers. It took in

1 For a brief history of Server Intervention programs and evaluation, see Saltz, R.F. Server Intervention: Conceptual overview and current developments. *Alcohol, Drugs, and Driving: Abstracts and Reviews* 1(4):1-14, 1985.

2 One may compare the proceedings from the 1984 and 1987 Responsible Beverage Service Forums sponsored by the Responsible Hospitality Institute of Springfield, MA. The proceedings from the latter meeting of program and research specialists revealed a much greater concern for management systems to support server training.

over half a million dollars from alcohol sales in 1985 (when the data were collected), and would get as many as 800 customers on a busy night. The program itself involved extensive consultation with the club manager, producing several changes in club policies and practices, and an 18-hour training course for all staff.

The policy changes included promoting nonalcoholic beverages and food, overtly delaying service of an alcoholic beverage if it would put the patron at or above the legal limit for intoxication, and discontinuing the sale of beer in pitchers. Food service, which had previously been segregated from the bar area, was installed in the barroom, and money incentives were provided for servers and cooks to promote food sales. In addition, where servers had been free to serve customers anywhere in the building, the new program assigned them to specific sections of optimal size so that customers' consumption could be monitored. The food and beverage menus were expanded and drink prices raised marginally to cover the program costs.

The training course, broken into five modules and spread out over as many weeks, covered the reasons for change, alcohol's effects on the body, monitoring customers' consumption to know when they had reached the limit, and techniques to pace service and refuse it when necessary. Group discussions and visual presentations were used throughout the 18-hour program, with role-play exercises dominating the last two sessions.

Data to measure the program's impact came from interviews with randomly selected customers, structured observations of selected customers' consumption, and archival data of alcohol and food sales provided by the clubs. The project did not measure changes in server behavior, primarily because the researchers could not agree on a method, but also because the prime question was the program's effect on patron consumption. Data were collected for 2 months prior to program implementation and 2 months following.

Results have been reported from the interview data. Customers were interviewed on Thursday, Friday, and Saturday nights for 3 to 5 minutes. Questions included arrival time, mode of transportation, consumption of specific foods and beverages, frequency of patronage, age, height, and weight. The primary dependent measure was whether the patrons were over their "limit" as defined by a drink-counting system introduced in the training (a limit based on the number of drinks, the duration of time drinking, and the patron's weight category). This limit, incidentally, corresponds very closely to the BAC estimate derived from a formula given in Segal and Sisson (1985). A logistic regression analysis that statistically controlled for intervening variables showed that the risk of intoxication, which was as high as 32 percent for males at the test site, was cut in half (to 15 percent) after the program was implemented. For females, the rate dropped from 5 percent to 2 percent. Figure 1 shows the cumulative distributions of BAC levels (pre- and post-program) at the experimental site. Note, for example, that the BAC for the 70th percentile dropped from approximately 0.12 percent to 0.07 percent.

While the Navy study accomplished its goal of showing the potential for server intervention, many questions remained about the generalizability of its findings, the relative effectiveness of the training and policy changes, and the need for such extensive consultation and training to achieve the results. The servers' behavior was not monitored, the evaluation only assessed the short-term impact, and no one knows how the Navy Club setting may differ from commercial establishments.³

A second study, reported by Russ and Geller (1987; Geller et al. 1987), concerned

3 While some wonder whether the Navy Club was a more controlled environment, it was not unusual to see fistfights break out on the premises, along with the usual attempts by underage patrons to obtain an alcoholic beverage. The club was also under constant pressure to produce the profit necessary to keep various other recreational base operations funded.

