



Long-Term Follow-up of Young Children and Adolescents with Parental Alcoholism Who Attended a Group Support Programme for Children 1993-2000

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Abstract

Introduction The aim was to follow-up children, of parents with alcohol problems, who joined a group support programme in Malmö, Sweden from 1993–2000. Our intension was to investigate mental health and social well-being in these children over a long period of time.

Method Two follow-ups were conducted, in 2003 and in 2018. In 2003 the follow-up, included a semi-structured interview and six self-report scales (SCL-90, Coping with parent's abuse, Social interaction, AUDIT, DUDIT and a Stress questionnaire). In 2018 the same scales were used, complemented with the EQ5D questionnaire and a standardized life situation formula.

Results In 2003, 50% of the 44 attendees worked full-time or part-time. However, sons showed higher values on AUDIT and DUDIT (alcohol and drug use). In 2018, half of the 25 attendees had continued to study. Coping, AUDIT and social interaction changed significantly over time, coping and AUDIT for the better. The EQ5D showed lower quality of life compared to the normal Swedish population, and the life situation questionnaire revealed high levels of stress.

Conclusion Most attendees had completed their school education, and half of them reported further studies. However, in the 2018 follow-up, they showed increased mental and physical symptoms.

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Introduction

The negative influence of parental alcohol problems on their children's well-being has been discussed in several national and international articles over the years. This includes an increased risk among the children to develop alcohol or drug problems (1–3) as well as mental health problems (4–7). In a study by Haugland et al (7), the authors found that parental alcohol intoxication was associated with adverse mental health among the offspring. Balsa et al (6), investigated long term impact of parental drinking on their children, and they found that parental problem drinking was associated with significant mental health consequences for children

that persist far into adulthood. Others have stressed an increased risk for negative school achievements and shorter school career due to conditions at home (8–10), and that excessive alcohol consumption among mothers during childhood is consistently negatively associated with the educational outcome of the children, in terms of years of education (11). Torvik et al. (10) found that offspring of alcohol dependent parents had moderately elevated attention and conduct problems, which had an impact on their school achievements. Maternal problems were particularly predictive of such problems.



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Several studies exploring sex differences between sons and daughters with alcohol dependent parents and the effects on the children's drinking, health and adaptation, have been carried out using different methods and with varying results. Rydelius (12) conducted a 20-year follow-up on children of fathers with alcohol problems, and found that daughters adapted reasonably well, while sons generally experienced more restlessness and hyperactivity, school problems, delinquency, and alcohol abuse. Other studies have shown that daughters show more depressive and agony symptoms compared to sons (13). Some have emphasised the impact of genetic factors on alcohol use in daughters during adolescents, while sons seemed to be at higher risk of externalizing behaviour (14). Morgan et al (15) stressed that interaction between gender and parental alcoholism was specific to certain disorders but varied in its effects. In general daughters of alcoholic mothers appear to be at greater risk for adult psychopathology. There is no international review in this research area, which make it difficult to estimate the overall effects. However, some studies (4,6,13,14) incline that sons seem to be more vulnerable for developing alcohol or drug problems, while daughters seem to be more at risk for developing depression and anxiety symptoms. There certainly is a need for more investigations on the differences in well-being between sons and daughters of alcohol dependent parents.

Concerning follow-up Haugland and co-workers (7) followed children with parental alcohol problems for four years and found that parental alcohol intoxication was associated with adverse mental health problems among the offspring. Moos et al (16), followed alcohol dependent men, their partners and children for 10 years. They found that both parents' alcohol problems and parents' own mental and physical health and coping affected their children's well-being. In addition to Rydelius (12) however, long-term follow-up of well-being into adulthood of children who grew up with alcohol dependent parents are rare. One exception is the Kauai-study (17) where the authors identified aspects of the child and qualities of the caregiving environment and stated the great importance of the sober parents in the families and the positive effect of a well-functioning social network for children's well-being.

Intervention programmes directed towards support to children with parental alcohol problems and longitudinal follow-up of these children are sparse. In the group support programme for children called "Children Are People" (CAP) which have been used in Sweden by, for example, Ersta Hospital, offspring were investigated by Lindstein (18), Stockholm University, in a qualitative 10-year follow-up study. According to the attendees, the

programme was of great importance and led to increased knowledge and insight as well as a positive change in life situation.

The lack of longitudinal follow-up of group support programmes in this area means that we have limited knowledge of the effects of the group support programmes and how childhood experiences effect health and social situation up to adulthood. In the present study we have followed the attendees for 17-25 years. Two follow-ups were conducted, one in 2003 and another in 2018. The primary aim of this study was to investigate the mental and social well-being of the attendees over a long period of time. Secondly we wanted to investigate differences between sons and daughters.

Method

In this study the 72 people, who participated in the group support programme in Malmö from 1993 to 2000 due to parental alcohol problems, were invited to participate in a follow-up in 2003. Another follow-up was conducted in 2018 inviting the participants from the follow-up in 2003. The two follow-up studies were approved by the local ethics committee at Lund University, reg. no. 2017/211.

