Moderate Drinking, Harm Reduction, and Abstinence Outcomes

Kenneth Anderson - HAMS Harm Reduction

BACKGROUND

Starting in the 1970s and leading up to the present day, William Miller and his colleagues have been collecting experimental data about a moderate drinking intervention called Behavioral Self Control Training (BSCT) which has given us a lot of interesting data about who succeeds with a moderate drinking goal, who succeeds with an abstinence goal, who achieves a harm reduction goal, and who fails to improve or deteriorates.

Popular mythology paints us a picture of alcoholism as an incurable, progressive disease which inevitably results in death unless the victim achieves salvation through the 12 steps of AA. However, scientific research shows us that the most common outcome of Alcohol Dependence is recovery without treatment and without AA; moreover about half of those who recover do so by cutting back on their consumption and about half recover by quitting drinking entirely (NIAAA 2009).

Miller's data suggests that even among those who do not recover completely from alcoholism by abstaining or achieving stable moderation, there are many who achieve a **Harm Reduction** outcome which Miller labels "Improved but Impaired." Some show no improvement and a small number, 5% in Miller et al's (1992) sample, continue to get worse.

Miller classified drinkers into several different levels of dependence in his analysis of the BSCT data. Miller et al 1992 divides drinkers up into two dependence categories based on MAST (Michigan Alcoholism Screening Test) scores; Level One is Low Dependence (MAST < 19) and Level Two is High Dependence (MAST >= 19). Miller et al 1992 found that significantly fewer High Dependence subjects achieved Moderate Drinking outcomes; however level of dependence had no significant impact on successful Harm Reduction outcomes or successful Abstinence outcomes. Miller and Wilbourne 2003 added a third level of dependence into the analysis. They found that no BSCT subject with Level Three dependence (Higher Dependence, MAST >= 29) achieved a Moderate Drinking outcome. However it is important to note that very few of Miller's subjects fell into the category of Level Three dependence and that it is impossible to draw firm conclusions from too small a cohort. Moreover, Level Three drinkers were successful at achieving both Abstinence outcomes and Harm Reduction outcomes. Finally we should note that Miller postulated a category of Level Four Severe Dependence. These drinkers, Miller notes, are generally found in abstinence based treatment centers and were essentially unrepresented in the BSCT data.

Other factors which were predictive of successful moderation were a rejection of the label "alcoholic" and no history of AA attendance. Although more women than men achieved moderation in this data set, the difference was not statistically significant.

TREATMENT OUTCOMES FOR ALL SUBJECTS

Miller and his colleagues conducted 4 separate trials[1] of Behavioral Self Control Training (BSCT) on a total of 140 subjects between 1977 and 1981. (As noted above, BSCT is a moderate drinking training protocol.) In 1985 Miller and his colleagues did a long term follow up of these subjects who had been treated with Behavioral Self Control Training, the results of which were published in Miller et al (1992) and Miller and Wilbourne (2003). Ninety nine of the original 140 subjects were available for follow up. Of these 99, 4 were deceased. In addition to these 99, another 16 were located but refused to be interviewed at the follow up.

At follow up, Miller classified subjects into the categories Abstinent, Moderate, Improved but Impaired, Unremitted, Deteriorated, Dead. These categories were defined as follows:

Abstinent: Long term abstinence of 12 months or more. Subjects ranged from 14 to 99 months of continuous abstinence. One subject categorized as abstinent had had a single drinking day in a 30 month period. **23** subjects fell into the category **Abstinent**.

Moderate: The term which Miller actually uses is Asymptomatic. These are subjects who had shown no clear evidence of alcohol abuse or dependence during the 12 month period preceding follow up. Although Miller did not set a specific drink limit to distinguish moderate drinkers from the other categories, he found that persons in the moderate drinking category averaged fewer than three drinks per day (one drink = 0.5 oz ethanol)[2] and did not exceed a BAC (blood alcohol content) of 0.08. These subjects consumed an average of 9.8 drinks per week. **14** subjects fell into the category **Moderate**.

Improved but Impaired: This is a **Harm Reduction** outcome. The subjects who fell into this category showed a substantial reduction in alcohol consumption as well as a substantial reduction in symptoms of alcohol abuse or dependence. However, these subjects still showed some symptoms of alcohol abuse or alcohol dependence. In particular these subjects experienced two or more of what Miller defines as alcohol related significant problems. These problems include repeated hangovers, subjective loss of control, driving while intoxicated, blackouts, family discord, and other problems which Miller did not specifically list in his 1992 publication. Subjects in this category consumed an average of 13.6 drinks (one drink = 0.5 oz ethanol) per week. **22** subjects fell into the category **Improved but Impaired**.

