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ADMINISTERING BRIEF MOTIVATIONAL INTERVENTIONS TO YOUNG MEN

Results from a pilot census study among 19 year-old francophone Swiss men

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TABLE DES MATIÈRES

ABSTRACT

Aims – To pilot the implementation of brief motivational intervention (BMI) among conscripts, and to test the effectiveness of BMI in young men voluntarily showing up for a single face-to-face alcohol BMI session. Participants were conscripts attending the army recruitment process in Lausanne. This process is mandatory for all Swiss males at age 19 and Lausanne serves all francophone Swiss men.

Methods - Of 3'227 young men that were seen during the army recruitment procedures, 445 voluntarily showed up for a BMI and 367 were included in the study (exclusions were random and unsystematic and related to organizational aspects in the recruitment center). After an initial assessment, subjects were randomized into two groups: an immediate BMI and a 6-month delayed BMI (waiting list design). A 6-month follow-up assessment was conducted in both groups. BMI was a face-to-face 20 minutes counseling session with a psychologist trained in motivational interviewing at baseline and a telephone session for the control group at follow-up. Strategies of BMI included the exploration and evocation of a possible behavior change, importance of future change, readiness to change, and commitment to change. A filmed example of such an intervention is available in French at www.alcoologie.ch.

Results - All procedures are now fully implemented and working and the provision of preventive efforts found general approval by the army. 3'227 were eligible for BMI and 445 of them (13.8%) showed up for receiving a BMI. 367 were included in the study, 181 in the BMI group and 186 in the control group. More than 86% of those included were reached at follow-up. With one exception all findings on alcohol use went in the expected direction, i.e. a stronger decrease in alcohol use (or a smaller increase as for usual weekly drinking amount) in the BMI group. The risk for risky single occasion drinking (RSOD) decreased from 57% at-risk users at baseline to 50.6%, i.e. a 6.4% point decrease in the BMI group, while there was only a 0.6% point decrease (from 57.5% to 56.9%) in the control group. Moreover, the study showed that there was a likelihood of crossover effects for other substances like tobacco smoking and cannabis use. Despite these encouraging and consistent positive findings, none reached significance at conventional levels ($p < 0.05$).

Discussion - Data suggest a beneficial impact of BMI on alcohol use outcomes and potential effect on other substance use in 19-year old men attending the army recruitment and showing up voluntarily for BMI. As the main aim was to implement and test feasibility of conducting BMI in this setting none of our findings reached statistical significance. The consistency of findings across measures and substances, however, raises hope that non-significance in the present study does not mean no effect, but mainly insufficient power of this pilot study.

1 INTRODUCTION

During the transition from adolescence to adulthood individuals are confronted with a number of normative developmental tasks in domains such as physical and cognitive development, identity, affiliation and achievement. This transition involves major individual and contextual changes in other life domains, and is often accompanied by increases in heavy drinking, smoking, other substance use, and associated problems. This phase could set the stage for future substance use problems [1;2]. The progression from adolescence to early adulthood offers an important vantage point for examining changes in alcohol use, as well as providing an opportunity for initiating vital preventive actions. The college campus milieu often has been a major research setting [3-6], but has the disadvantage of being limited to a highly selective group of individuals who are better educated than their counterparts in the general population. Another promising area for assessing transitions from adolescence to young adulthood among men lies within the army, especially in those countries with mandatory conscription mechanisms. In Switzerland virtually all non-institutionalized men are called for conscription at age 19, thus minimizing social status bias and issues of differential access to intervention.

Surveys on conscripts exist in Europe [7-14] but have not used this advantage of easy access to large samples of young conscripts to study the impact of preventive actions on substance use. The lack of research on prevention of substance use among conscripts is puzzling because the military service experience is a likely place for the (sometimes heavy) use of legal substances like alcohol to increase [12;15;16]. Recruits in Switzerland often use more alcohol than their peers in the general population [17;18]. Preventive measures such as routine military drug testing or tobacco bans during basic training have been shown to be effective [19], but most of the research on legal and illegal substances among conscripts ends only with claims that intervention is needed (e.g., [12;16;20]). There usually are no suggestions for implementing and testing these interventions.

Brief motivational intervention (BMI) is an adaptation of Motivational interviewing [21] for single, short sessions (20-60 minutes). BMI focusing on alcohol have been associated with approximately 20% decrease in alcohol consumption, and are often as effective as more intensive treatments [22-24]. Reviews on strategies targeting alcohol consumption showed that BMI was one of the few effective preventive strategies (with structural measures such as driving while intoxicated regulations and price and taxes control) and the most cost-effective among individual-centered approaches [25]. The effectiveness of BMI as a preventive action has been demonstrated mainly in primary care settings, and although its applicability seems to be broader and appropriate for early interventions within populations not actively seeking treatment [26;27], we could identify only one (HIV-prevention) study using BMI among conscripts [28]. Adolescents and young adults, however, are particularly receptive to motivational methods and could be approached within a wide range of settings [26;29]. BMIs have a great potential among adolescents and young adults [26] because of the concentration on avoiding argumentation and hostile confrontation, while accepting adolescents as individuals without giving lectures to them or issuing ultimata. This intervention style may be more palpable to "rebellious" or "oppositional" teens or young adults, and foster an atmosphere of self-directed change that teachers, parents or other authority figures have trouble developing easily. In addition, adolescents that initially had low motivation to change their behavior had more positive outcomes through motivational interviewing than those who seemed more highly motivated at baseline [30;31]. This suggests that the techniques designed to increase "intrinsic" motivation translates effectively into meaningful behavior change. Research on BMI for young people has shown promising results [30;32-35].

Furthermore, some authors observed cross-effects between substances. In a study focusing on alcohol, tobacco and illicit drugs, McCambridge & Strang [33] found reductions in use of the three substances, as well as cross-effects such as cannabis use reduction, when the focus of the intervention was on another substance, like tobacco. Similarly, effects on drinking and cannabis use were reported in a community intervention trial targeting cigarette smoking in young people [36] and findings of reduced tobacco, alcohol and drug use were found in a convenience trial in Japan [37]. In a recent unpublished study,

Babor and colleagues also showed that BMI targeting alcohol use had cross-effects in reducing tobacco use (personal communication Tom Babor; 15.05.2007). This is important because substance use problems in young people are commonly not problems with a single substance but multi substance related.

The aim of this study was thus to evaluate effectiveness of BMI to reduce alcohol use and related risks in large representative sample of 19-years old French-speaking Swiss young men. A secondary aim is to assess potential cross-effects to other substances use and related risks.