Presentation of the group support programme

The group support programme was running in Malmö, Sweden, from 1993 to 2000. It was a clinical cooperative project between the Department of Child & Adolescent Psychiatry (DCAP) and the Addiction Centre (AC) at Malmö University Hospital to some part inspired by the CAP programme but were conducted by two therapist, one male and one female from the DCAP. The group therapists were well versed in the problem area. A male and a female therapist were chosen to add stability to the group, but the method did not focus on gender differences unless a specific question was asked during the group sessions. The primary aim of the group support programme was to prevent harm and negative development of alcohol or mental health problems among the children by helping them express thoughts and feelings connected to the parental alcohol problem in their home.

Recruitment

In total, 72 young children and adolescents (aged 9-18) were recruited openly from AC, DCAP, the Social Services, the Primary Health Care and via the school health personnel in Malmö. In a few cases, adolescents themselves or parents contacted the support group administrator for information and help. For attendees below 15 years of age, permission to participate in the support group programme was obtained from at least one parent.



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Group support intervention

Important aims of the group support programme were the following:

- provide information about alcohol dependency,
- help the attendees cope with situations due to alcohol problems in the family,
- give the attendees the opportunity to meet others in a similar life situation and to share experiences under the supervision of group therapists.

Frame and content of the programme

The attendees of each group met 1.5 hour once a week on 20 occasions. In most of the support groups, the number of attendees varied between four and six children. The work sessions were administered by one male and one female therapist from CAPD. After completion of the programme, the attendees in each group were offered a follow-up group meeting after six months.

The methods used in this mixed support programme group were adjusted to the age of the children and varied between playing, painting situations and feelings, reading, oral information concerning alcohol from the therapists, and group discussions. Painting situations and feelings were often used to open the discussions. The programme was similar to other group support programmes for children of alcohol dependent parents in this area concerning framework, timespan and to some extent content. It was however unique in being a cooperation programme with personnel from each treatment field, i.e. child psychiatry and alcohol dependency. Furthermore, the groups were relatively small and two supervisors, one from each treatment centre (AC and CAPD), were engaged in the project and met the group leaders after each group sessions.

After completing the group support programme, each attendee received a letter to their home address in which they were asked to anonymously evaluate the support.

Fourteen groups of children joined the programme, and the group support programme was conducted over seven years. Accordingly, there was a considerable time span between the attendees in the first and last group.

Procedure

Follow-up 2003 (3-10 years after attending the group support programme)

The attendees, all 18 years or older at this time, were contacted via mail or telephone and gave written informed consent to participate in the study. The first follow-up included a 1.5-hour personal semi-structured interview about the attendee's social situation, including work and study situation, family functioning, experiences

of being brought up in a family with alcohol problems, and future goals. The follow-up interviews were conducted by the two supervisors for the group leaders, who had not met with the attendees in the group sessions. The attendees completed six self-report scales (see description below).

Follow-up 2018 (17-25 years after attending the group support programme)

For this follow-up the attendees were first contacted and informed via telephone. The attendees received written information via mail, and after giving written informed consent, they completed eight self-report scales.

Outcomes

The mental and social well-being was the primary outcome in this study, measured with a semi-structured interview and self-reported scales. Because alcohol and drug abuse are known to have a negative impact on social and mental well-being, we also included alcohol- and drug related scales.

In the first follow-up the attendees filled out the scales after the semi-structured interview, alone in a separate room. In the second follow-up the questionnaires were sent by mail to the attendee.

Self-report scales

The Symptom Checklist 90 (SCL-90) (19) is a 90-item self-report symptom inventory primarily designed to reflect the psychological symptom pattern of psychiatric and medical patients during the last seven days. Each item on the list is rated on a 5-point scale of distress ranging from "not at all" to "extremely". The scale has been normalized for the Swedish population, and the reference mean value is 0.6 for women and 0.4 for men (20).

The Alcohol Use Disorders Identification Test (AUDIT) (21,22) is a 10-item screening questionnaire, each with a score of 0-4 points (total range 0-40). The items cover three domains: total amount of alcohol consumed, number of high-consumption occasions, and consequences of drinking (alcohol related problems). The cut-off points indicating drinking problems are six or more for women and eight or more for men (23,24).

The Drug Use Disorders Identification Test (DUDIT) (25) is a parallel instrument to AUDIT, only with 11-items, each with a score of 0-4 points (total range 0-44). The cut-off for drug related problems are two points or more for women and six points or more for men.

The Interview Schedule for Social Interaction (ISSI) (26) is a 30-item interview schedule that measures the



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availability and perceived adequacy of a wide range of social contacts and relationships. It is divided into four subscales: availability of social integration (AVSI), adequacy of social integration (ADSI), availability of attachment (AVAT), and adequacy of attachment (ADAT). The maximum score is 30 points, and a higher score indicates more relations to family, friends, neighbours, and colleagues. Individuals with total scores below 20 are regarded to have a poor social network.