Unremitted: Regardless of any consumption changes, drinking continued to result in negative consequences and/or dependence symptoms at, near or above pretreatment levels. Taken together, unremitted and deteriorated subjects averaged 42.6 (one drink = 0.5 oz ethanol) drinks per week. **30** subjects fell into the category **Unremitted**.

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[1] These trials were published in Graber and Miller, 1988; Harris and Miller 1990; Miller et al., 1980; and Miller and Taylor 1980. The times elapsed between the original study and the 1985 long term follow up were 3.5, 5, 7 and 8 years, respectively.

[2] Note that Miller's paper is using to old definition of a standard US Drink which is 0.5 oz ethanol rather than the current definition of a standard US drink which is 0.6 oz ethanol.

Deteriorated: These subjects were judged to be significantly more symptomatic (impaired, dependent) than before treatment. **5** subjects fell into the category **Deteriorated**.

Dead: 5 subjects were deceased at follow up; two had committed suicide, one died by homicide, one by trauma sustained in a single vehicle accident and one by heart attack. **5** subjects fell into the category **Dead**.

Figure 1 illustrates graphically the results of the long term follow up of BSCT. It is of interest to note that the size Harm Reduction outcome (i. e. the category "Improved") at 22% is roughly equal to the Abstinence outcome at 23%. Both of these outcomes are greater than the Moderate Drinking outcome at 14%. The category Deteriorated is quite small at 5%.

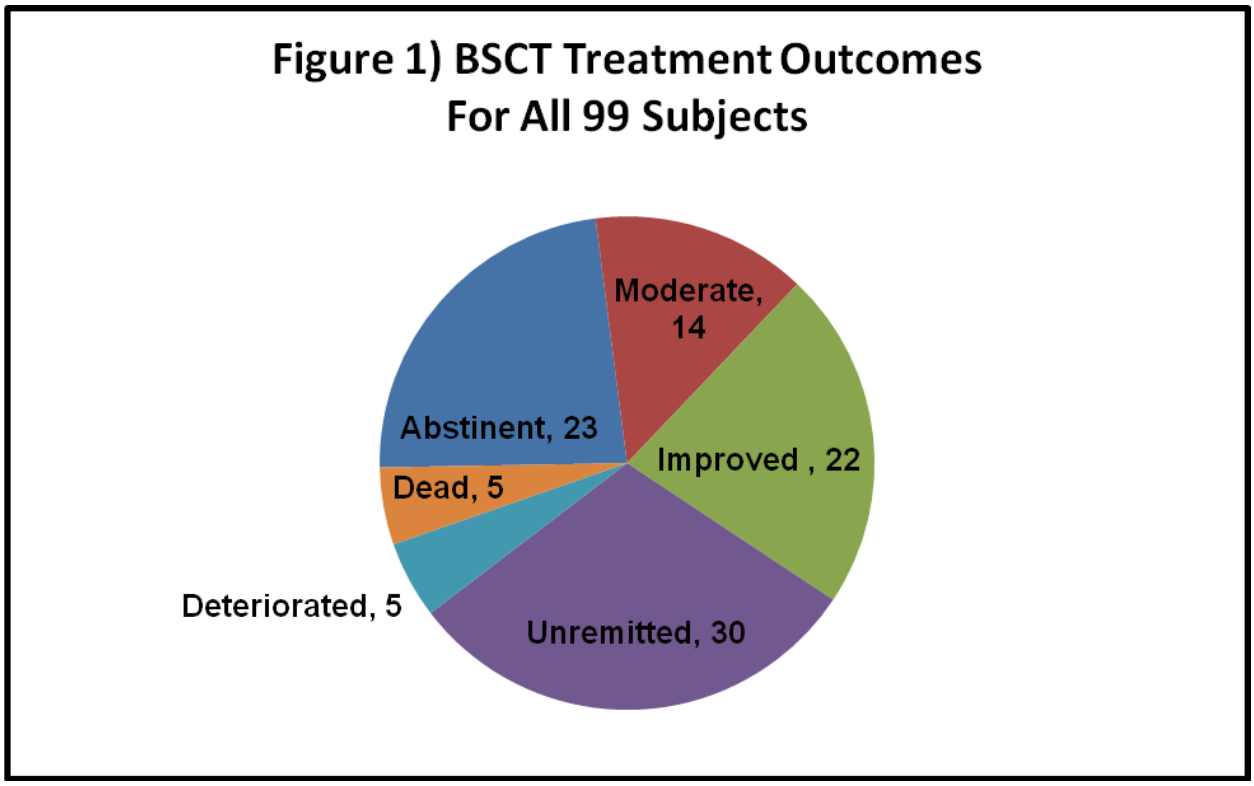
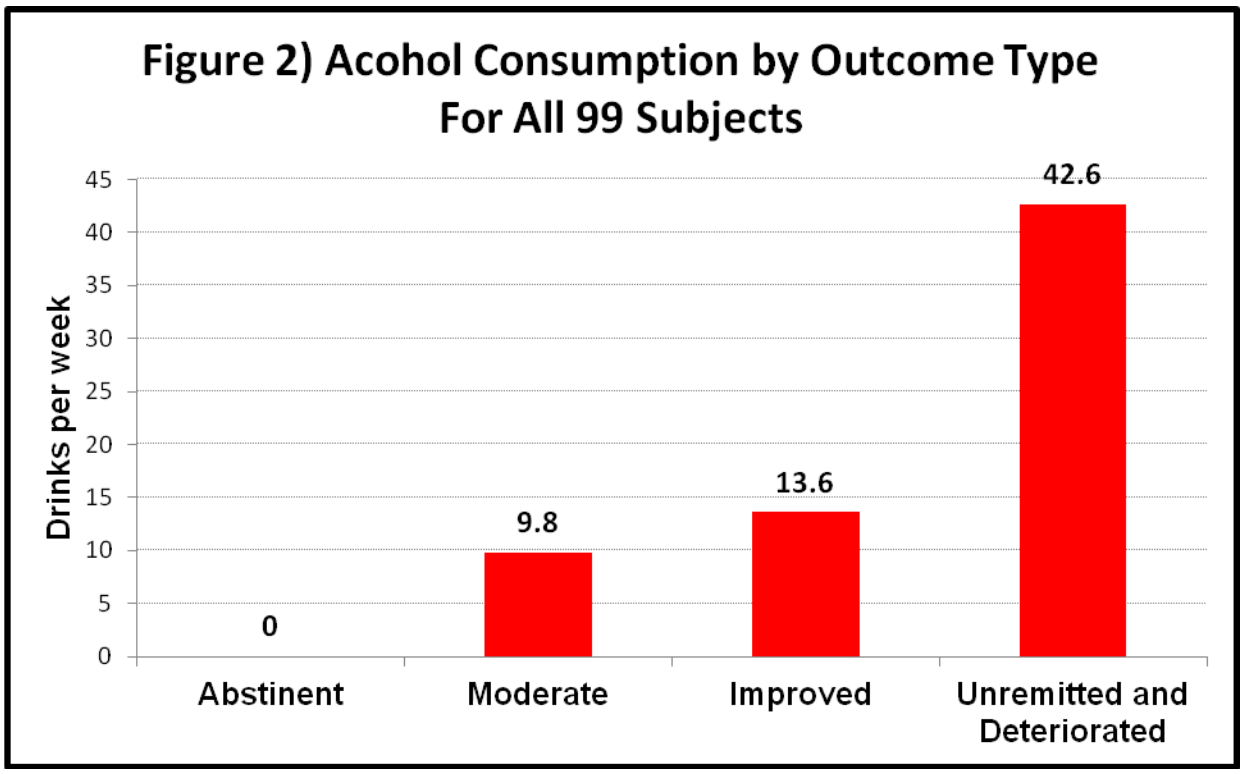