2 METHODS

The study protocol was approved by the Ethics Committee for Clinical Research of the Lausanne University Medical School (Protocol No. 15/07) and was registered in the International Standard Randomized Controlled Trial Number Register (http://www.controlled-trials.com/ISRCTN78822107).

2.1 SAMPLE

Switzerland has a mandatory two-day army recruitment process for all males at age 19, and virtually all conscripts complete the physical, medical and cognitive assessments to determine eligibility for service in the Swiss military. Only men are recruited for conscription; women can join the military service on a voluntary basis, but were not included in the present evaluation due to scarcity and non-representativeness. Virtually all non-institutionalized men are called for conscription, thus only individuals with severe physical or psychical disabilities are not represented in such a sample. Conscripts enroll the examination procedures in groups of 30 different people, 6 groups per week. Each of the groups gets a different ordering of tasks. For example, some start with the medical examination others with psychological tests. We used the 3-hour slot of medical examination. Because the medical examination procedures lasted around 90 minutes only, sufficient time was left for the conscripts for other activities, e.g. the participation in the BMI trial, while waiting between single procedures (e.g. between eyesight tests and audiometry), or after having completed all medical procedures.

We chose to offer the participation in BMI to all conscripts and not to select at-risk drinkers randomly on a screening questionnaire basis. The reasons for this were a) to look at the development of substance use also among initially low-risk users, b) to see whether BMI type enforcement of low risk consumption maintains such a low risk consumption and c) to blind the army to potentially identifying at-risk drinkers in those involved in BMI and penalizing them in the future. In addition, we strongly believe that randomized controlled trials have shown over and over again the efficacy of brief interventions. The task today is to deliver it in natural settings to prove its effectiveness. It seems impossible in natural settings to randomize or force people to join brief interventions, or to pay interventionist and participants. This may make sense for scientific purposes, but a large-scale implementation of BMIs has to be offered on a voluntary basis. We nevertheless randomized those who were voluntarily seeking an intervention by using a waiting list design (see below). In the end, there were no other exclusion criteria than lack of giving informed consent or providing a contact address for follow-up.

Inclusion took place during 25 consecutive weeks of conscription in 2007 between January 23 and August 29 (recruitment centre was closed for 6 weeks of holidays). It should be noted, however, that one of the six groups (the Monday morning group) could not be approached due to the wish of the army psychologists who wanted to obtain unbiased psychological tests. The army psychologists were afraid that our measurement instruments, but even more so the motivational interviewing may have an influence on their tests.

2.2 SAMPLE SIZE CALCULATIONS

Based on the international literature we a priori assumed a 20% diminution in the proportion of at-risk drinkers, or a 20% decrease in the weekly drinking amount in the intervention group. Based on this and the results of the project pilot phase, about 50% of young adults are at-risk drinkers (more than one occasion with 6+ drinks per month, or more than 21 drinks per week). The estimated sample size for two-sample comparisons of proportions, with the assumptions that alpha=0.05 (two-sided), power=0.80, and groups of identical size, is 408 per group. Considering a mean weekly amount of 10 drinks (standard deviation=9.5, per pilot project data), the estimated sample size with the assumptions that alpha=0.05 (two-sided), power=0.80, and groups of identical size, is 355 per group.

Using repeated measure analysis taking baseline measures into account (ANCOVA), the sample size for weekly drinking amount outcomes as described above is 341 per group if the correlation between baseline and follow-up measurements is 0.2, and 128 per group if the correlation is 0.8. Generally, we expected quite high correlations between measurements. Measurement of alcohol consumption has been shown in dietary studies mainly using semi-quantitative food frequency questionnaire to have one of the highest test-retest reliabilities of all nutrient intakes across different countries (e.g., [38-40]) pointing to the fact that a) alcohol consumption is a relatively stable behaviour that can be reliably measured, which would result in turn in high correlations between measurements.

We assumed that 2-3 individuals per block (a priori: 6 blocks) would show up for receiving a brief motivational interview. Thus we expected about 350 to 400 individuals showing up for brief interventions and thus around 175 to 200 per intervention and control group (see figure 1 below for the design and the final realization of samples). It should nevertheless be noted that the present study is a pilot study and implementation of procedures is one of the most important aspects. From the beginning we were well aware that the present study might be underpowered.

2.3 RANDOMIZATION

The design of the study relied on invited conscripts to voluntarily participate in a brief (opportunistic) counseling session (pragmatic trial). We did not randomize among all conscripts but only among those interested in receiving BMI for the following reasons. First, randomization of individuals unwilling to participate in counseling sessions would increase the internal, but not the external validity of the design and would probably result in many refusals, either at baseline or at follow-up. Second, on one hand sufficient knowledge about efficacy from randomized controlled trials have been accumulated over the past decades, but little is know about the effectiveness of BMI in "real world" settings on the other hand. It is unlikely that in real life people not willing to receive counseling will be amenable to a counseling session herein. Also, recent research on brief alcohol counseling in an emergency department demonstrated that BMI mainly had an effect among those who during the counseling session felt themselves to be more capable of changing [41], and therefore counseling may be particularly fruitful for those searching for help.

In order to create a natural control condition for the pragmatic trial, half of our study participants were randomly assigned to an assessment with BMI group and immediately received BMI, while the other half were assigned to a assessment-only group without BMI and put on a waiting list to receive counseling by telephone at 6-months follow-up. Interested conscripts were told that there was not enough time to conduct all interventions and that a randomly selected half would receive BMI per telephone in the following months. They were asked to choose between reversed cards randomly disposed on a table, half of the cards being linked to the BMI group while the other to the control group. BMI counseling session were provided in a separated room and thus in a confidential environment protected.

All conscripts not included in the BMI or control group were proposed to fill out a short screening questionnaire. This permitted us a) to describe alcohol use in the whole census and b) to compare the group of those voluntary showing up for brief intervention with the rest of conscripts.

2.4 RESEARCH PROCEDURES

All conscripts were informed of the study goals and proposed to participate in the BMI trial. Those interested received an information sheet and were asked to give informed consent and contact address for 6-month follow-up. They were than randomly allocated to treatment or control group. Whereas the treatment group was asked to fill out an assessment questionnaire and participated in a BMI session, the control group filled out the assessment questionnaire only and controls were offered to be contacted again by phone to receive BMI (waiting list).