Dealing with Parent's Abuse Questionnaire (Coping) was developed by Zetterlind & Hansson (2001) at Department of Clinical Alcohol Research, Lund University, Sweden. It is an unpublished scale, which uses self-assessment, based on the Coping Behaviour Scale (27). It was reworked and adapted to the target group and validated locally. The questionnaire concerns five areas of coping behaviour and measures how children who have been brought up in families with alcohol problems cope with these problems and how they relate to family members. The scale contains 37 questions, and the maximum score in this study was set to 148, and a low score is preferred compared to a high score.

The Stress Questionnaire was developed by Hasson and Arnetz as a public web-based tool for regular individual assessment, and its validation was described in 2005 (28). The questionnaire consists of seven questions with response alternatives from "very good" to "very poor". The questionnaire was constructed by sampling different aspects of stress from existing publications. The most relevant area was found to be current health status. Total scores are in the range of 0-700 points. A lower score indicates a lower level of stress. Cut-off is 288 and 318 for men and women respectively (29).

The EQ5D L3 – Health Questionnaire, developed by the EuroQol Research Foundation (30), is a self-administered postal questionnaire in which respondents classify their own health status. It is a generic quality of life instrument used in clinical studies, that reflects the severity of five dimensions, mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, at three levels of severity: no problems, moderate problems, or severe problems. The levels have been dichotomised into "no problems" and "problems" and the higher score the more problems are experienced. Overall health is measured with a Visual Analogue Scale (VAS) from 0-100 with higher score representing a better health. The questionnaire is cognitively undemanding, and it takes only a few minutes to complete. The scores from this study will be compared to those for the Swedish population (31).

The Life Situation Questionnaire was developed by Zetterlind & Hansson (2018) at Department of Clinical Alcohol Research, Lund University, Sweden. It is an unpublished scale, where the attendees were asked to answer questions about their life situation, social life, education, well-being, and present work situation.

Statistics

Differences in proportions were tested with the chi-square test, and differences between means were tested using Student's t-test. Changes from the first to second follow-up were investigated using paired-samples t-tests. A two-sided p-value of <0.05 was regarded as significant. Results are presented as means and standard deviations.

Possible differences in outcome variables between the attendees with respect to the time span between participation in the group support programme and follow-up were investigated by Kruskal-Wallis one-way analyses of variance by dividing the attendees into three groups (less than 3 years, 3-5 years and more than 5 years) with respect to their inclusion in the group support programme. As no significant differences were found between these groups, the attendees were considered as one group in further statistical calculations. Participants were excluded from an analysis if they did not provide the relevant information. Stata IC version 15 and the Statistical Package for the Social Sciences (SPSS) 25 were used for statistical calculations.

Results

Of the 72 young children and adolescents who participated in the group support programme from 1993 to 2000, 44 (61%) agreed to participate in the first follow-up in 2003 (see flowchart in Figure 1). Of the 28 (39%) non-participants one man passed away due to drug problems. Of the 44 participants in the first follow-up 25 (57%) took part in the second follow-up.

The characteristics of the attendees in 2003 and 2018 are presented in Table 1.

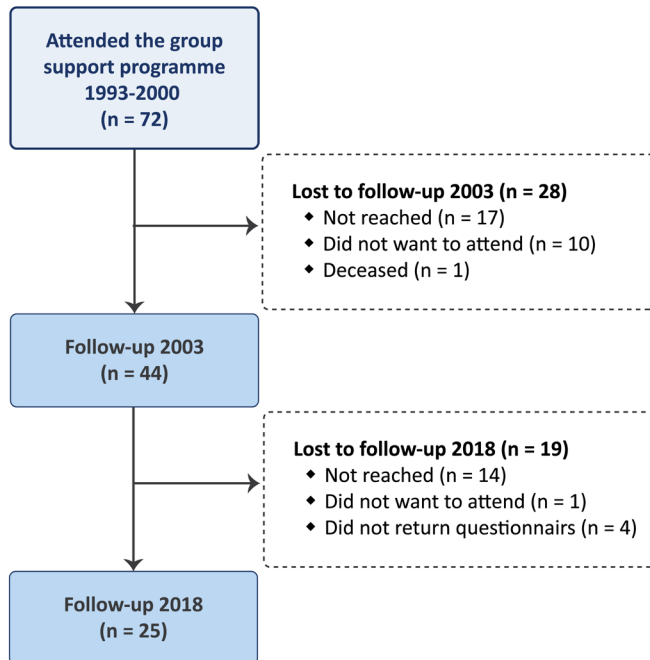
The 2003 follow-up

In the semi-structured interview, 14 attendees reported that both their parents had problems with alcohol; 14 reported mothers only and 16 fathers only. At this time, seven of the parents with alcohol problems were deceased. Most of the parents with alcohol problems (75%) were still problem drinkers, and two-thirds of the parents were divorced. The attendees who had moved from their parent's home (30%) had moved at an average age of 17 years old. Results for the follow-up in 2003 are presented in Table 2.



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Figure 1. Flowchart showing the follow-up status of the initial 72 children and adolescents participating in the group support programme.