Figure 2 illustrates alcohol consumption by outcome type in terms of number of standard drinks per week.



DIAGNOSIS IS NOT PREDICTIVE OF OUTCOME

It is a commonly held myth, accepted by even most doctors, therapists, and addiction treatment professionals, that people who are diagnosed with Alcohol Dependence are incapable of stable moderate drinking outcomes and that only those with a diagnosis of Alcohol Abuse can achieve moderate drinking outcomes. In fact, many professionals falsely believe that abstinence is the only viable outcome even in cases of Alcohol Abuse. Miller's data demonstrates clearly that this myth is false and that many individuals with Alcohol Dependence can achieve Moderate Drinking outcomes and Harm Reduction outcomes. Fifty four of Miller's subjects were diagnosed with Alcohol dependence at intake, whereas 40 were diagnosed with Alcohol abuse only (deceased subjects have been excluded. The outcomes for these categories are shown in Figures 3 and 4 respectively.

Figure 3) Outcomes of Subjects with Alcohol Dependence: 54 Subjects

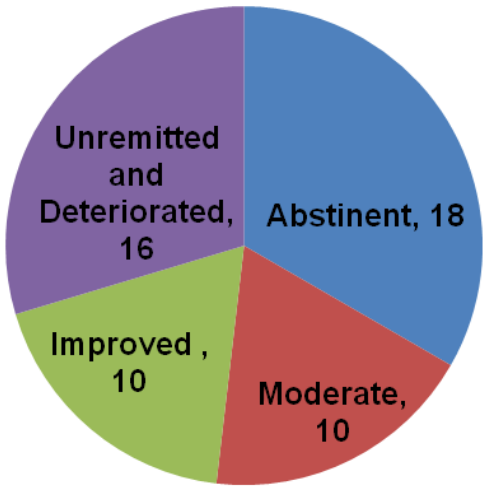
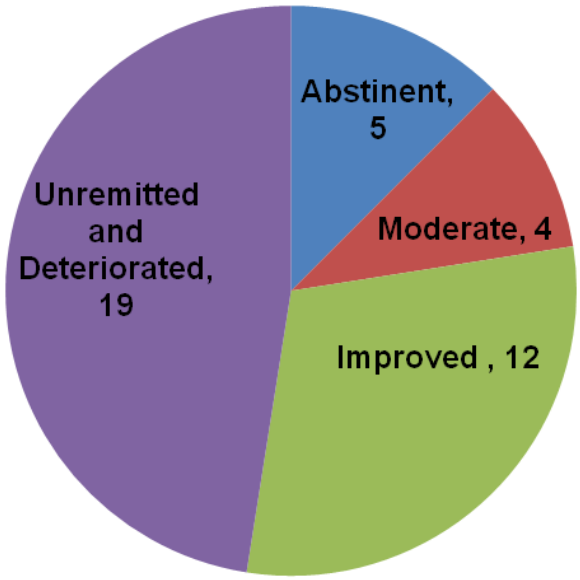