2.4.1 Assessment

Filling out the assessment questionnaire lasted approximately 20 minutes. Assessment was conducted through self-administrated, computerized questionnaires using laptops; the research staff provided assistance if needed. The assessment questionnaire consisted of (see Appendix A for the French version used):

- a standard quantity/frequency measure of alcohol use
- the Alcohol Use Disorder Identification Test (AUDIT [42])
- a last week alcohol consumption retrospective diary
- questions on maximum consumption and related drinking time to approximate peak blood alcohol concentration
- a question on the age of first time inebriated
- questions on motives for drinking
- a questionnaire on health and behavioral consequences of binge drinking [43]
- drunk driving-related questions
- readiness to change, importance to change, and confidence in sustaining changes in alcohol use measured on a 10-point visual analog scale
- standard questions on frequency/quantity of tobacco use
- the Cigarette Dependence Scale (CDS-12 [44])
- a question on the age of tobacco smoking onset
- readiness to change, importance to change, and confidence in sustaining changes in smoking behaviors measured on a 10-point visual analog scale
- the Cannabis Use Disorder Identification Test (CUDIT [45])
- Questions on cannabis use consequences as asked in the electronic THC Online Knowledge Experience (http://www.e-toke.com/info/index.php)
- a question on the age of first cannabis use

- readiness to change, importance to change and confidence in sustaining changes in cannabis use measured on a 10-point visual analog scale
- questions on lifetime prevalence of other substance use
- questions on global health status
- questions on socio-professional status.

2.4.2 Intervention

The BMI was conducted immediately following the assessment in a separate room in order to provide confidentiality of verbal communication between counselor and conscript. The proposed BMI intended to reinforce motivation to change behaviors related to alcohol use or to sustain changes already done. Our approach is described elsewhere in detail [46]. Briefly, the intervention is inspired by Motivational Interviewing (MI [21]) techniques and further development of MI adaptations for single, short sessions. Rollnick and colleagues [47] developed a model of brief motivational interviewing in the context of a study of a 30–40 minute brief intervention with male heavy drinkers in a hospital setting. McCambridge and Strang [48] adapted this model for young people using various substances. The intervention outlined in our study was inspired by the latter but was performed in a shorter form (20-30 minutes). It involved exploring the use of alcohol and related hazardous behaviors, before focusing on one or more aspects of them. The first aim of this BMI was to introduce a behavior change perspective and talk about it in a non-judgmental, empathic and collaborative manner. The hypothesis was that an open discussion with additional reinforcement by a trained counselor around alcohol use and its repercussions on different life areas can heighten the conscript's awareness of the importance to change this behavior now or in the future; and thus can then lead to successful behavior change.

Due to logistical constraints, individuals from one of the 6 groups of 30 conscripts enrolling each week were not eligible for participation in BMI (n=625 for the 25 weeks). The reason was that this group was the only group where psychological army assessment followed the medical examination. Psychologists pf the army, were concerned that our substance use assessment may bias the army's psychological tests. As the army randomly constitutes groups of 30 individuals, this group should not differed from the other 5 groups and its exclusion should not have biased the sample. This group was, however, eligible for a short screening questionnaire.

2.4.3 Short screening questionnaire

All conscripts not participating in the BMI trial were asked to fill out the short screening questionnaire. The short screening questionnaire was a reduced version of the assessment questionnaire. It lasted approximately 5 minutes to fill out and was conducted through self-administrated, paper/pencil questionnaires; the research staff provided assistance if needed. It was constituted of (see Appendix B for the French version used):

- a standard quantity/frequency measure of alcohol use
- a last week alcohol consumption retrospective diary
- a question on the age of first time inebriated
- standard questions on frequency/quantity of tobacco use
- a question on the age of tobacco smoking onset
- the three first questions of the CUDIT
- a question on the age of first cannabis use

- questions on lifetime prevalence of other substance use
- questions on socio-professional status.

Thus, all conscripts (independent of whether they participated in the BMI trial or not) were asked to answer a minimal set of questions (either within the assessment instrument of the trial or in form of a short screening instrument).

2.5 RESEARCH STAFF

Two counselors presented the study to the conscripts, collected informed consents and contact addresses, administrated assessment questionnaires, and conducted BMI. Counselors were two master-level psychologists trained in MI and BMI, and in applying research procedures. Training was delivered by a senior physician and psychologists experienced in teaching MI and BMI. Counselors first received a two-day training in MI, during which they were introduced to the spirit, principles and tools of MI through exercises aimed at improving performance using an active, empathic listening style to avoiding confrontation, as described elsewhere [49]. After this initial training, counselors participated in workshops focused on trial information procedures as well as on practice of BMI with actors trained for playing the role of substance-abusing young adults (fake clients or simulated patients). Two months after their first MI training, counselors took part in a second MI training that enabled them to better integrate all aspects of MI. To guarantee high and constant quality of BMI delivery, counselors received weekly individual supervision in which difficulties and challenges were discussed, and monthly joint supervision with two senior psychologists throughout the whole project. Audiotapes of the interventions were reviewed with feedback given on various aspects of BMI (e.g., MI spirit, reflective listening techniques, eliciting change talk, etc.).

Three research assistants trained in applying research procedures administrated short questionnaires. A two-day training was provided for these research assistants and included workshops focused on trial information procedures.

2.6 FOLLOW-UP

Follow-up procedures took place 6 months after baseline. Assessment and BMI were conducted by telephone. Telephone interviews used the same questionnaire as for the baseline assessment baseline measures for both the BMI group and the control group (assessment only, waiting list). The questionnaire included (see Appendix C for the French version used):

- a standard quantity/frequency measure of alcohol use
- the AUDIT
- a last week alcohol consumption retrospective diary
- questions on maximum consumption and related drinking time to approximate peak blood alcohol concentration
- questions on motives for drinking
- the Wechsler questionnaire on health and behavioral consequences of binge drinking
- drunk driving-related questions

- readiness to change, importance to change, and confidence in sustaining changes in alcohol use measured on a 10-point visual analog scale
- standard questions on frequency/quantity of tobacco use
- readiness to change, importance to change, and confidence in sustaining changes in smoking behaviors measured on a 10-point visual analog scale
- the three first questions of the CUDIT
- Questions on cannabis use consequences as asked in the electronic THC Online Knowledge Experience (http://www.e-toke.com/info/index.php)
- readiness to change, importance to change and confidence in sustaining changes in cannabis use measured on a 10-point visual analog scale
- questions on global health status
- questions on socio-professional status.

