

THE IMPACT OF SELF-HELP GROUP ATTENDANCE ON RELAPSE RATES AFTER ALCOHOL DETOXIFICATION IN A CONTROLLED STUDY

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Abstract — Aims: Self-help groups such as Alcoholics Anonymous (AA) are widely recommended for aftercare of alcohol-dependent persons, even though scientific knowledge of its effectiveness is inconsistent. The aim of the present analysis was to elucidate whether persons attending AA groups regularly after detoxification have lower relapse rates within 1 year, compared to persons without self-help group attendance. **Methods:** Data for the present analysis were derived from the placebo-group of a multi-centre study in Germany (Wiesbeck *et al.*, 2001). Patients were free to choose either self-help group attendance ($N = 50$) or no support ($N = 28$). **Results:** After 1-month of follow-up, there was a lower relapse rate in patients attending a self-help group as compared to the control group, a difference, however, that leveled off during the following months. Moreover, relapse rates did not differ significantly at any point of time between both groups. Levels of social functioning improved in both groups over 1 year. **Conclusions:** The present study was unable to show an advantage of self-help group attendance in reducing relapses compared to the control group.

INTRODUCTION

Empirical research on alcoholism and its treatment corroborates that in the disorder of alcoholism relapses are rather the rule than the exception and that the first half year after treatment contains the highest risk of relapses (Körkel, 1996). After the first month following an alcohol detoxification, relapse rates range between 19% for inpatients and 34% for outpatients and increase to about 46 and 48% respectively, after 6 months (Hayashida *et al.*, 1989). It is presumable, therefore, that after an alcohol detoxification, any subsequent outpatient support could endorse abstinence. In addition, comparison of different aftercare modalities revealed that patients who obtained no aftercare had the poorest drinking outcome (Ouimette *et al.*, 1998).

There is a widespread belief in the effectiveness of Alcoholics Anonymous (AA) in the treatment of alcoholism, even though scientific findings are inconsistent. While positive effects of participation in AA on drinking outcomes have been reported (Emerick *et al.*, 1993; Watson *et al.*, 1997; Connors *et al.*, 2001; Gossop *et al.*, 2003), other studies found no positive impact of AA on drinking outcomes (McLatchie and Lomp, 1988; Montgomery *et al.*, 1995). Accordingly, a meta-analysis of 74 studies revealed that AA experience and drinking outcome are rather heterogeneous (Tonigan *et al.*, 1996) and the recently published Cochrane meta-analysis did not find an unequivocal effectiveness for AA regarding drinking outcome (Ferri *et al.*, 2006). These discrepancies could be due to the existence of a wide range of different self-help groups. Apart from various group approaches, several findings indicate that differences exist even among AA organizations, because they differ from place to place in group processes, members, and atmosphere (Montgomery *et al.*, 1993). However, all self-help groups share important

similarities such as the reference to a non-professional, peer-operated organization, where group members give and receive advice. Furthermore, participation in a self-help group provides the opportunity to meet others who have had similar experiences and problems, thereby being supportive and helpful in sharing their own experiences and expanding the social network with likeminded and non-drinking persons. In spite of all cultural differences, AA groups act on the same basic principles, namely, the twelve steps, worldwide. These twelve steps include the belief in a higher power, such as God, which helps in recovering. So, it could be argued that religious people would benefit more when attending AA, but a study revealed that atheists and agnostics benefited equally as did people with religious belief; thus, belief in God appears not to impact AA-related benefit (Tonigan *et al.*, 2002).

Regular AA attendance once a week seems to be associated with superior drinking outcome (Fiorentine, 1999; Gossop *et al.*, 2003; Ouimette *et al.*, 1998). However, no additional effect can be obtained when the frequency of attendance is increased to more than twice a week (Watson *et al.*, 1997). Thurstin *et al.* (1987) found higher rates of abstinence for AA attendees only after 18 months, but not after 12 months. These findings are supported by studies of Moos and Moos (2004) suggesting that for a better alcohol-related outcome, the duration over time is more important than the frequency of AA attendance. In those studies it could be demonstrated that a rapid entry into AA and a longer participation after detoxification promise better 1- and 8-year outcomes (Moos and Moos, 2004).