Figure 4) Outcomes of Subjects with Alcohol Abuse: 40 Subjects

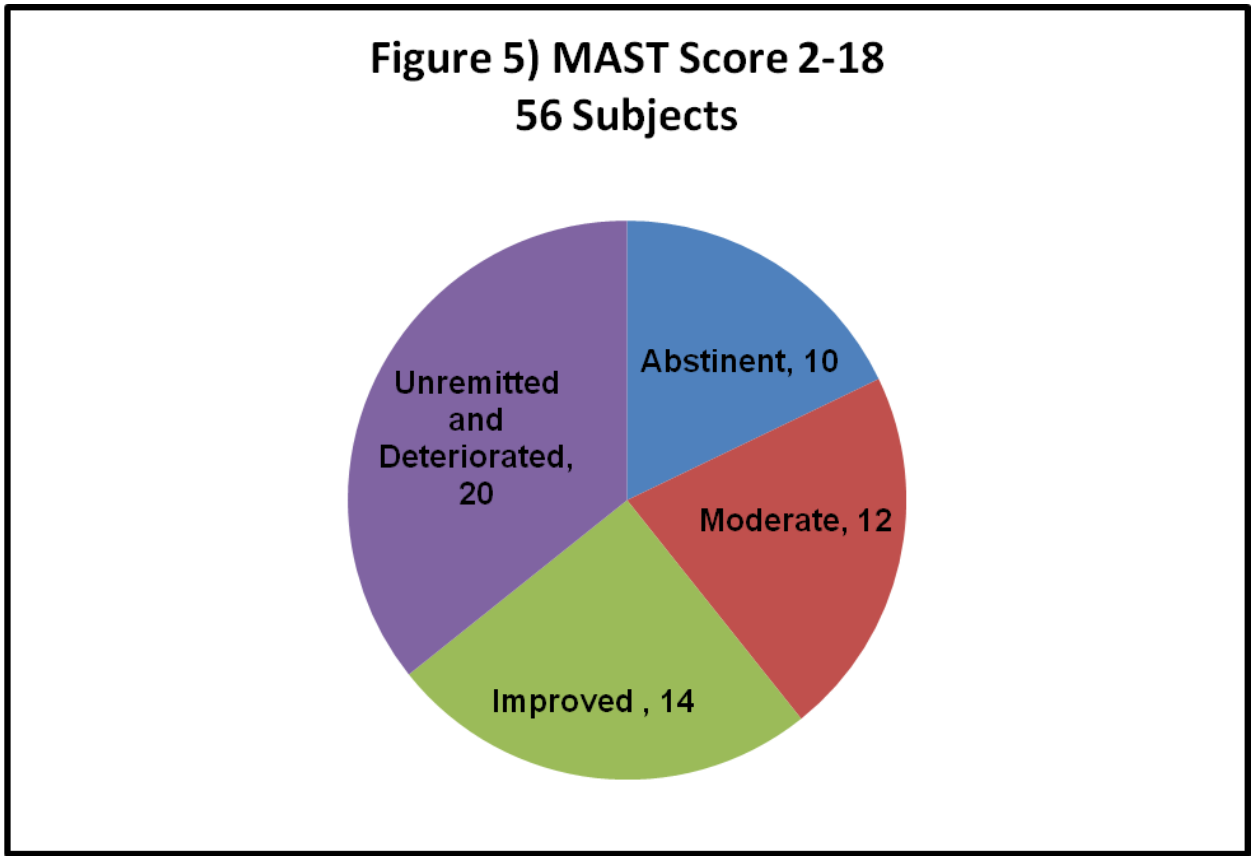


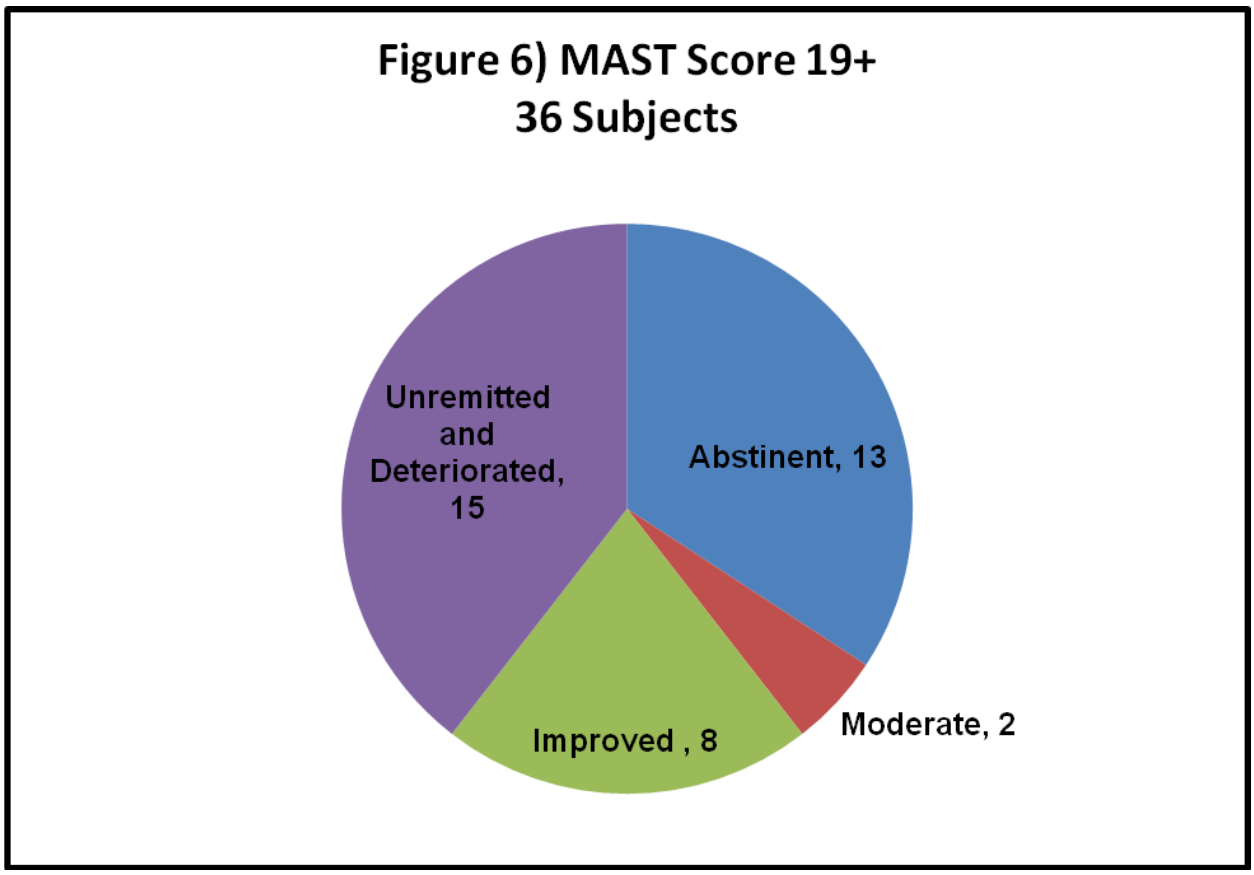
TREATMENT OUTCOME BY SEVERITY OF DEPENDENCE

Miller et al (1992) found that Moderate Drinking outcomes decreased and Abstinence outcomes increased in proportion to severity of Alcohol Dependence. However, Miller did not report any significant differences in Harm Reduction outcomes or Unremitted outcomes in proportion to severity of Alcohol Dependence. This suggests that Harm Reduction outcomes are unaffected by severity of Alcohol Dependence and that Harm Reduction may be the best goal for highly dependent drinkers who are unable or unwilling to achieve an Abstinence goal. This is a topic which is ripe for further investigation.