Two additional master-level psychologists blinded to baseline data and the allocation to BMI and control condition conducted follow-up procedures. They received the same training as described above, plus a workshop on conducting telephone interviews and BMI by telephone. To guarantee blinding of interviewers towards the follow-up interview, but also giving them the opportunity to conduct BMI in the waiting list, the following strategy was chosen. First, the follow-up interview was conducted and at the end of the CATI questionnaire a pop-up informed the interviewers whether a telephone BMI had been suggested to the participants at baseline. Those who were not part of the waiting list were thanked for the participation and for those of the waiting list a BMI counseling session was proposed. The follow-up procedures were designed to minimize attrition. Letters reminding upcoming telephone call and thanking participants in advance were sent out one month before follow-up. A detailed strategy attempting to contact individuals who cannot be reached at first by phone was designed to cover a maximum of periods of the day and the week without to annoy the youngster. Reminder letter and email were sent when individuals could not be reached.

2.7 MEASURES

We describe below only those measures that were used in the present report. These are comprised of socio-demographic variables, as well as alcohol and substance use indicators.

2.7.1 Baseline descriptive measures

Age is presented since not all individuals come for conscription at age 19. Some were asked to come earlier or later due to education requirements or due to temporary physical disability. Young adults receiving Swiss citizenship after age 19 are also called for conscription. Education and professional status were addressed by 2 multiple-choice questions on the higher education level reached and on the current occupation and were recoded in 3 categories: 1) obligatory school, 2) professional education, and 3) college degree or higher, and 1) employed, 2) in training, and 3) unemployed, public welfare, sabbatical year, respectively. Living in an urban vs rural area was addressed with a multiple-choice question.

Usual frequency of drinking was assessed with an open-ended question on how many days per week alcohol was consumed. Usual quantity per drinking day was an open-ended question about the usual number of standard drinks on drinking days. A standard drink typically contains about 10 grams of alcohol. Pictures of standard vessels were shown with the following labels identifying container sizes:

100 ml glass of wine; 250 ml glass of beer; 275 ml bottle of alcopops (a premixed drink containing spirits such as Bacardi Breezer); 25 ml glass of spirits; and 50 ml tall glass containing cocktails or aperitifs (e.g., martini). The number of drinks per drinking day was multiplied by number of drinking days to obtain the usual weekly drinking amount.

Conscripts were also asked to retrospectively itemize their daily beverage-specific consumption in a one-week diary, using the alcohol definitions listed above. Drinks were summed over beverages for each day and totaled over the seven days.

Risky single occasion drinking (RSOD) was measured with an open-ended question about usual number of days per month on which 6+ drinks were consumed. Six drinks contain approximately 60 grams of pure alcohol and equal the most common US measure of 5+ drinks of 12 grams per drink [50].

We also used the number of maximum drinks consumed in one occasion during the last year and the age of first alcohol intoxication as descriptive measures.

At-risk weekly drinking amount categories were constructed using a cut-off of 21 drinks per week (3 per day), distinguishing low (<21 drinks/week or 210 grams/week) from risky drinking volume (>=21 drinks/week). Standards for brief intervention studies set by the National Institute on Alcohol Abuse and Alcoholism (NIAAA, see [51]) recommend 15 drinks as the cut-off at which interventions should start. Clinical guidelines in Europe [52] and other working definitions [53;54] recommend 4 standard drinks daily (or correspondingly, 280 grams a week with 10 grams per standard drink) as cut-offs for brief interventions studies among men. We used a more conservative cut-off that is closer to NIAAA recommendations (note that standard drinks in the US are between 12 and 14 grams and therefore 15 drinks equal between 180 and 210 grams a week), because of the relatively young age of men in the present study.

Individuals having more than one RSOD per month were considered as at-risk for RSOD. This risk is particularly meaningful when regarding this age group. It has been shown that alcohol use is the major risk factor for mortality and morbidity among adolescents and young adults, mainly due the increased risk for injuries and other external consequences, which are more strongly related to a heavy acute alcohol intake (e.g. measured by RSOD) than chronic heavy drinking [53;55].

In addition to analyzing each risk separately, we also analyzed individuals being in at least one at-risk category (at risk weekly volume or at risk for RSOD).

Tobacco use is presented in the report as the prevalence of current (on a regular or irregular basis) and daily (>1 cigarettes/day, every day) smoking. Additionally, we measured the number of cigarettes usually smoked on smoking days using an open-ended question.

Cannabis use was measured using 2 multiple-choice questions: lifetime prevalence of cannabis use (already used/never used) and cannabis use frequency within the last 6 months (never, once per month or less, 2-4 times per month, 2-3 times per week, 4 times per week or more).

Use of other illicit drugs was assessed using multiple-choice questions as the lifetime prevalence of using different substances (magic mushrooms, amphetamines, ecstasy, cocaine, LSD, heroin, prescription drug used as a narcotic, other). We recoded it as the lifetime prevalence of using at least one illicit substance at least once.

Measures described above were those present both in the assessment and in the short screening questionnaire. When comparing Intervention and Assessment control groups, several additional variables from the assessment were selected. These are presented below.

We asked for the maximum number of standard drinks on the occasion in the past month where respondents used the most alcohol. Number of drinks was asked separately for beer, wine, spirits, and were than added to yield the maximum number of drinks on any drinking occasion in the past month.

The assessment comprised the AUDIT questionnaire. Responses to each of the 10 questions were scored from 0 to 4, giving a maximum possible score of 40 [42].

The Wechsler questionnaire on health and behavioral consequences of binge drinking is comprised of 12 items assessing the occurrence of different consequences (e.g. argue with friends, miss a class, engage in unplanned sexual activity, get into trouble with police) linked to alcohol during the last year [43]. We calculated the number of consequences that were described, thus giving a score between 0 and 12.

Finally, we addressed the importance, readiness, and confidence to change alcohol drinking using 10-point visual analog scales.

2.7.2 Primary outcome measures

Primary outcome measures were the baseline to follow-up difference scores for usual consumption in number of drinks per week, last week alcohol consumption based on the retrospective diary, frequencies of RSOD per month, and maximum drinks in one occasion over the last month, as well as change in at-risk categories for weekly drinking amount, RSOD, or at least one of those.

2.7.3 Secondary outcome measures

Secondary outcome measures were the difference between baseline and follow-up for the AUDIT score, the number of alcohol-related consequences, and for the three 10-point visual scale measures importance to change, readiness to change, and confidence to change.

We also assessed change in other substance use, as potential cross-effects between substances were hypothesized. We used as endpoints the percentage of individuals 1) being current tobacco smokers, 2) being daily tobacco smokers, 3) having already used cannabis, and 4) using cannabis more than once a week during the last 6 months.