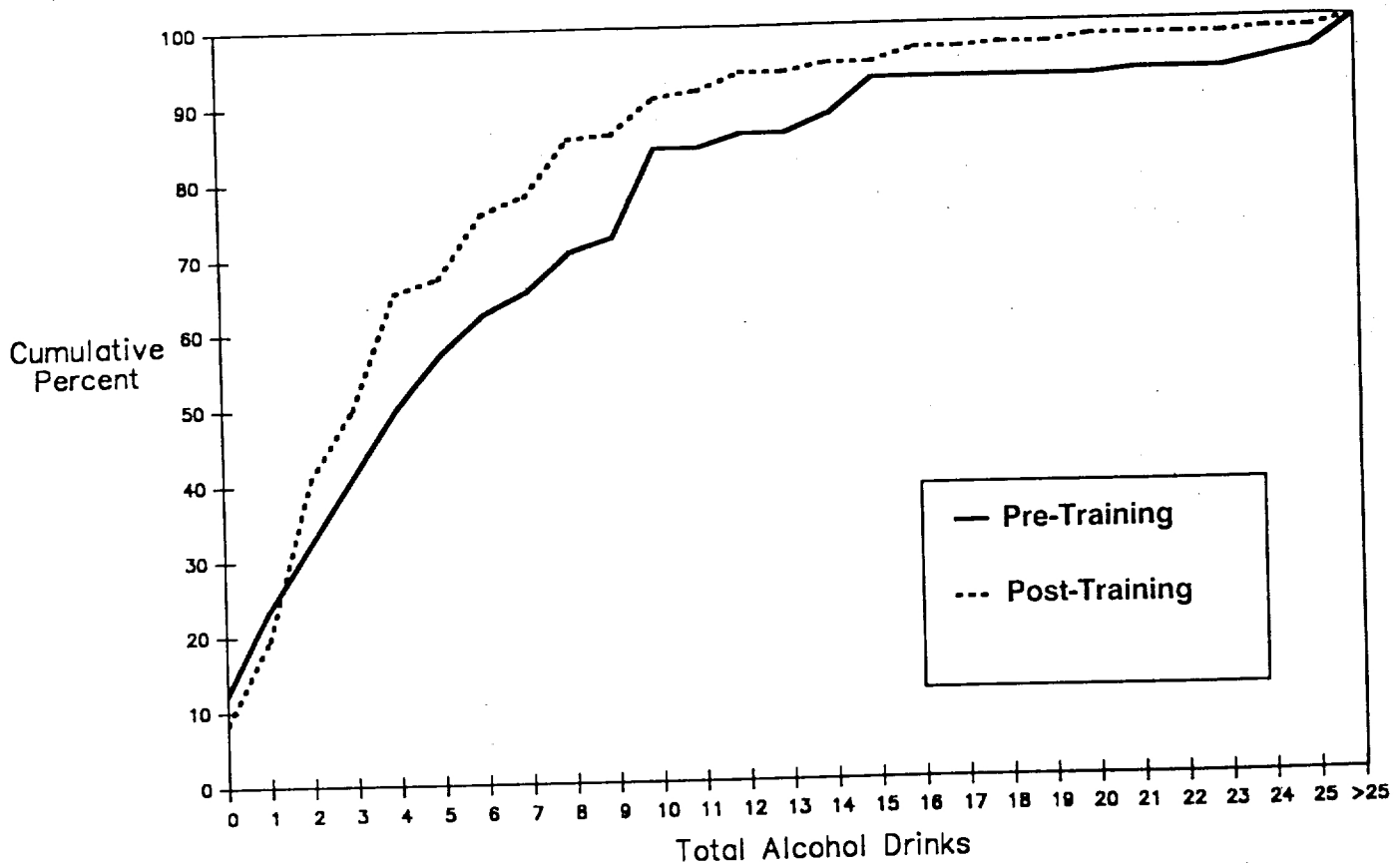


Figure 1. Experimental site interview data, pre- versus post-training

one of the commercially available server training programs, TIPS (Training for Intervention Procedures by Servers of Alcohol) (Chafetz 1984). This program comprises a 6-hour course that includes video vignettes, group discussion, and role-playing, with an emphasis on identifying signs of impairment, pacing service, checking patrons' age, and promoting alternatives to alcoholic beverages. The trainees must then score at least 70-percent correct on a 40-question written test to become certified servers.

The authors recruited 17 trainees from two commercial establishments, ending up with about half the employees having been trained. Research assistants, posing as customers, entered the establishments 24 times before and 25 times after the training and attempted to order and consume a drink every 20 minutes over a 2-hour period. If the training were effective, the server should intervene in some way to slow down or terminate the "pseudopatrons'" consumption. Russ and Geller counted the type and number of interventions for each drink ordered (up to the maximum of 6 drinks) and compared the type and frequency of intervention for the trained staff ($n = 17$) and the untrained staff ($n = 9$) against the pretraining baseline (type and frequency of interventions) with all staff ($n = 24$). They found that while the untrained staff intervened no more frequently than at baseline (about 0.75 interventions), the trained staff intervened more frequently (3.24 interventions). Interventions included the offer of food or water, checking ID, delaying service, commenting on the quantity or speed of the customer's alcohol consumption, and making a driving-related comment.