Miller used scores on the MAST (Michigan Alcohol Screening Test) and the ADS (Alcohol Dependence Scale) to determine severity of Alcohol Dependence. Scores on the MAST can range from 0 to 53. Scores on the ADS can range from 0 to 47. Miller et al (1992) classified subjects with MAST scores of less than 19 as having low dependence and subjects with MAST scores of 19 or greater as having high dependence. Subjects with MAST scores of 19 or more (high dependence) were significantly less likely to successfully moderate their drinking than subjects with MAST scores below 19 (low dependence) ($P = 0.0391 < 0.05$; Fisher's exact test). However, there were no significant differences between Improved drinkers with MAST scores below 19 (low dependence) and those with MAST scores of 19 or higher (high dependence). This suggests that severity of alcohol dependence is predictive of Moderate Drinking outcomes, but NOT predictive of Harm Reduction outcomes. It appears that drinkers can successfully practice Harm Reduction regardless of severity of Alcohol Dependence.

These results are shown graphically in Figures 5 and 6.





Miller et al (1992) also classified subjects with ADS scores of 21 or more as high dependence drinkers and those with ADS scores below 21 as low dependence drinkers; however, there were no significant difference found on the basis of this classification.

Miller and Wilbourne (2003) reanalyzed this data in more detail and found that no subject with a MAST score of 29 or greater achieved a Moderate Drinking outcome and no subject with an ADS score of greater than 28 achieved a Moderate Drinking outcome. However, Harm Reduction outcomes were as common with these more highly dependent subjects as they were with less dependent subjects as is shown in Figures 7 and 8. The lack of any unremitted cases in Figure 8 is undoubtedly an artifact of an excessively small data set. It is unfortunate that Miller and Wilbourne (2003) only provided us with percentages and not raw data. Further study of outcomes of more highly dependent drinkers with a much larger cohort is definitely called for. Moreover, it is possible that a larger cohort might have given us some Moderate Drinking outcomes.