Women were significantly less prone to use drugs (DUDIT) compared to men ($p=0.0134$). Attendees scoring beyond the cut-off points (>6 for men and >2 for women) were advised to seek professional help. Alcohol use (AUDIT) was above the cut-off point for harmful alcohol drinking for both sons and daughters and the attendees also showed a high degree of psychological symptoms (SCL-90), however, we found no significant differences across sex regarding these two factors.

Table 1. Characteristics of the attendees at the two follow-up periods

	Follow-up 2003	Follow-up 2018
Number of participants	44	25
Men	9	6
Women	35	19
Age at follow-up (years)	18-36 (median 22)	32-48 (median 35)
Occupational status		
Student	13 (30%)	1 (4%)
Full-time work	13 (30%)	17 (68%)
Part-time work	9 (20%)	5 (20%)
Unemployed	9 (20%)	2 (8%)
Own family situation		
Married/cohabiting	12 (27%)	19 (76%)
Living at parent's home	17 (39%)	4 (16%)
Own flat	15 (34%)	2 (8%)
Have children	6 (14%)	19 (76%)

Table 2. Outcome values for the 44 children of alcohol-dependent parents at the first follow-up 2003

Scales ¹	Follow-up 2003	Cut-off	p-value
Coping			
All attendees (n = 43)	72.0 (15.8)		
Men (n = 9)	71.6 (15.3)		0.9256
Women (n = 34)	72.1 (16.1)		
SCL-90			
All attendees (n = 43)	0.87 (1.25)		
Men (n = 9)	0.79 (0.77)	0.6*	0.8453
Women (n = 34)	0.89 (1.35)	0.4*	
AUDIT			
All attendees (n = 44)	7.7 (7.8)		
Men (n = 9)	9.6 (6.1)	<8	0.4279
Women (n = 35)	7.2 (8.2)	<6	
DUDIT			
All attendees (n = 44)	2.5 (6.7)		
Men (n = 9)	7.3 (11.3)	<6	0.0134
Women (n = 35)	1.2 (4.4)	<2	
ISSI			
All attendees (n = 44)	21.6 (5.1)	>20	
Men (n = 9)	22.0 (5.6)		0.8017
Women (n = 35)	21.5 (5.0)		
Total stress			
All attendees (n = 44)	270.5 (87.0)		
Men (n = 9)	276.9 (80.9)	<288	0.8088
Women (n = 35)	268.9 (89.5)	<318	

Mean and standard deviations (SD). Men and women were compared using Students t-test.

¹ If the numbers for each test does not add up to a total of 44 (9 men and 35 women) it is due to missing data.

* Reference mean value for the Swedish population (20).

Statistically significant p-values are indicated using bold.

The results of the coping with parental abuse questionnaire, the level of social interactions, and total stress were not different for sons and daughters. Furthermore, based on the cut-off values, the offspring did not show any signs of elevated stress or lower ability for social interaction compared to the background population.

The 2018 follow-up

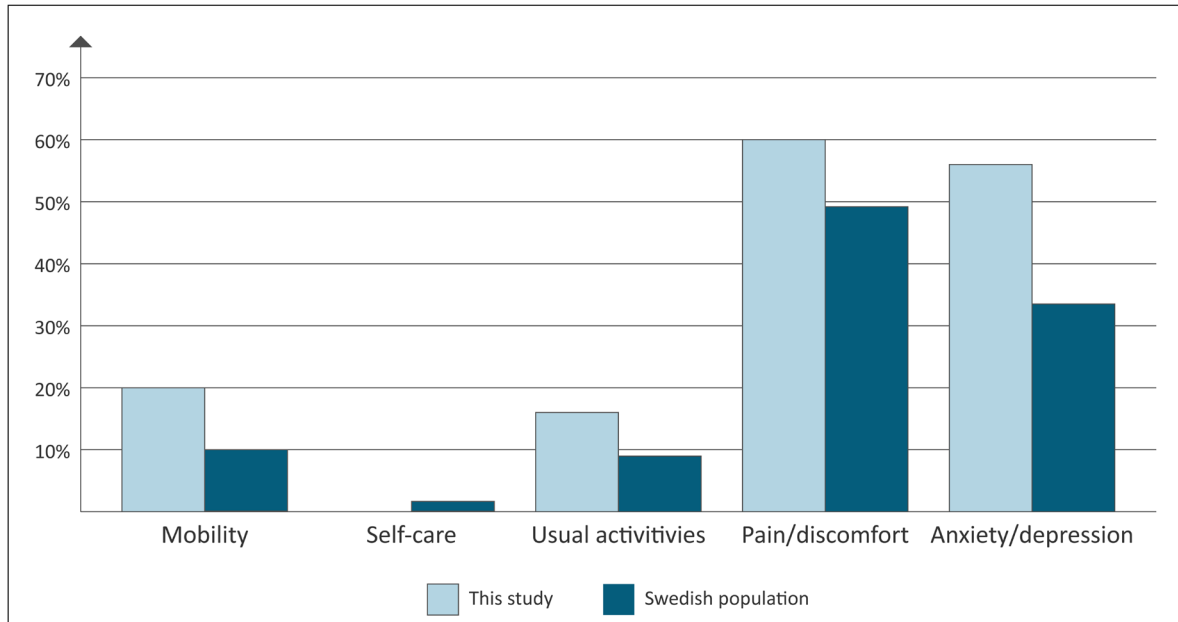
Regarding education 12 of the 25 (48%) attendees had engaged in further studies, which also included university studies, and at the time of the 2018 follow-up all but one had finished their studies.