2.8 STATISTICAL ANALYSES

We used standard statistical analysis. For continuous outcomes such as number of drinks per week or frequency of RSOD ordinary least square regression based on change scores, was used (differences between baseline and follow-up). Change score analysis has been shown to have advantages over models with baseline adjustment [56;57].

For dichotomous measures change scores cannot be used (it would result in 4 categories, where stable at risk and stable not at risk received the same change score, namely 0). In the dichotomous case we tested differences in prevalence at follow up between intervention and control group. This can be done under the assumption that randomization to control and intervention group worked, and hence there were no differences between the two groups at baseline (see below for the tests of this assumption).

We used Pearson Chi-squared test for categorical variables. As most continuous variables were not normally distributed we used Mann-Whitney non-parametric test.

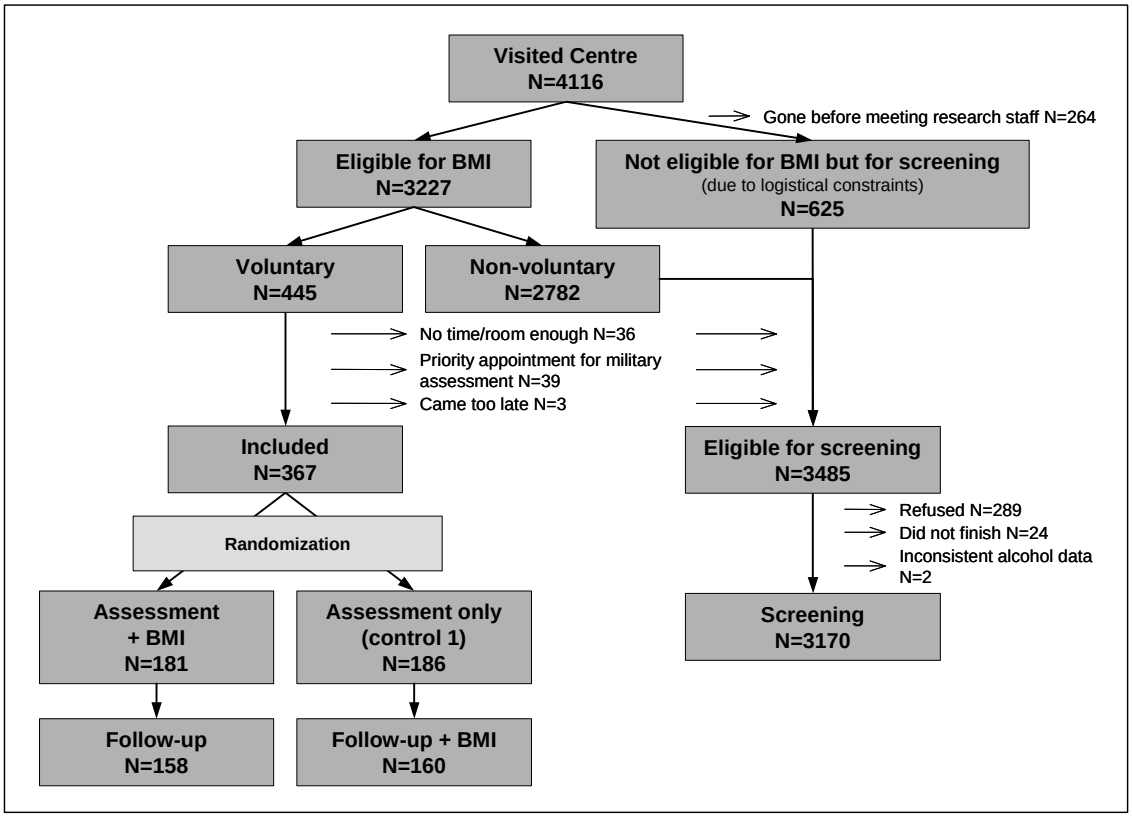
3 RESULTS

3.1 SAMPLE CHARACTERISTICS

The trial profile is presented in Figure 1. 4'116 young men visited the recruitment centre during inclusion period. 3'227 were eligible for BMI and 445 of them (13.8%) showed up for receiving a BMI. Of those showing up for BMI, 36 were not included due to lack of time or space to conduct BMI (only one separate room was available to conduct BMI in a confidential environment), 39 due to priority appointment for military assessment (conscripts had to leave in order to follow recruitment procedures before we could conduct BMI), and 3 that came too late (and thus had to leave in order to follow army procedures), 78 in total. In conclusion, 367 were included in the study, 181 in the BMI group and 186 in the control group.

158 individuals (87.3%) could be followed up at 6 months in the treatment group and 160 (86.0%) in the control group. Lost to follow-up were 4 individuals finally refusing, 12 were joined and fixed an appointment but did not answer again, and 29 were never reached. 4 individuals (2 in both groups) were followed-up but their data were not recorded due to technical problems. Individuals in the control group (waiting list) were asked whether they would like to get their BMI now on phone; 48 (30.0%) accepted to receive the BMI by phone.

Figure 1. Trial profile



Conscripts not showing up for BMI (n=2'782; non-voluntary), those willing to receive BMI but who could not be included (n=78; voluntary not showing up), and those in the group not eligible for BMI but for screening due to logistical constraints (n=625, see above) were eligible to fill out the short screening questionnaire. 3170 (91.0%) filled out the questionnaire, 289 (8.3%) refused, 24 did not finish the screening questionnaire because they were called by the army for mandatory army assessments, and 2 were excluded afterward due to apparent inconsistent data (e.g. being a non drinker and having had more than 100 drinks the week before interview).

Socio-professional as well as alcohol and substances use data of the total sample are presented in Table 1.