A second measure of the program's impact was the pseudopatrons' BAC taken after the 2-hour drinking period. Whereas those served by the untrained staff had BACs as

high as baseline (mean of 0.103, with four of nine pseudopatrons above the legal limit), none of those served by the trained staff was over the legal limit (mean of 0.059 BAC).

These results were obtained without the benefit of policy changes at the management level or having all staff at an establishment working together to make the program a success. It would certainly be interesting to compare these findings with those obtained when all of an establishment's staff was trained at once.

In contrast to the Navy Server Project, the TIPS evaluation addressed training per se rather than training as part of a broader program. Its advantages include a direct measure of the server's behavior and its impact on the pseudopatron's BAC but, as with the Navy study, it has a few weaknesses as well. It, too, measured program impact in the short term, collecting baseline and posttraining data over an 11-week period. Though the trained servers were more likely to intervene, the interventions themselves were fairly mild. For instance, only 10 of the 55 interventions involved delay of service, and half of those were during the first three drinks, with no server delaying service of the sixth drink. The modal intervention was the offer of food or water, which accounted for about a third of the interventions. Eleven of the 13 interventions occurring on the sixth drink were either offers of food and water, or comments about the pseudopatron's consumption or driving. At no time was service refused.

The mildness of the interventions was reinforced by the few examples given of how they were coded. The pseudopatrons were accompanied by a confederate who activated a small tape recorder when the server and pseudopatron interacted. Two research assistants, blind to the pre- or post-training condition, independently coded the interventions. "Delay of service" could mean that the server offered to refill the confederate's nonalcoholic beverage without offering to get the pseudopatron another alcoholic drink. Since the confederate ordered only one drink during the 2-hour period, it's hard to interpret the significance of the "delay." A "driving-related comment" could be asking who was driving or suggesting that a nondrinking partner drive carefully. These interventions do not seem capable of having a major impact on driving while intoxicated.

What, then, of the pseudopatron's BAC? Here again, interpretation is complicated. The pseudopatrons were instructed to order a drink every 20 minutes for 2 hours. If the server intervened, they were to react in a manner similar to their normal drinking behavior. If offered food, for example, the pseudopatrons were told to accept it if they were hungry. This leaves the BAC measure to be a result of the interaction of the server's behavior and the pseudopatron's (unmeasured) inclination to accept the offer or heed the comment, whatever the case may be. As an example, two pseudopatrons could enter the same establishment, one could accept the offer of food while the other wasn't hungry. They would then presumably exit with different BACs despite identical "interventions" by the server. If the pseudopatron's behavior is not consistent, the generalizability of the results is uncertain.

While we know the mean level of intervention increased for 17 trainees, we cannot tell from the reported data whether the increase in intervention was widespread among the trainees, or whether, say, 2 or 3 trainees were especially active and accounted for all the interventions while the other 14 or 15 remained unaffected by the training.

Finally, individual trainees were not compared pre- and post-training, since the baseline data did not identify servers. Since the pool of trainees was basically self-selected, we don't know the degree to which the serving practices between the trained and untrained servers were different even before the training.

The National Highway Traffic Safety Administration (NHTSA) has sponsored two demonstration and evaluation studies of server intervention. The first, called TEAM (Techniques of Effective Alcohol Management), represented a collaborative effort of NHTSA and several other organizations, and focused on alcohol service at seven selected arenas associated with the National Basketball Association (NHTSA 1986). The

program called for policy review and revision, followed by a 4-hour training covering the drinking and driving problem, liability law, alcohol's effects, recognizing impairment, policies and practices, and dealing with alcohol and drug related incidents. All arena employees were included in the training, not just those who served beverages.

The TEAM evaluation report is hard to assess because the evaluation activities were directed toward program development. The program was constantly changing as different data were collected at subsets of the seven participating arenas. The program was evaluated through a combination of a followup review of arena management policies (at five sites), surveys of staff and patron attitudes and reported behavior (at seven and three sites, respectively), and a review of sales data from two sites. The study showed that the program did result in policy revisions at the participating arenas, and that alcohol consumption (especially beer) declined in two sites while food and nonalcoholic beverage sales increased.⁴ Through data collected from the staff and patrons, the researchers also concluded that management support was critical to the success of the program, and furthermore, that the support had to be visible for the staff to carry out their own responsibilities.