Taking the points of criticisms in Tonigan's meta-analysis (Tonigan *et al.*, 1996) into account, that most AA studies are of a low study quality and miss biological markers to corroborate abstinence, the aim of the present analysis was to investigate the impact of AA on abstinence within the bounds of a large pharmaceutical study. This implies two advantages, namely (i) biomedical parameters were used to corroborate patients' self-reported abstinence and (ii) participants' expectation of change was focused on drug effectiveness rather than on the additional AA participation.

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METHODS

Data were obtained from a randomized, placebo-controlled pharmacological study conducted in 13 alcohol treatment centres in Germany (Wiesbeck *et al.*, 2001). To avoid any interaction with pharmaceutical medication, only patients from the placebo-group were included in this analysis. Patients had to join the study for at least 30 days and had to either visit a self-help group or receive no treatment (control group). On the basis of these criteria a total of 78 patients was selected, of whom 50 patients had visited a self-help group regularly and 28 patients had no additional treatment.

In the original study, patients had to fulfil at least six DSM-III-R criteria for moderate or severe alcohol dependence and had to reach a score of ≥ 11 in the Munich Alcoholism Test (Feuerlein *et al.*, 1980). For comorbidity of depression and anxiety disorders, a cut-off score of >18 on the Hamilton depression rating scale (Hamilton, 1960) and a cut-off score of >16 on the Hamilton anxiety rating scale (Hamilton, 1959) respectively, were used as exclusion criteria. The social functioning questionnaire (SFQ) was used to assess social functioning in everyday life situations (Tyrer *et al.*, 2005). Low scores indicated better social functioning than high scores, whereas a score of more than 10 stood for poor social functioning. Conditions for participation in this study were the absence of severe physical, neurological and psychiatric disorders requiring specific medication and the intention to remain abstinent in future. Data of abstinence were based on self-reports and on biological parameters such as alcohol breath-test and liver enzymes. Any alcohol consumed was counted as a relapse.

After alcohol detoxification, patients were recommended to attend a self-help group but were free to decide whether they wanted to attend a self-help group or not. Offered self-help groups were AA or other 12-step-programmes, whereas other approaches like relapse-prevention or cognitive behavioural programmes were excluded from this analysis. Patients in self-help groups attended the meetings once a week. The study consisted of a 6-month medication period followed by a medication-free 6-month period. During the first half year participants had to visit their investigator every second week to receive their i.m. placebo injection. Additionally, every 4th week, participants had a physical examination, with blood samples taken for laboratory tests and filled self-report questionnaires to corroborate abstinence from alcohol. In the medication-free second half year, the same visits took place every eighth week. Follow-ups, where participants had to fill questionnaires such as Hamilton Anxiety Inventory (HAMA), Hamilton Depression Inventory (HAMD) and social functioning questionnaire (SFQ), took place after 3, 6, and 12 months. None of these visits included any therapeutic intervention.

Statistical analysis

The main interest during the year was focused on abstinence, which was operationalized by the relapse rate as a dichotomous variable. To investigate relapse rates at follow-ups, chi-square tests were used. To reveal relapse rates over time a Kaplan-Meier survival analysis (log-rank test) was used.

Differences of group characteristics were analysed using a one-way analysis of variance (ANOVA). If the variances were heterogeneous, a *t*-test for independent samples for unequal variances was used. To evaluate whether there were predicting variables for relapse or not, a stepwise logistic regression was used. To observe changes such as social functioning level over time, repeated ANOVA measurements were conducted for study completers only. The scores for the measures were tested for deviation from normal distribution by means of the Kolmogorov-Smirnoff test. To justify whether differences were substantial, two-tailed post hoc power analyses were applied (Altman, 1991; Faul and Erdfelder, 1992). All calculations used an alpha significance level of 0.05 and were interpreted two-tailed. All analyses were conducted by using the statistical software program SPSS Version 11.0 for Windows. Analysis of relapses was based on intention-to-treat (ITT), i.e. drop-outs were counted as relapses.

RESULTS

There were no differences in age, scores in the MALT, or number of DSM-III-R criteria for alcohol dependence between patients in a self-help group ($N = 50$) and the control group ($N = 28$). Moreover, no difference in anxiety (HAMA) or depression (HAMD) between both groups existed at the beginning of the study. The only significant difference between both groups was the level of social functioning (SFQ), $t(76) = 2.51$, $P = .037$. Compared to the control group, patients choosing a self-help group possessed a lower score in the SFQ, indicating a better social functioning level. No differences were found between the groups concerning the number of days remaining in the study, the days until the first relapse, or drop-out rate (Table 1). At the end of the observation period, after 1 year, the study retention was 58% ($N = 29$ out of 50) for patients in self-help groups and 61% ($N = 17$ out of 28) for patients without support.