Table 1. Sample characteristics (N=3537)

Age, mean (SD)	19.4 (1.2)
Education	
Obligatory school, n (%)	1765 (50.1)
Professional education, n (%)	922 (26.2)
College degree or higher, n (%)	835 (23.7)
Professional status	
Employed, n (%)	758 (21.5)
In training, n (%)	2451 (69.4)
Unemployed, public welfare, sabbatical year, n (%)	322 (9.1)
Urban environment, n (%)	1745 (49.5)
Drinking days/week, mean (SD)	2.0 (1.7)
Drinks/drinking day, mean (SD)	4.2 (4.1)
Weekly drinking amount (usual), mean (SD)	9.1 (12.2)
Weekly drinking amount (last week), mean (SD)	11.5 (15.2)
Risky single occasion drinking (6+)/month, mean (SD)	3.1 (3.7)
Maximum drinks in one occasion (last year), mean (SD)	13.4 (10.6)
Age of first time intoxicated, mean (SD)	15.1 (1.7)
At-risk weekly drinking amount (>=21/week), n (%)	369 (10.4)
At-risk for risky single occasion drinking (>1 RSOD/month), n (%)	1897 (53.6)
At least one alcohol risk, n (%)	1902 (53.8)
Smoke tobacco, n (%)	1811 (51.2)
Daily smoking, n (%)	1293 (36.6)
Cigarettes/smoking days, mean (SD)	11.3 (8.0)
Already used cannabis, n (%)	2127 (60.2)
Cannabis use (last 6 months)	
Never, n (%)	2182 (61.8)
Once/month or less, n (%)	555 (15.7)
2-4 times/month, n (%)	218 (6.2)
2-3 times/week, n (%)	178 (5.0)
4 times/week or more, n (%)	399 (11.3)
Already used other illicit drugs, n (%)	612 (17.4)

More than half (53.8%) of men in this age group were at risk for alcohol use according to our definition. At risk alcohol use was mainly represented by RSOD at-risk use; at-risk users in terms of weekly drinking amount (10.4%) were almost always also RSOD drinkers. More details on the interplay of drinking patterns in this sample have been published [58].

More than half of these young men were current smokers (51.2%; 36.6% were daily smokers), 38.2% smoked cannabis in the past months. More details on the interplay of these substance use behaviors have been submitted for publication (Gmel et al., submitted).

3.2 BASELINE COMPARISONS

Those showing up for an intervention and having been included in the study were compared with those who did not (Table 2). Results showed that these two groups did not differ on socio-demographic variables age, urbanicity, employment status and education, but also not on tobacco and cannabis use. Thus, despite a voluntary participation and therefore the lack of randomization, both groups only significantly ($p < 0.05$) differed on alcohol use measures. In our opinion, this reflects the fact that the target group for the intervention on alcohol use has well been reached.

Table 2. Comparison between those included in the BMI study (voluntarily showing up) and those not included (N=3537)

	Non-voluntary or voluntary not included*	Voluntary and included	p
	N=3170	N=367	
Age, mean (SD)	19.5 (1.2)	19.4 (1.1)	0.55
Education			
Obligatory school, n (%)	1577 (50.0)	188 (51.4)	0.82
Professional education, n (%)	831 (26.3)	91 (24.9)	
College degree or higher, n (%)	748 (23.7)	87 (23.8)	
Professional status			
Employed, n (%)	686 (21.7)	70 (19.1)	0.51
In training, n (%)	2190 (69.2)	261 (71.3)	
Unemployed, public welfare, sabbatical year, n (%)	287 (9.1)	35 (9.6)	
Urban environment, n (%)	1573 (49.8)	172 (47.3)	0.36
Drinking days/week, mean (SD)	2.0 (1.7)	2.2 (1.7)	0.00
Drinks/drinking day, mean (SD)	4.1 (4.1)	4.7 (3.9)	0.00
Weekly drinking amount (usual), mean (SD)	8.9 (12.3)	10.5 (10.6)	0.00
Weekly drinking amount (last week), mean (SD)	11.2 (15.0)	14.3 (16.4)	0.00
Risky single occasion drinking (6+)/month, mean (SD)	3.1 (3.8)	3.2 (3.5)	0.14
Maximum drinks in one occasion (last year), mean (SD)	12.9 (10.0)	17.5 (14.0)	0.00
Age of first time intoxicated, mean (SD)	15.0 (1.8)	15.2 (1.5)	0.22
At-risk weekly drinking amount (>=21/week), n (%)	327 (10.3)	42 (11.4)	0.50
At-risk for risky single occasion drinking (>1 RSOD/month), n (%)	1684 (53.1)	213 (58.0)	0.07
At least one alcohol risk, n (%)	1689 (53.3)	213 (58.0)	0.08
Smoke tobacco, n (%)	1618 (51.0)	193 (52.6)	0.57
Daily smoking, n (%)	1157 (36.5)	136 (37.1)	0.83
Cigarettes/smoking days, mean (SD)	11.4 (8.0)	11.2 (7.7)	0.99
Already used cannabis, n (%)	1895 (59.8)	232 (63.2)	0.21
Cannabis use (last 6 months)			
Never, n (%)	1944 (61.4)	238 (64.9)	0.63
Once/month or less, n (%)	501 (15.8)	54 (14.7)	
2-4 times/month, n (%)	201 (6.4)	17 (4.6)	
2-3 times/week, n (%)	161 (5.1)	17 (4.6)	
4 times/week or more, n (%)	358 (11.3)	41 (11.2)	
Already used other illicit drugs, n (%)	536 (17.0)	76 (20.7)	0.08

* 78 individuals not included due to lack of time or space to conduct BMI, or priority appointment for military.

Pearson Chi-squared for categorical variables and Mann-Whitney test for continuous variables.

As can be seen in Table 3, the randomization of those showing up for an intervention into treatment and control group showed no significant differences across 26 variables, with the exception of professional status, where those receiving an intervention were less often employed. It should be noted

that with a significance level of $p < 0.05$, statistically one would expect 5 out of 100 independent tests to be significant by chance, which means more than 1 out of 26 tests (namely 1.3). Although the tests provided in Table 3 are neither statistically nor content-wise independent (related questions on alcohol or tobacco use), the statistically significant differences for professional status can be assumed to have occurred by chance. It is also important to note that randomization was done blind to the results of the assessment and the participants had no possibility to influence their randomization. It is therefore very unlikely that those with paid work were less often chosen for intervention because they were employed.