The TEAM evaluation is best thought of as an informal summary of loosely organized quantitative and qualitative data, much of which was apparently collected after the programs were in place. It provides many suggestions to program designers and trainers, but should not be considered a formal impact evaluation. The authors of the report, in fact, state that a formal evaluation design was inappropriate for their purposes and needlessly constraining.

NHTSA also sponsored a study conducted by McKnight (1987) that involved the development and delivery of a responsible beverage service program to 32 establishments in Louisiana and Michigan. In this study, a 3-hour training was given to servers and managers, with 3 additional hours for the managers alone; 245 people were trained in all. A specially selected group of 10 establishments in each State was used for comparison, along with 24 establishments that were invited to participate but did not.

The emphasis of the training was on prevention, providing the servers with strategies to prevent customers from becoming intoxicated. If service is performed responsibly, it should not be necessary to refuse service to anyone. The server's training used videotapes followed by discussion of the material shown in the tapes. The training covered the concept of server liability, the moral and legal responsibility to prevent intoxicated patrons from driving, and the physiological effects of alcohol. The course then moved to prevention, including checking ID, serving food and nonalcoholic beverages, providing activities, and observing patrons for signs of impairment. The final module for servers covered intervention – what to do when customers became intoxicated – and included such tactics as delaying service, providing alternative transportation, and refusing service. The servers were expected to know when intervention was needed, but the managers were expected to carry it out.

The extra 3 hours for managers covered intervention skills and strategies (with role-play exercises) and a section on responsible alcohol service business practices, where managers were encouraged to formulate policies relevant to their own establishments.

The program's effectiveness was measured via pre-post differences in scores on a 10-item knowledge test and a set of 10 items measuring opinions about the service of alcohol. The knowledge test comprised different, but equivalent, items for the pre and post-tests, while the opinion scale remained the same for both administrations. In a

⁴ The report does not offer consistent data on these changes, nor are there significant tests. Given the lack of comparison sites, it would be difficult to attribute changes in the test sites to the TEAM program alone.

separate set of items, servers were also asked about the frequency with which they engaged in several different types of activities related to prevention (e.g., offering coffee, inquiring as to who is driving, refusing service). Managers were given a checklist of beverage service policies (e.g., closing hours, availability of snacks) to indicate which they employed at their establishment. The same forms were given to servers and managers 4 months after the training.

Research assistants were used in this study, also, to pose as customers, but here they were to feign intoxication when entering the establishment to see if they would be served a drink despite their condition. The pseudopatrons were trained to maximize the consistency of their behavior, which included staggering to their table, missing the chair or stool when sitting, slurred speech, and exhibiting difficulty in handling the money to pay for the drink. After 15 minutes, the pseudopatron would leave the establishment and record details of the encounter, whether any intervention had taken place, and whether any customers were intoxicated or drinking despite appearing underage. All establishments were visited four times by four different assistants before and after the training.

The results of the Louisiana and Michigan programs differed somewhat. Knowledge scores increased in both States, with Louisiana trainees (n = 120) improving their scores from a mean of 6.35 to 7.65, and Michigan scores (n = 95) improving from a mean of 6.24 to 8.23. The Michigan score change was (statistically) significantly greater than the other State's. The trainees' opinions became more favorable, too, after the training, with the Michigan trainees starting out with more favorable opinions than the Louisiana trainees.

A self-report, serving practices questionnaire was completed by 55 percent of the Louisiana servers and only 29 percent of the Michigan servers. Apparently, many of the servers had quit working at their original establishments, and some had been promoted to managers. Both sets of servers reported a statistically significant increase in responsible serving practices. The manager's reports on serving policies showed a significant change in policies in Michigan but not Louisiana.

Table 1 summarizes the level of intervention by servers confronted by the "intoxicated" pseudopatron. One can see that in the best of circumstances (the Michigan treatment post period), the pseudopatrons were served 72 percent of the time with no intervention of any kind. On the other hand, outright refusal of service jumped from 3

Table 1. Distribution of server action by experimental group, site, and period
(in percents)

Server action	Louisiana				Michigan			
	Treatment		Control		Treatment		Control	
	Pre N=62	Post N=62	Pre N=127	Post N=126	Pre N=63	Post N=61	Pre N=141	Post N=135
Service, no intervention	92	90	93	85	87	72	86	86
Service, status	3	3	4	2	3	7	6	5
Service, alternative	3	3	3	10	3	0	3	4
Service, slow	2	0	0	0	3	2	3	0
Service, transport	0	0	0	0	0	0	0	1
Service, final	0	0	0	0	0	3	1	0
No service	0	3	0	2	3	16	2	4

Source: McKnight 1987.