The EQ5D and the Life Situation Questionnaire were only used at the second follow-up where 25 people filled in the EQ5D questionnaire (Figure 2). As shown in Figure 2, pain/discomfort was reported by 60% of the attendees as a moderate/severe problem, while 56% experienced problems with anxiety/depression. Mobility was a problem for 20% in this study and 18% experienced problems with performing usual activities. No one had problems with self-care. Median VAS score was 79 (range 20-98).



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Figure 2. The health-related quality of life (EQ5D) scores of the 25 attendees in the 2018 follow-up compared to the normal Swedish population



Regarding the Life Situation Questionnaire 17 (36%) of the 25 attendees, reported stress-related or psychological problems during recent years, of whom 7 (28%), had suffered from fatigue syndrome. Eight (32%) reported both physical and psychological symptoms. Two (8%) described earlier drug problems, and one (4%) reported an actual alcohol problem. Only three (12%) declared that they had no stress or other health problems. Three (12%) of the attendees were smokers, and two (8%) were taking snuff. Nineteen (76%) were married or cohabiting and had children.

Differences between the 2003 and the 2018 follow-ups

In Table 3, the results for the 25 attendees participating in both follow-ups (2003 and 2018) are presented.

Significant decreases in the scales were found concerning coping ($p < 0.0001$), alcohol use (AUDIT) ($p = 0.0095$) and social interactions (ISSI) ($p = 0.0373$). The differences were tested for all attendees together, but the patterns were similar for sons and daughters.

Even though, there was no statistically significant difference regarding drug use (DUDIT), both sons and daughters lowered the score beneath the cut-off point, with the greatest change for sons. AUDIT scores also dropped below cut-off. However, mental symptoms (SCL-90) increased for daughters and the level of social interaction dropped below the cut-off for both sons and daughters, indicating a poor level of social network.

Table 3. Changes in scores between the first and second follow-up for the 25 attendees participating in both investigations

Scales ¹	Follow-up		p-value
	2003	2018	
Coping			
All attendees (n = 16)	80.6 (15.8)	16.7 (12.4)	<0.0001
Men (n = 4)	81.0 (18.9)	15.3 (14.5)	
Women (n = 12)	80.4 (15.7)	17.2 (12.3)	
SCL-90			
All attendees (n = 25)	0.74 (0.62)	1.03 (1.52)	0.3463
Men (n = 6)	0.83 (0.93)	0.77 (0.73)	
Women (n = 19)	0.70 (0.52)	1.11 (1.70)	
AUDIT			
All attendees (n = 25)	8.6 (8.4)	4.1 (3.0)	0.0095
Men (n = 6)	11.5 (6.7)	6.2 (3.6)	
Women (n = 19)	7.7 (8.9)	3.4 (2.5)	
DUDIT			
All attendees (n = 24)	4.5 (8.7)	1.2 (4.0)	0.1121
Men (n = 6)	11.0 (12.6)	0.5 (1.2)	
Women (n = 18)	2.4 (6.0)	1.4 (4.5)	
ISSI			
All attendees (n = 25)	21.6 (4.9)	18.4 (7.1)	0.0373
Men (n = 6)	21.5 (6.6)	17.5 (8.7)	
Women (n = 19)	21.7 (4.5)	18.7 (6.7)	
Total stress			
All attendees (n = 23)	266.4 (76.1)	262.1 (104.1)	0.8627
Men (n = 6)	276.2 (98.3)	282.0 (132.5)	
Women (n = 17)	262.9 (70.0)	255.1 (96.0)	

Mean and standard deviations (SD). Differences between the follow-up in 2003 and 2018 are tested with a paired t-test.

¹ If the numbers for each test does not add up to a total of 25 (6 men and 19 women) it is due to missing data.

Statistically significant p-values are indicated using bold.



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Discussion

The present study adds to the sparse evidence of longitudinal follow-ups of studies concerning children of alcohol-dependent parents. In this investigation we followed children, who had attended a group support programme in Malmö, Sweden, into adulthood, 17–25 years later.

Despite the attendees' adverse family history, they seemed to have adapted rather well to society regarding education, work and family life. However, the 25 persons who attended both follow-ups experienced increased psychological and physical symptoms and a significant decrease in social network interaction between 2003 and 2018.

Although women were overrepresented in this follow-up and the number of men included were limited, data indicated that having at least one parent with alcohol problems had a negative impact regardless of being a son or a daughter, even up through adulthood.