Table 3. Comparison between Intervention and Control groups (N=367)

	Intervention	**Control**	**p**
	n=181	n=186	
Age, mean (SD)	19.4 (1.0)	19.4 (1.2)	0.97
Education			
Obligatory school, n (%)	92 (50.8)	96 (51.9)	0.39
Professional education, n (%)	41 (22.7)	50 (27.0)	
College degree or higher, n (%)	48 (26.5)	39 (21.1)	
Professional status			
Employed, n (%)	25 (13.8)	45 (24.3)	0.03
In training, n (%)	139 (76.8)	122 (65.9)	
Unemployed, public welfare, sabbatical year, n (%)	17 (9.4)	18 (9.7)	
Urban environment, n (%)	89 (49.7)	83 (44.9)	0.35
Drinking days/week, mean (SD)	2.2 (1.6)	2.2 (1.7)	0.79
Drinks/drinking day, mean (SD)	4.8 (4.2)	4.7 (3.6)	0.71
Weekly drinking amount (usual), mean (SD)	10.8 (11.8)	10.1 (9.4)	0.78
Weekly drinking amount (last week), mean (SD)	14.5 (15.0)	14.2 (17.8)	0.46
Risky single occasion drinking (6+)/month, mean (SD)	3.2 (3.7)	3.2 (3.2)	0.55
Maximum drinks in one occasion (last year), mean (SD)	17.0 (14.2)	18.0 (13.8)	0.32
Maximum drinks in one occasion (last month), mean (SD)	11.6 (8.8)	13.2 (10.3)	0.15
Age of first time intoxicated, mean (SD)	15.2 (1.3)	15.2 (1.7)	0.64
AUDIT score, mean (SD)	9.7 (6.3)	10.1 (6.1)	0.60
At-risk weekly drinking amount (>=21/week), n (%)	23 (12.7)	19 (10.2)	0.45
At-risk for risky single occasion drinking (>1 RSOD/month), n (%)	106 (58.6)	107 (57.5)	0.84
At least one alcohol risk, n (%)	106 (58.6)	107 (57.5)	0.84
Number of alcohol related consequences (0-12, Wechsler), mean (SD)	3.0 (2.3)	3.2 (2.5)	0.82
Importance to change (10-point visual analog scale)	2.8 (2.3)	2.7 (2.3)	0.93
Readiness to change (10-point visual analog scale)	3.9 (3.1)	3.8 (3.2)	0.52
Confidence to change (10-point visual analog scale)	8.1 (2.6)	7.5 (3.0)	0.08
Smoke tobacco, n (%)	89 (49.2)	104 (55.9)	0.20
Daily smoking, n (%)	62 (34.3)	74 (39.8)	0.27
Cigarettes/smoking days, mean (SD)	10.9 (7.1)	11.5 (8.2)	0.76
Already used cannabis, n (%)	113 (62.4)	119 (64.0)	0.76
Cannabis use (last 6 months)			
Never, n (%)	124 (68.5)	114 (61.3)	0.39
Once/month or less, n (%)	23 (12.7)	31 (16.7)	
2-4 times/month, n (%)	6 (3.3)	11 (5.9)	
2-3 times/week, n (%)	10 (5.5)	7 (3.8)	
4 times/week or more, n (%)	18 (9.9)	23 (12.4)	
Already used other illicit drugs, n (%)	36 (19.9)	40 (21.5)	0.70

Pearson Chi-squared for categorical variables and Mann-Whitney test for continuous variables

3.3 ATTRITION ANALYSIS

We first compared baseline data of the 318 that could be followed up at 6 months to the 49 that we could not reached or who refused to be followed-up.

Table 4. Comparison between individuals having completed follow-up procedures and those having not (Baseline data, N=367)

	Completed follow-up	Did not complete follow-up	p
	n=318	n=49	
Age, mean (SD)	19.5 (1.1)	19.6 (1.1)	0.67
Education			
Obligatory school, n (%)	158 (49.8)	30 (61.2)	0.25
Professional education, n (%)	83 (26.2)	8 (16.3)	
College degree or higher, n (%)	76 (24.0)	11 (22.4)	
Professional status			
Employed, n (%)	61 (19.2)	9 (18.4)	0.22
In training, n (%)	229 (72.2)	32 (65.3)	
Unemployed, public welfare, sabbatical year, n (%)	27 (8.5)	8 (16.3)	
Urban environment, n (%)	140 (44.4)	32 (65.3)	0.01
Drinking days/week, mean (SD)	2.1 (1.6)	2.8 (2.1)	0.03
Drinks/drinking day, mean (SD)	4.7 (4.0)	4.7 (3.8)	0.82
Weekly drinking amount (usual), mean (SD)	10.0 (9.8)	13.2 (14.6)	0.23
Weekly drinking amount (last week), mean (SD)	13.6 (14.6)	19.1 (24.9)	0.33
Risky single occasion drinking (6+)/month, mean (SD)	3.2 (3.5)	3.4 (3.2)	0.38
Maximum drinks in one occasion (last year), mean (SD)	17.3 (13.9)	18.7 (14.3)	0.43
Maximum drinks in one occasion (last month), mean (SD)	12.3 (9.6)	13.0 (9.6)	0.61
Age of first time intoxicated, mean (SD)	15.1 (1.5)	15.5 (1.8)	0.09
AUDIT score, mean (SD)	9.7 (6.1)	11.1 (6.7)	0.16
At-risk weekly drinking amount (>=21/week), n (%)	34 (10.7)	8 (16.3)	0.25
At-risk for risky single occasion drinking (>1 RSOD/month), n (%)	182 (57.2)	31 (63.3)	0.43
At least one alcohol risk, n (%)	182 (57.2)	31 (63.3)	0.43
Number of alcohol related consequences (0-12, Wechsler), mean (SD)	3.0 (2.3)	3.9 (3.2)	0.13
Importance to change (10-point visual analog scale)	2.6 (2.2)	3.6 (2.8)	0.02
Readiness to change (10-point visual analog scale)	3.8 (3.2)	4.3 (3.1)	0.09
Confidence to change (10-point visual analog scale)	7.9 (2.8)	7.0 (3.3)	0.10
Smoke tobacco, n (%)	169 (53.1)	24 (49.0)	0.59
Daily smoking, n (%)	115 (68.0)	21 (87.5)	0.05
Cigarettes/smoking days, mean (SD)	10.8 (7.8)	14.3 (6.4)	0.02
Already used cannabis, n (%)	202 (63.5)	30 (61.2)	0.76
Cannabis use (last 6 months)			
Never, n (%)	94 (46.5)	9 (30.0)	0.01
Once/month or less, n (%)	49 (24.3)	5 (16.7)	
2-4 times/month, n (%)	16 (7.9)	1 (3.3)	
2-3 times/week, n (%)	14 (6.9)	3 (10.0)	
4 times/week or more, n (%)	29 (14.4)	12 (40.0)	
Already used other illicit drugs, n (%)	64 (20.1)	12 (24.5)	0.48

Pearson Chi-squared for categorical variables and Mann-Whitney test for continuous variables

As can be seen in Table 4, although not always significantly so, those lost to follow-up drank more heavily, were more often daily smokers and smoked more cigarettes per day, were more often actual cannabis users and used cannabis more frequently, and were more often lifetime user of other illicit drugs. They saw more often the importance to change their alcohol use and were more ready to do so.