Figure 7) MAST Score 29+

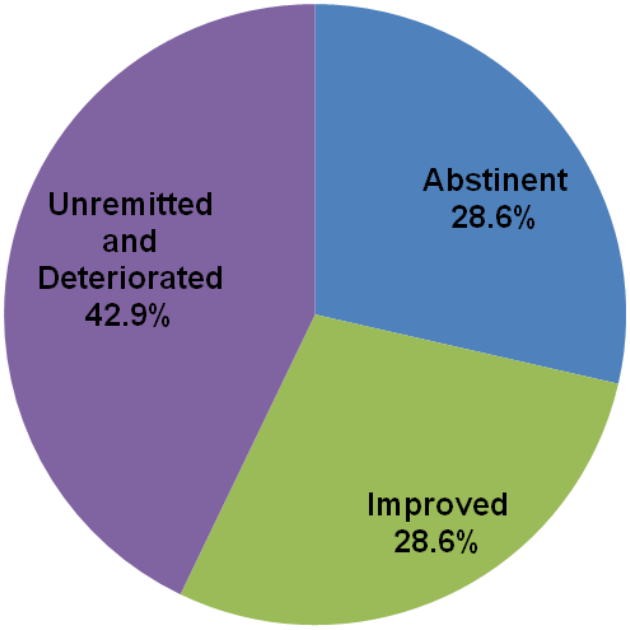
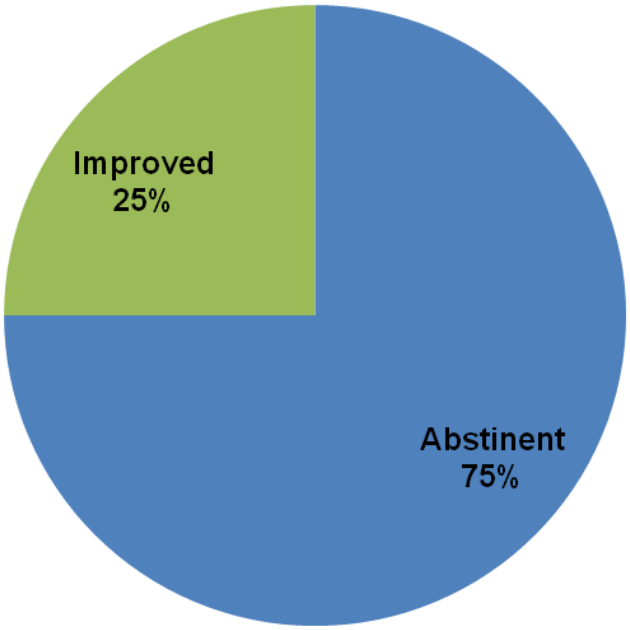
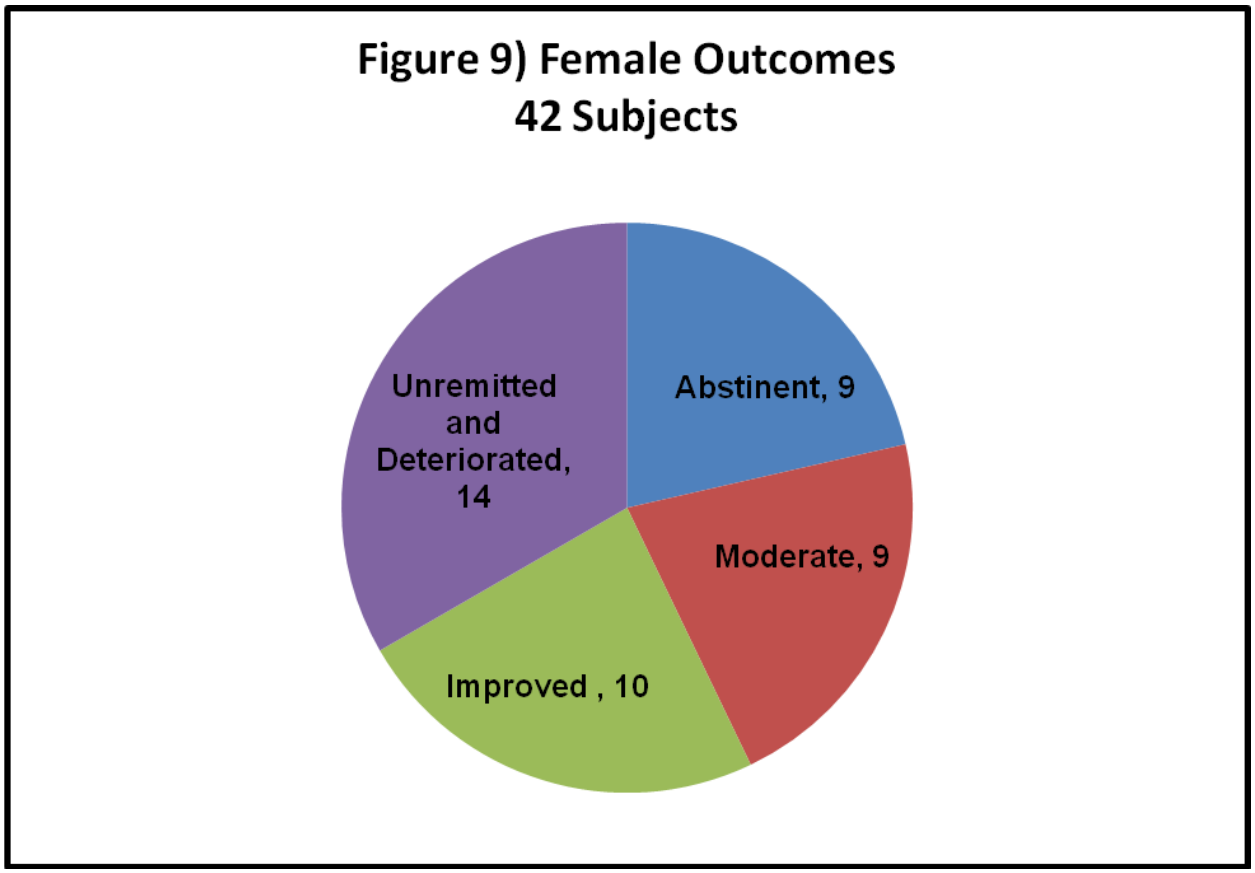