Table 2. Mean intervention level by experimental group, site, and period for collapsed intervention score

Time	Louisiana			Michigan			Total
	Treatment	Control	Both	Treatment	Control	Both	
Pre	.08	.07	.07	.16	.16	.16	.12
Post	.13	.17	.16	.44	.18	.26	.21
Diff	.05	.10	.09	.28	.02	.10	.16

Source: McKnight 1987.

to 16 percent in the same group of establishments. While the Louisiana treatment group was more likely to refuse service after the training, so was the control group.

To test the outcomes for statistical significance, the author collapsed the intervention levels into "service without intervention," "service with some form of intervention," and "no service," with scores of 0, 1, and 2, respectively. Table 2 shows the resulting differences across sites and conditions. An analysis of variance (ANOVA) showed that the program produced in a significant increase in interventions in Michigan, but not Louisiana. Unaccountably, the Louisiana control group's increase in intervention was greater than the treatment group, primarily in their suggesting alternatives.

McKnight concluded that the program can improve knowledge and attitudes and can produce a small increase in interventions, but, depending on situational variables, changes in management policy may be small and limited, and finally, the type of establishment influences the program's chance of success. In particular, the program seems to be most successful in places with a smaller volume of sales, or that serve affluent clientele.

The latest reported evaluation of a responsible beverage service program was conducted by researchers of the Addiction Research Foundation in Toronto, Canada (Glicksman and Single 1988; Simpson et al. 1986). Here, manager and complementary server training courses were given in four different types of establishments in Thunder Bay, Ontario, with four other sites used for comparison. Managers and owners were trained to implement specific policies of which servers were aware and which would reinforce the desired serving practices. Training for servers included such topics as serving and the law, health, preventing intoxication, and managing intoxicated persons. The training emphasized clear and concise steps for servers to take. The program also set a limit on the number of drinks a customer could have.

A 35-item true/false test was used along with three open-ended items to assess changes in trainees knowledge of appropriate serving practices. A t-test showed significant increases in both portions of the test, with true/false scores improving from 24.1 to 30.2, and the open-ended items from 1.3 to 5.3 (out of a perfect score of 11).

The study also adapted and expanded on the pseudopatron approach used in the Geller and McKnight studies by devising seven alternative scripts for the pseudopatrons, covering different situations that would require intervention, as follows:

- Being too "young" to be served
- Ordering too many drinks at once
- Ordering too often
- Displaying drunken behavior and disorderly conduct

- Displaying drunken behavior but quiet conduct
- Preparing to drive home when obviously intoxicated
- Ordering drinks when intoxicated

The research team also constructed a 12-point scale of server responses to these incidents, ranging from a -6 for unsolicited service of more alcohol (when service should be denied) to +6 for calling the manager over. Intermediate scores were assigned for responses that fell in between—for example, a -1 for ignoring the customer and a +2 for commenting on the pseudopatron's behavior. If the server's actions involved more than one response, the scores were added together.

Pre- and post-measures of knowledge about alcohol and good serving practices showed a significant improvement among those who had been trained, and measures of receptivity to the training were also positive. ANOVA was conducted with three pairs of matched bars (the fourth pair had to be eliminated because of untrained staff in the experimental site) using a 2 X 2 repeated measures design using time (pre versus post intervention) and group (experimental versus comparison). The dependent variable was the server's response scores (with a constant added to make all scores positive). As with the Navy Server study, results showed both a time effect and an interaction of time and group. The mean score of the comparison sites increased slightly from about 16.3 to 16.9, while the experimental sites' mean score rose from about 15 to over 21 (see figure 2). It seems clear that the trained servers had moved toward more appropriate responses to the problematic scenes acted out by the pseudopatrons.