First follow-up in 2003

The most important finding in the 2003 follow-up was that thirteen of the younger attendees who lived with their parents were still enrolled in school. Twenty-two had finished school or further education and worked full-time or part-time. These findings differ from previous studies by Torvik (10) and Berg (9) which emphasized the high risk of dropping out of school for children with parental alcohol problems. However, in the long-term follow-up by Werner and Johnson (17) the authors found that 51% of the respondents had successfully adapted to society regarding education, employment, and family life. This is in agreement with the present study. Werner and Johnson (17) as well as Velleman (4) also emphasized that the two most predictive circumstances for a positive outcome for this target group were education and a supportive social network. In the present study, this support came from the group support programme which lasted for about five months with a follow-up group meeting after six months. They were also supported by parents who had given their permission for the attendees to participate in the programme, by school personnel, social services and clinicians. Additionally, in the long-term studies by Moos and co-workers (16) and Werner and Johnson (17), the authors stressed the importance of the non-abusing parent for children's well-being. In the present study, not only the sober parent but also some of the parents in treatment supported the children's attendance in the group support programme.

Another finding was the risky consumption of alcohol and drugs among the attendees in the 2003 follow-up,

especially among young men. Regarding alcohol the mean (\pm SD) AUDIT score in a random sample of the Swedish population has been reported to 5.0 (\pm 4.7) and 2.7 (\pm 2.8) for men and women, respectively, compared to 9.6 (6.1) and 7.2 (8.2) in this study. In the background population the highest values were observed in the age-group of 17-27 year olds (7.1 (\pm 6.1) and 4.7 (\pm 4.1)) gradually decreasing with increasing age (22).

In the Swedish population (32) DUDIT scores has been reported as the proportion of positive scores (meaning DUDIT \geq 1). The proportion were 4.8% for men and 1.6% for women. In comparison, in 2003, our study showed results of 16.6% and 11.1% for men and women, respectively.

This finding of risky consumption is in agreement with other studies (1,2,9). Here Kaplan emphasised that although the caregivers own drinking can increase the risk of harm to their children, also other drinkers in the children's surroundings, for example peers, could increase this risk. This aspect was however not investigated in the current study.

Second follow-up in 2018

At the 2018 follow-up, we found that most of the 25 young and middle-aged adults who attended had finished school, and almost half (48%) of the attendees had continued further studies, which also included university studies. At this follow-up, the attendees showed lower levels of coping behaviour as well as decreased alcohol and drug use. One explanation for this could be the higher age of the attendees at the second follow-up. Previous research has found that the risk for hazardous drinking often increase in the 18–30 age group with occurrences of episodic drinking, and the highest level of alcohol consumption during life span (9,29,32). The fact that most of the respondents in the present study were women could partly explain the successful adaptation regarding work, education and a low level of unemployment, 20% in the first follow-up and only 8% in the second follow-up.

Several authors, such as Rydelius (12) and Werner and Johnson (17) have stressed that, compared to sons, daughters seem to cope more effectively with the adversity of growing up with alcohol-dependent parents. Despite the durable positive outcome in school, work and family life, the attendees experienced mental symptoms over time. This was shown in the scores from the EQ5D-L3 questionnaire. The differences between the population in this study and the normal Swedish population are generally small. However, one clear difference is the



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higher degree of anxiety/depression, 56% (moderate problems plus severe problems) compared to 34% in the normalised population (31). Likewise, in their own descriptions of their health situation in the Life Situation Questionnaire, the attendees described both psychological and physical problems, sometimes related to their work situation.

These findings are in agreement with Moos and co-workers (16), who found that some children with parental alcohol problems may remain symptom free until they encounter adult stressors that touch upon areas of latent vulnerability. Additionally, Werner and Johnson (17) stated that children of parents with alcohol problems may be at increased risk later in life.

Strengths and limitations of the study

The strength of this study is that the follow-up period was long, with a time span of 17-24 years after the initial intervention. Furthermore, validated questionnaires were used in both the 2003 and the 2018 follow-up. In addition to the questionnaires, the 2003 follow-up was complemented with a semi-structured interview. In the follow-up in 2018, the questionnaires were complemented with a standardized Life Situation Questionnaire.

However, there are features in the present follow-up study that should be noted. First of all, due to the small sample size the power of the study is a limitation to consider in regard to the validity to the results, as it increases the risk of a type II error (i.e. not being able to detect a true difference). The differences in age among the attendees and the uneven distribution of sons and daughters are limitations, which may influence the results, and made it difficult to compare between sexes. Perhaps mirrors the problems with long-term follow-ups in general. The reason for the attrition could be caused by several reasons. At the first follow-up in 2003 the attendees were in their young adulthood with an active life; some were living abroad. At this follow-up we met personally with those who attended in the follow-up while in the later follow-up in 2018 there was no personal meeting and the follow-up was done by telephone and by mailing information and questionnaires. This could have influenced the increased attrition. The number of questionnaires could also have a negative effect on the attendees interest of joining the 2018 follow-up. Also, we have to consider the possibility that the participants did not want to be reminded of their adverse childhood. We do not know in which way the high attrition might have influenced the results. Also, generalisation of the results should be considered carefully due to differences in cultural traditions, alcohol habits, and socioeconomic conditions.