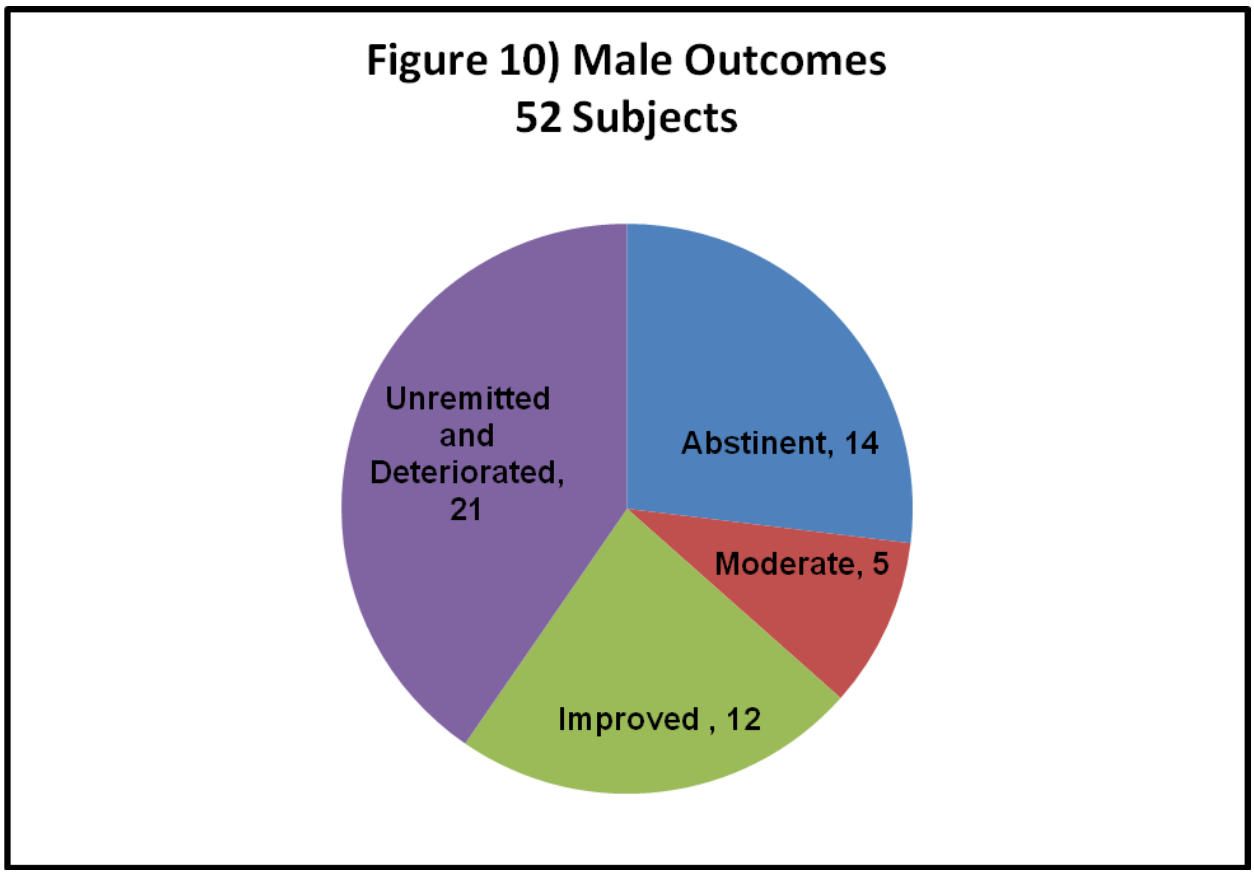
Figure 8) ADS 28+



SEX AND MODERATE DRINKING OUTCOMES

Many researchers have found that women are more likely to opt for and succeed with moderate drinking whereas men are more likely to choose abstinence. Miller et al (1992) also bears this out. We can see from Figures 9 and 10 that more women moderated than men; however, this did not reach statistical significance. (P = 0.1473 > 0.05; not significant; Fisher's exact test.) A larger sample size would be needed to demonstrate statistical significance.





AA ATTENDANCE

Miller et al (1992) found that successful Moderate Drinkers were significantly less likely to have attended AA than successful Abstainers ($P < .03$).

CONCLUSIONS

Miller's research clearly shows that even highly dependent drinkers can attain Harm Reduction outcomes. Although Moderate Drinking outcomes are linked to severity of dependence we did not see this same linkage with Harm reduction outcomes. However, we lack data for outcomes of severely dependent drinkers and this needs to be a topic for future research.

We also have the question of what the best intervention is for the Unremitted drinkers in this sample. Miller et al (1992) states, "What interventions *would* help these [unsuccessful] patients remains an open question. It is possible that for these individuals a more definitive and directive abstinence focused approach could be more successful." I would speculate that quite the opposite might be true. I would predict that a harm reduction approach which "meets people where they are at" and supports every positive change could bring some of the Unremitted into the Improved or Abstinent category and could also help to move people from the Improved category to the

Moderate or Abstinent categories. In addition, those in the Improved category could well be less symptomatic if they were practicing harm reduction.

I base this prediction on personal experience with harm reduction programs as well as in analogy to the great impact achieved by harm reduction programs such as needle exchange on the outcomes of drug users.

Miller et al (2001) also notes that the single most common outcome of abstinence based treatments is a Harm Reduction outcome involving reduced consumption and fewer alcohol problems. The next most common outcome is abstinence and only about ten percent achieve a Moderate Drinking outcome after abstinence based treatment.

It would be nice to see studies which compared harm reduction training with moderate drinking training and various forms of abstinence training to see what effect these various approaches might have on the outcomes of Abstinent, Moderate, Improved, and Unremitted. In particular it would be of interest to see if harm reduction training increased the number of improved drinkers. Since harm reduction approaches also offer non-coerced abstinence as an option it would be interesting to see if this resulted in more abstainers than traditional abstinence-only programs.

It is our hope that in the future some researcher will pursue these questions experimentally.

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