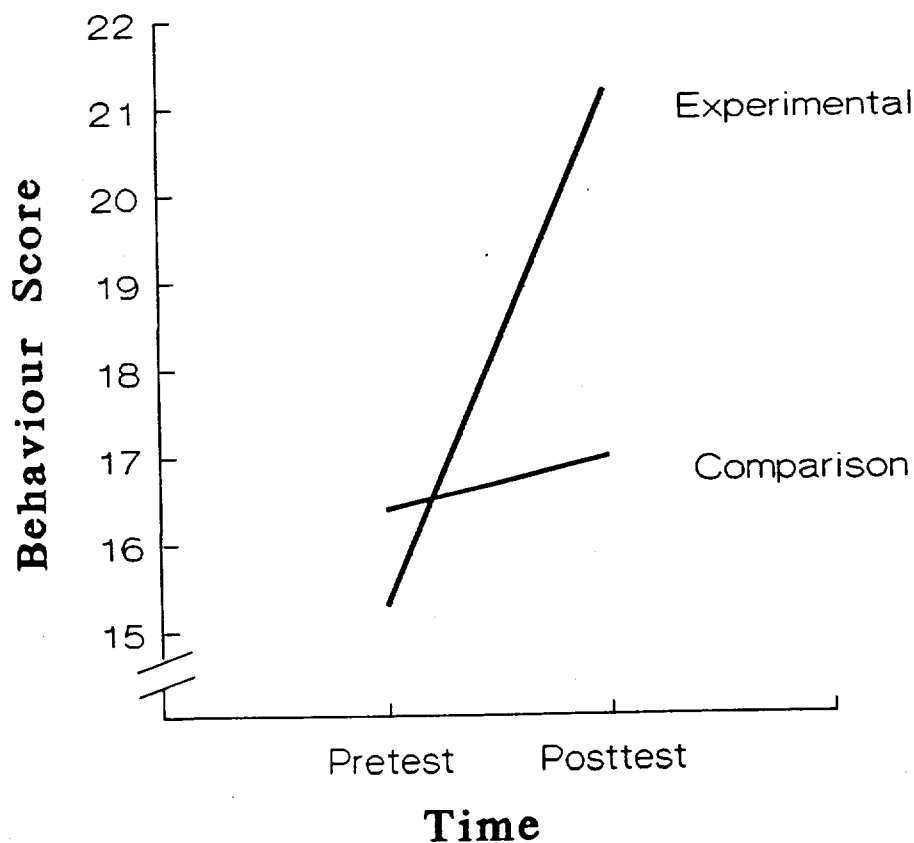


Figure 2. Server behavior—interaction of time by group

Source: Gliksman and Single 1988.

As with the other evaluations, only short-term effects were measured, and again, one cannot tell from the report how widespread the interventions were across trainees. Since the server could respond in several ways, it is theoretically possible with an additive score for a few servers to have exceptionally high scores while others remained unchanged, resulting in an overall gain in the mean intervention score.

In summarizing the existing research, we should point out that these studies differed in their aims. The TEAM study did not employ a strict evaluation design partly because the researchers felt it was not appropriate for program development, but also because they wished to remain open to any opportunities to get a "feel" of how the program was working. The Navy study was trying to measure the impact of a comprehensive program that included more than server training on customer consumption, and thus, did not focus on the servers' intervention so much as on whether the overall program both reduced customer demand and limited the supply of alcohol.

The TIPS evaluation and the McKnight study, on the other hand, were explicitly concerned with whether the server training had increased the likelihood of intervention by the server directly. It is unclear why the TIPS program would have seemed somewhat successful despite having only some of the servers trained and no particular management support, while the McKnight program had a limited impact in only one of the two States. Perhaps the difference was due to the different definitions of "intervention." For the TIPS study, mild forms (comments, offering food and water, etc.) were weighted alike, whereas for McKnight's analysis, mild forms were scored lower than refusals. On the other hand, the TIPS pseudopatrons did not necessarily show overt signs of intoxication as did the other study's staff. One might guess that refusal of service to obviously intoxicated customers would be one of the easier objectives to achieve in the training.