Table 1. Characteristics of the groups

	SHG ($N = 50$)		Controls ($N = 28$)	
	Mean	SD	Mean	SD
At the beginning of the study				
Age (years)	42.1	7.5	43.9	8.6
Scores of MALT	33.4	5.5	35.3	6.3
Number of DSM-III-R criteria of alcohol dependence	8.3	0.9	8.2	1.1
Smoker (%)	74	—	71	—
SFQ-score	13.8	2.9	15.8*	4.2
HAMA-score	4.4 ^a	7.6	4.9	5.9
HAMD-score	1.9 ^b	2.6	2.8 ^b	3.9
At the end of the study				
Drop-outs after 1 year (%)	42	—	39	—
Days in the study	253	112	268	98
Days to first relapse	57	70	53.7	79

* $P < .05$.

^a 1 value is missing.

^b 2 values are missing.

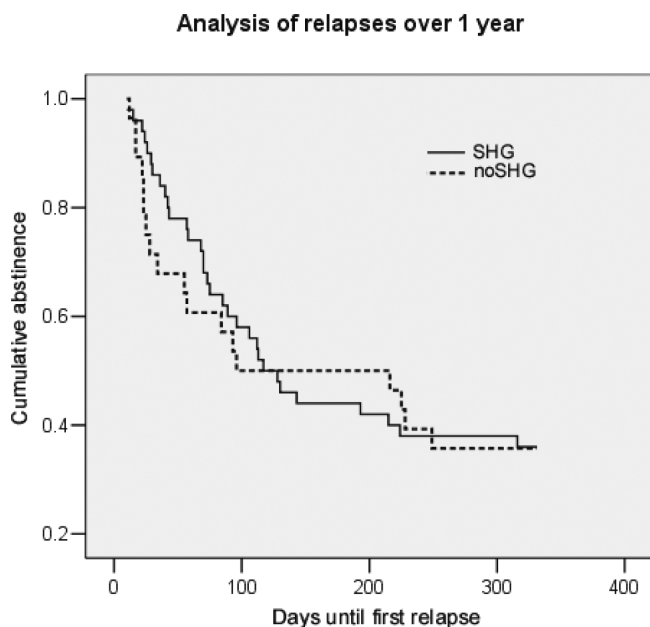


Fig. 1. Process of relapses for self-help group (— SHG) versus control condition (--- noSHG) over 1 year.

Comparison of relapsed and abstinent patients after 1, 3, 6, and 12-months follow-up revealed no differences between both groups. To take the factor time into account, a Kaplan-Meier survival analysis was conducted (Fig. 1). After 1 month, the relapse rate of the self-help group was with 14.0% ($N = 7$ out of 50) lower than that of the control group with 28.6% ($N = 8$ out of 28) which, however, did not reach significance, log-rank, $P = .106$. After 3 months, relapse rates were 40.0% ($N = 20$ out of 50) versus 42.9% ($N = 12$ out of 28) and after 6 months 56.0% ($N = 28$ out of 50) versus 50.0% ($N = 14$ out of 28). Thus the positive impact of self-help groups leveled off over time, as indicated by relapse rates of 64.0% ($N = 32$ out of 50) patients in the self-help group and 64.3% ($N = 18$ out of 28) in the control group after 1 year. A power analysis for this sample ($N = 78$) yielded a power of 0.60, calculated with an estimated magnitude of effect drawn from two studies finding a difference between self-help group attendance and control group in drinking outcome (Moos and Moos, 2004; Ouimette *et al.*, 1998). In the completer analysis, again no difference in relapse rates was found. Out of all completers, a proportion of 37.9% ($N = 11$ out of 29) in the self-help group and 41.2% ($N = 7$ out of 17) in the control group had relapsed after one year. To find out whether the difference of social functioning at baseline had a confounding impact on outcome, SFQ was adjusted. When excluding the three highest scores of the control group, SFQ did not reveal any difference anymore, $t(73) = 1.37$, $P = .175$. All the calculations on abstinence outcome were analysed again but did not reveal different results.