Furthermore, only 16 persons completed the Dealing with Parent's Abuse Questionnaire (Coping) in 2018, which could be caused by the fact that 12 of the alcohol dependent parents were deceased and 3 had become sober.

Conclusion

In summary, we found that

- most of the attendees had full-filled school or further education,
- most of them were married and working full-time or part-time,
- the attendees who had joined both follow-ups reported mental and physical problems in adulthood.

Even if the sample in this study is rather small, it is one in few studies which have followed children of alcohol dependent parents for such a long timeframe as 17-25 years. In this aspect it can be seen as an important contribution to the knowledge in this field of research.

However, there is a need for further longitudinal follow-up studies in this research area to find out how to support this frail group in the best way. Our findings point to the risk that adverse problems in childhood affect people even in adulthood.

Could extended support programmes, or programmes directed towards the whole family and the social network around the child, decrease the negative health risk for this group of children? This could be of importance, especially as long as the children live in their parents' home. This question must be addressed in future research.

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References

- Schuckit MA, Smith TL, Pierson J, Danko GP, Allen RC, Kreikebaum S. Patterns and correlates of drinking in offspring from the San Diego Prospective Study. *Alcohol Clin Exp Res.* 2007; 31:1681–91. doi: [10.1111/j.1530-0277.2007.00465.x](https://doi.org/10.1111/j.1530-0277.2007.00465.x).
- Kaplan LM, Nayak MB, Greenfield TK, Karriker-Jaffe KJ. Alcohol's Harm to Children: Findings from the 2015 United States National Alcohol's Harm to Others Survey. *J Pediatr.* 2017; 184:186–92. doi: [10.1016/j.jpeds.2017.01.025](https://doi.org/10.1016/j.jpeds.2017.01.025).
- Kendler KS, Ohlsson H, Sundquist J, Sundquist K. The rearing environment and the risk for alcohol use disorder: a Swedish national high-risk home-reared v. adopted co-sibling control study. *Psychol Med.* 2021; 14:2370–7. doi: [10.1017/S003329172000096](https://doi.org/10.1017/S003329172000096).
- Velleman RDB, Templeton LJ, Copello AG. The role of the family in preventing and intervening with substance use and misuse: a comprehensive review of family interventions, with a focus on young people. *Drug Alcohol Rev.* 2005; 24:93–109. doi: [10.1080/09595230500167478](https://doi.org/10.1080/09595230500167478).
- Kelley ML, Braitman A, Henson JM, Schroeder V, Ladage J, Gumienny L. Relationships among depressive mood symptoms and parent and peer relations in collegiate children of alcoholics. *Am J Orthopsychiatry.* 2010; 80:204–212. doi: [10.1111/j.1939-0025.2010.01024.x](https://doi.org/10.1111/j.1939-0025.2010.01024.x).
- Balsa AI, Homer JF, French MT. The health effects of parental problem drinking on adult children. *J Ment Health Policy Econ.* 2009; 12, 55–66.
- Haugland SH, Coombes L, Strandheim A. Parental alcohol intoxication and adverse health outcomes among offspring. A 4-year follow up HUNT study among 2399 Norwegian adolescents. *Prev Med Reports.* 2020; 20:101170. doi: [10.1016/j.pmedr.2020.101170](https://doi.org/10.1016/j.pmedr.2020.101170).
- Casas-Gil MJ, Navarro-Guzman JJ. School characteristics among children of alcoholic parents. *Psychol Rep.* 2002; 90:341–8. doi: [10.2466/pr0.2002.90.1.341](https://doi.org/10.2466/pr0.2002.90.1.341).
- Berg L, Bäck K, Vinnerljung B, Hjern A. Parental alcohol-related disorders and school performance in 16-year-olds—a Swedish national cohort study. *Addiction.* 2016; 111:1795–1803. doi: [10.1111/add.13454](https://doi.org/10.1111/add.13454).
- Torvik FA, Rognmo K, Ask H, Røysamb E, Tambs K. Parental alcohol use and adolescent school adjustment in the general population: Results from the HUNT study. *BMC Public Health.* 2011; 11:706. doi: [10.1186/1471-2458-11-706](https://doi.org/10.1186/1471-2458-11-706).
- Mangiavacchi L, Piccoli L. Parental alcohol consumption and adult children's educational attainment. *Econ Hum Biol.* 2018; 28:132–45. doi: [10.1016/j.ehb.2017.12.006](https://doi.org/10.1016/j.ehb.2017.12.006).