Research Recommendations

Obviously, we have only just begun to explore this promising avenue for prevention. The studies summarized above were designed to assess the potential for server intervention. There are, of course, a host of specific questions remaining regarding the proper emphasis for such prevention strategies and questions regarding the social and legal environments that may encourage the intensity and growth of responsible beverage service. Among these research questions are the following:

- *Training curriculum.* How much emphasis is needed on "affective" topics versus specific skills in intervention? Which modes of training (e.g., lecture, videotape, group discussion, role play) are best suited for each topic in the curriculum? How long must the training be? Who should be trained? What kind of followup training is required and how often should it be offered?
- *Establishments.* What program modifications are necessary for very large or small businesses? Should the program be tailored for different clientele (e.g., upscale versus casual).
- *Management policies.* Which policies and practices should be considered the minimum necessary to create an environment conducive to the prevention aims of the training? Which specific practices pose the largest risks for intoxication (e.g., happy hours or other promotions)? What is the impact of patron education?
- *Social and legal environment.* What role does dram shop liability play in encouraging effective programs? What is necessary for insurance companies to offer meaningful discounts to businesses that participate in responsible beverage service programs?

Summary

It should be clear that much remains to be done to refine the design and implementation of server intervention or responsible beverage service programs. While current results are somewhat mixed, there does seem to be an opportunity to reduce the risk of intoxication, or at least the level of intoxication, among customers at licensed establishments.

Obviously, research and evaluation of server intervention or responsible beverage service is in its infancy. While we now have reason to believe that server intervention can reduce intoxication and subsequent alcohol-impaired driving, the results are mixed, especially regarding the size of that impact. When results differ, we naturally turn to questions about the nature of the programs being evaluated and how they were implemented. Further research can take the materials that were developed in the programs designed to date, compare their features, and begin a systematic exploration of which features should be kept and which discarded, which methods are best suited for delivering those elements, and what situational and environmental influences help or hinder an effective program's implementation.

REFERENCES

- Chafetz, M.E. Training in intervention procedures: A prevention program. *Abstracts: Review of Alcohol and Driving* 5:17-19, 1984.
- Colman, V.; Well, B.; and Mosher, J.M. Preventing alcohol-related injuries: Dram shop liability in a public health perspective. *Western State Law Review* 12:417-517, 1985.
- Geller, E.S.; Russ, N.W.; and Delphos, W.A. Does server intervention make a difference? *Alcohol Health and Research World* 11(4):64-69, 1987.
- Glikzman, L., and Single, E. "A Field Evaluation of a Server Intervention Program: Accommodating Reality." Paper presented at the Canadian Evaluation Society Meetings, Montreal, Canada, May, 1988.
- McKnight, A.J. *Development and Field Test of a Responsible Alcohol Service Program. Volume I: Research Findings.* Report No. DOT HS 807 221, Washington, DC: National Highway Traffic Safety Administration, Department of Transportation, 1987.
- Mosher, J.M. Dram shop liability and the prevention of alcohol-related problems. *Journal of Studies on Alcohol* 40:773-798, 1979.
- Mosher, J.M. Server intervention: a new approach for preventing drinking driving. *Accident Analysis and Prevention* 15:483-497, 1983.
- Mosher, J.M. *Server Intervention: Present Status and Future Prospects.* Berkeley, CA: Prevention Research Center, 1984a.
- Mosher, J.M. *Legal Liabilities of Licensed Alcoholic Beverage Establishments: Recent Developments and Policy Implications.* Berkeley, CA: Prevention Research Center, 1984b.
- Mosher, J.M. The impact of legal provisions on barroom behavior: Toward an alcohol-problems prevention policy. *Alcohol* 1:205-211, 1984c.
- National Highway Traffic Safety Administration. *TEAM: Techniques of Effective Alcohol Management: Findings from the First Year.* Washington, DC: National Highway Traffic Safety Administration, Department of Transportation, 1986.
- O'Donnell, M. Research on drinking locations of alcohol-impaired drivers: Implication for prevention policies. *Journal of Public Health Policy* 6:510-525, 1985.
- Russ, N.W., and Geller, E.S. Training bar personnel to prevent drunken driving: A field evaluation. *American Journal of Public Health* 77:952-954, 1987.
- Saltz, R.F. The roles of bars and restaurants in preventing alcohol-impaired driving: An evaluation of server intervention. *Evaluation and the Health Professions* 10(1):5-27, 1987.
- Segal, R., and Sisson, B. Medical complications associated with alcohol use and alcoholism. In: Bratter, T.E., and Forrest, G., eds. *Alcoholism and Substance Abuse.* New York: Free Press, 1985.
- Simpson, R.; Stanghetta, P.; Brunet, S.; Single, E.; Solomon, R.; and Van de duet, W. *A Guide to the Responsible Service of Alcohol.* Toronto: Addiction Research Foundation, 1986.