To check whether any pre-treatment variable might have a predictive value for relapses after 12-months, a stepwise logistic regression was conducted. Pre-treatment variables such as age, anxiety score (HAMA_{t0}), depression score (HAMD_{t0}) and social functioning score (SFQ_{t0}) were included in this analysis. The logistic regression revealed

a one-variable solution with an Odds Ratio of 1.359 (95% Confidence Interval [CI] = 1.010, 1.829; $P = 0.043$) for the depression score (HAMD_{t0}) at baseline. All other variables were excluded. The goodness of fit accounted with $R^2 = 0.12$ (Nagelkerke) for only 12% of the variance of the total model. Only 40.7% of the participants who stayed abstinent were classified correctly as abstinent, whereas 82.6% of the observed relapses were classified correctly as relapsed, with an overall prediction rate of 67.1%.

Changes in the variables HAMA, HAMD, and SFQ during the study were analysed for completers only (SHG, $N = 25$; Controls, $N = 17$). HAMA and HAMD revealed no changes due to time or group allocation. Interestingly, however, there was an improvement in the social functioning level in both groups over 1 year, as indicated by the social functioning level exposing the factor of time, but not group allocation, as significant, $F(2, 84) = 7.61$, $P < .001$, corrected for Greenhouse-Geisser because sphericity was not given (Fig. 2). To estimate the relevance of the improvement in the social functioning level from the beginning to the end of the study, a post hoc, within-subject, power analysis was calculated for each group separately. The improvement in social functioning for the self-help group yielded a power of 0.83 compared to the control group, which yielded a power of 0.75 for improvement within 1 year (Altman, 1991).

DISCUSSION

Though reports concerning the effectiveness of self-help groups are contradictory, 12-step approaches such as AA reap the benefit of a widespread belief in its effectiveness. The present analysis was performed to elucidate whether attendance in a self-help group after alcohol detoxification may enhance abstinence. However, despite a slightly lower relapse rate after 1 month in the self-help group, no positive impact of self-help group attendance on relapse rates after 1 year could be found, which is in line with the results of the Cochrane review of AA (Ferri *et al.*, 2006). The 1-year abstinence outcome of 36% found in this sample is supported by other reports on 1-year outcomes after alcohol detoxification. In an uncontrolled Indian study, 33% (Kuruvilla *et al.*, 2004) and in a controlled American study 43% attending AA versus 21% of the control group stayed abstinent after 1 year (Moos and Moos, 2004).

All participants of the present study attended AA meetings once a week, which is in line with the suggestion of regular AA attendance once or twice a week to support abstinence (Ouimette *et al.*, 1998; Fiorentine, 1999; Gossop *et al.*, 2003). It is possible that the duration of observation in the present study was not long enough. In their study Thurstin *et al.* (1987) found a positive effect for AA participation only after 18 months but not after 12 months. Further evidence for this has been presented by Moos and Moos (2004) supporting the hypothesis that the duration of AA participation is more important than the frequency.

The self-selection of treatment compared to random allocation can be seen as a confounding factor. But on the other hand, a randomized group allocation could lead to a coercion for participants with negative beliefs and preferences about

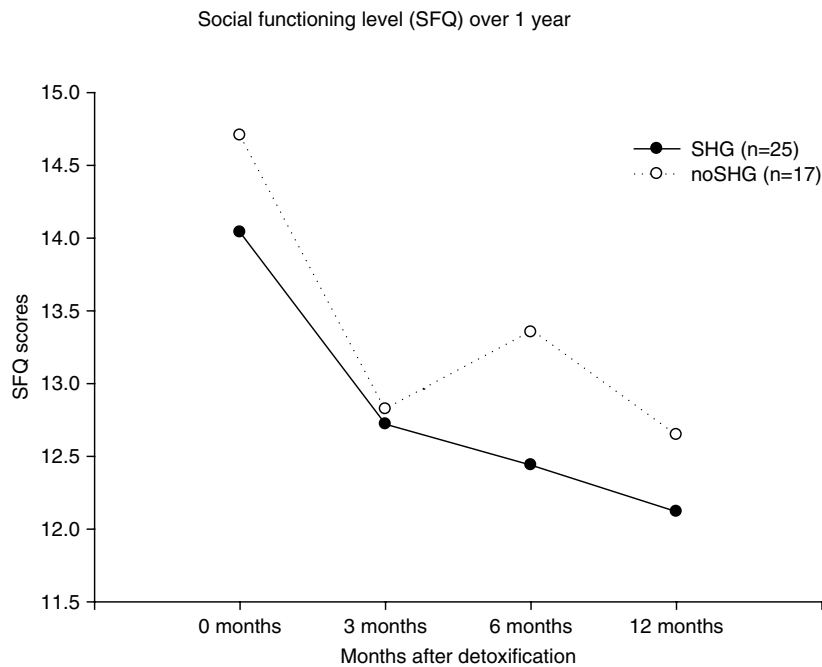


Fig. 2. Completer analysis of social functioning level for self-help group (— SHG) and control group (--- no SHG) during the observation period.