- Rydellius P. Children of alcoholic fathers. Their social adjustment and their health status over 20 years. *Acta Paediatr Scand Suppl.* 1981; 286:1–89.
- Christensen HB, Bilenberg N. Behavioural and emotional problems in children of alcoholic mothers and fathers. *Eur Child Adolesc Psychiatry.* 2000; 9:219–26. doi: [10.1007/s007870070046](https://doi.org/10.1007/s007870070046).
- Mathew RJ, Wilson WH, Blazer DG, George LK. Psychiatric disorders in adult children of alcoholics: data from the epidemiologic catchment area project. *Am J Psychiatry.* 1993; 150:793–800. doi: [10.1176/ajp.150.5.793](https://doi.org/10.1176/ajp.150.5.793).
- Morgan PT, Desai RA, Potenza MN. Gender-related influences of parental alcoholism on the prevalence of psychiatric illnesses: Analysis of the National Epidemiologic Survey on Alcohol and Related Conditions. *Alcohol Clin Exp Res.* 2010; 34:1759. doi: [10.1111/j.1530-0277.2010.01263.x](https://doi.org/10.1111/j.1530-0277.2010.01263.x).
- Moos RH, Finney JW, Cronkite RC. *Alcoholism treatment: Context, process, and outcome*; Oxford University Press: New York, NY, 1990; ISBN 978-0195043624.
- Werner, E.E.; Johnson, J.L. *The Role of Caring Adults in the Lives of Children of Alcoholics.* *Subst Use Misuse.* 2004; 39:699–720. doi: [10.1081/ja-120034012](https://doi.org/10.1081/ja-120034012).
- Lindstein T. Young at the turning point: working with young people whose parents are abusive [Unga vid vändpunkten: att arbeta med ungdomar vars föräldrar missbrukar]; Gothia: Stockholm, 1997; ISBN 91-7205-133-7.
- Derogatis LR. *SCL-90-R: Administration, scoring and procedures manual*; Clinical Psychometric Research: Baltimore, MD, 1977.
- Fridell M, Cesarec Z, Johansson M, Thorsen SM. *SCL-90 Swedish standardization and validation of the Symptom Check List [SCL-90 Svensk normering, standardisering och validering av symtomskalan]*; Stockholm, 2002.
- Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption—II. *Addiction.* 1993; 88:791–804. doi: [10.1111/j.1360-0443.1993.tb02093.x](https://doi.org/10.1111/j.1360-0443.1993.tb02093.x).
- Bergman H, Källmén H. Alcohol use among Swedes and a psychometric evaluation of the alcohol use disorders identification test. *Alcohol Alcohol.* 2002; 37:245–51. doi: [10.1093/alcalc/37.3.245](https://doi.org/10.1093/alcalc/37.3.245).
- Reinert DF, Allen JP. The Alcohol Use Disorders Identification Test (AUDIT): a review of recent research. *Alcohol Clin Exp Res.* 2002; 26:272–9.
- Reinert DF, Allen JP. The Alcohol Use Disorders Identification Test: An Update of Research Findings. *Alcohol Clin Exp Res.* 2007; 31:185–99. doi: [10.1111/j.1530-0277.2006.00295.x](https://doi.org/10.1111/j.1530-0277.2006.00295.x).
- Berman A, Bergman H, Palmstierna T. *DUDIT-E The Drug Use Disorders Identification Test-E-manual, Version 1.1*; 2007.
- Undén A-L, Orth-Gomér K. Development of a social support instrument for use in population surveys. *Soc Sci Med.* 1989; 29:1387–92. doi: [10.1016/0277-9536\(89\)90240-2](https://doi.org/10.1016/0277-9536(89)90240-2).
- Orford J, Guthrie S, Nicholls P, Oppenheimer E, Egert S, Hensman C. Self-reported coping behavior of wives of alcoholics and its association with drinking outcome. *J Stud Alcohol.* 1975; 36:1254–67. doi: [10.15288/jsa.1975.36.1254](https://doi.org/10.15288/jsa.1975.36.1254).
- Hasson D, Arnetz BB. Validation and Findings Comparing VAS vs. Likert Scales for Psychosocial Measurements. *Int Electron J Health Educ.* 2005; 8:178–92.
- Andersson C, Johnsson KO, Berglund M, Öjehagen A. Measurement properties of the Arnetz and Hasson stress questionnaire in Swedish university freshmen. *Scand J Public Health.* 2009; 37:273–9. doi: [10.1177/1403494808099970](https://doi.org/10.1177/1403494808099970).
- EuroQol Research Foundation *EQ-5D-3L User Guide*; 2018. Available at: <https://euroqol.org/wp-content/uploads/2018/12/EQ-5D-3L-User-Guide-version-6.0.pdf>.
- Burström K, Sun S, Gerdtham U-G, et al. Swedish experience-based value sets for EQ-5D health states. *Qual Life Res.* 2014; 23:431–42. doi: [10.1007/s11136-013-0496-4](https://doi.org/10.1007/s11136-013-0496-4).
- Berman AH, Bergman H, Palmstierna T, Schlyter F. Evaluation of the Drug Use Disorders Identification Test (DUDIT) in criminal justice and detoxification settings and in a Swedish population sample. *Eur Addict Res.* 2005; 11:22-31. doi: [10.1159/000081413](https://doi.org/10.1159/000081413).