AA and bias the effect and intrinsic value of AA. In the original study, participants were allowed to choose the kind of treatment, which is more likely to reflect the real-world effectiveness in the treatment of alcoholism. Moreover, it can be presumed that self-selected treatment is associated with a higher motivation for abstinence, and enhances the probability of staying abstinent in the group of AA, which would in total rather support a possible positive effect of AA than attenuate it.

Those patients who chose AA showed even at the beginning of the study, a better social functioning level than the controls. Whether the social functioning level might have contributed to group selection, because patients with a lower social functioning level might hesitate to choose group treatment, or whether it is coincidental, remains to be clarified. Interestingly, however, there was an improvement of the social functioning level in both groups over 1 year, though empirical research reveals that an improved social functioning level is predominantly related to AA participation (Humphreys *et al.*, 2004; Moos *et al.*, 2001). The 12-step programme predicts better general friendship characteristics such as number of close friends and better substance abuse-specific friendship characteristics, (e.g. proportion of friends abstaining from drugs and alcohol) at follow-up (Humphreys and Noke, 1997) which helps to strengthen social functioning. The reported advantage of AA with regard to improving social functioning is probably reflected in the statistical power, which is a little bit higher for the self-help group than for the control group (0.83 vs 0.75). An explanation of the improvement of social functioning in both groups may be the study performance, which included many regular meetings with investigators in the first half year and loose meetings afterwards.

Looking for predictive variables of relapses, the depression score (HAMD) was found to be slightly predictive but

accounted for only 12% variance of the model. In general, this variance is too low, but considering that all persons with HAMD scores of more than 18 were excluded to control for comorbidity, it is remarkable that even sub-clinical depressive scores showed a slight predictive value. Research on relapse predictors revealed that participants with mild-to-moderate depressive symptoms were 2.9 times more likely to relapse than were non-depressive controls, while participants with severe depressive symptoms were 4.9 times more likely to relapse (Curran *et al.*, 2000). By contrast, other investigators found that neither lifetime major depression (Miller *et al.*, 1997), nor the degree of depressive symptoms are predictive of relapses (Sellman and Joyce, 1996). Further investigations are required to clarify whether sub-clinical depression scores can predict relapses in non-depressive persons.

Prior studies suggested effective variables for AA research, which were not investigated in this study. Thus, affiliation with AA has been found to be more predictive of maintaining abstinence than AA attendance alone (Longabaugh *et al.*, 1998; Montgomery *et al.*, 1995; Morgenstern *et al.*, 1997). Likewise there is evidence that increased abstinence is not mediated by AA attendance alone, but rather by a positive relationship between AA participation and self-efficacy to avoid drinking, which in turn predicts more abstinent days (Connors *et al.*, 2001). In the present analysis, there was no control for affiliation with AA or perceived self-efficacy to avoid drinking.

The strength of the present study is that data were drawn from a multi-centre, randomized, placebo-controlled trial investigating the effectiveness of a pharmaceutical drug for relapse prevention. Since the expectations of changes were focused on medication rather than on group attendance, the risk of running a self-fulfilling prophecy about the effectiveness of AA was rather low. Of further benefit was the

prospectively controlled design, i.e. no measure was biased by retrospective statements and both subjective and objective parameters about alcohol consumption were used to assess relapses.

In conclusion, the findings in this sample revealed no advantage in AA participation on drinking outcomes compared to the controls in 1 year. A limitation of the study is that the allocation of treatment was self-selected and not randomized, which might be a confounding factor, even if self-selected treatment reflects the naturalistic setting in the treatment of alcoholism more and would rather be a benefit for AA than for controls. Interestingly, however, even though patients choosing AA showed a better social functioning level at the beginning, both groups showed an improvement in social functioning at the end of the study.

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