However, they also felt less confident in actually being able to change their alcohol use. Thus in summary, those lost to follow-up were more often heavy substance user that saw the need for changing something but felt unable to do so. Important for the present study, however, was that attrition was non-differential (i.e., not related with the intervention); as can be seen in figure 1, 23 individuals dropped out from the intervention group and 26 from the control group. This means that loss to follow-up biased effects towards the null, resulting in conservative estimates of effects [59].

3.4 FOLLOW-UP COMPARISONS

We tested whether the intervention (BMI) had any effects a) on alcohol use and b) on other substance use, because crossover effects of BMI have been found in other studies.

As shown in Table 5, with one exception all findings on alcohol use went in the expected direction, e.g. a stronger decrease in alcohol use (or a smaller increase as for weekly usual drinking amount). To give an example, the risk for RSOD decreased from 57% at risk users at baseline to 50.6%, i.e. a 6.4 percent point decrease in the intervention group. The corresponding finding in the control group was an only 0.6 percent point decrease (from 57.5% to 56.9%). The only exception was the maximum number of drinks on one occasion (follow-up: $mean_{BMI} = 12.7$; $mean_{control} = 12.6$). It should be noted that values were similar at follow-up and that this variable had the largest (in terms of the p-value) baseline difference, pointing to the possibility that the measure was affected by outliers in the control group.

As regards other substance use, daily smoking increased in both groups, which is common at younger ages, but the increase was smaller (2.5 percent points) than in the control group (4.4 percent points). Weekly cannabis use remained stable in the intervention group, but slightly increased in the control group.

Despite these encouraging and consistent positive findings, none reached significance at conventional levels ($p < 0.05$).

Table 5. Alcohol and substance use evolution between baseline and follow-up, comparison between intervention and control groups (N=318)

		Intervention	Control	p
		n=158	n=160	
Weekly drinking amount (usual), mean (SD)	Baseline	10.2 (10.9)	9.8 (8.6)	0.58
	Follow-up	11.8 (22.6)	11.6 (21.8)	0.71
	Difference	1.5 (21.0)	1.8 (20.2)	0.60
Weekly drinking amount (last week), mean (SD)	Baseline	13.7 (14.2)	13.5 (15.1)	0.65
	Follow-up	11.5 (14.2)	12.3 (18.3)	0.94
	Difference	-2.2 (12.7)	-1.3 (18.8)	0.73
Risky single occasion drinking (6+)/month, mean (SD)	Baseline	3.0 (3.7)	3.3 (3.3)	0.24
	Follow-up	2.6 (3.1)	2.9 (3.8)	0.44
	Difference	-0.4 (3.0)	-0.4 (3.7)	0.43
Maximum drinks in one occasion (last month), mean (SD)	Baseline	11.3 (8.7)	13.3 (10.4)	0.06
	Follow-up	12.7 (14.6)	12.6 (10.8)	0.40
	Difference	1.4 (12.8)	-0.7 (9.4)	0.20
At-risk weekly drinking amount (>=21/week), n (%)	Baseline	18 (11.4)	16 (10.0)	0.69
	Follow-up	13 (8.2)	20 (12.5)	0.21
At-risk for risky single occasion drinking (>1 RSOD/month), n (%)	Baseline	90 (57.0)	92 (57.5)	0.92
	Follow-up	80 (50.6)	90 (56.3)	0.32
At least one alcohol risk, n (%)	Baseline	90 (57.0)	92 (57.5)	0.92
	Follow-up	80 (50.6)	91 (56.9)	0.26
AUDIT score, mean (SD)	Baseline	9.4 (6.1)	9.9 (6.0)	0.50
	Follow-up	9.3 (5.2)	9.8 (5.8)	0.49
	Difference	-0.2 (4.4)	-0.1 (4.4)	0.55
Number of alcohol related consequences (0-12, Wechsler), mean (SD)	Baseline	2.9 (2.2)	3.1 (2.3)	0.68
	Follow-up	2.7 (2.2)	2.7 (2.1)	0.93
	Difference	-0.2 (1.7)	-0.3 (1.7)	0.69
Importance to change (10-point visual analog scale)	Baseline	2.7 (2.2)	2.6 (2.1)	0.97
	Follow-up	2.1 (1.7)	2.1 (1.7)	0.26
Readiness to change (10-point visual analog scale)	Baseline	3.8 (3.1)	3.8 (3.2)	0.79
	Follow-up	3.7 (3.3)	3.4 (3.2)	0.97
Confidence to change (10-point visual analog scale)	Baseline	8.2 (2.6)	7.7 (2.9)	0.90
	Follow-up	8.5 (2.1)	8.3 (2.2)	0.32
Smoke tobacco, n (%)	Baseline	79 (50.0)	90 (56.3)	0.26
	Follow-up	75 (47.5)	85 (53.1)	0.31
Daily smoking, n (%)	Baseline	54 (34.2)	61 (38.1)	0.46
	Follow-up	58 (36.7)	68 (42.5)	0.29
Already used cannabis, n (%)	Baseline	98 (62.0)	104 (65.0)	0.58
	Follow-up	105 (66.5)	117 (73.1)	0.20
Cannabis >1x/week	Baseline	22 (13.9)	21 (13.1)	0.84
	Follow-up	22 (13.9)	22 (13.8)	0.96

Pearson Chi-squared for categorical variables and Mann-Whitney test for continuous variables

4 DISCUSSION

4.1 ANALYTICAL FINDINGS

The present study showed that BMI on alcohol use in an army setting could be effective. Generally, findings were in the expected direction; a reduction in alcohol use in the intervention group over and above that in the control group. The intervention affected both dimensions of drinking the average volume of drinking and RSOD. Thus, the study was in line with other (meta-analytical) randomized controlled studies on the efficacy of BMI on alcohol use [22-24]. There are currently only few studies that attempted to provide BMI in adolescent and young adult populations [30;32-35]. BMIs have a great potential among adolescents and young adults [26] because of the concentration on avoiding argumentation and hostile confrontation, while accepting adolescents as individuals without giving lectures to them or issuing ultimata.

Moreover, the study also showed the likelihood for beneficial crossover effects to other substances such as tobacco and cannabis, again confirming other studies [33;36;37]. Young people often do not show a single problem behaviour but multiple substance use and multiple problem are often clustered and therefore labeled like 'general syndrome of deviance' [60] or a 'problem behaviour syndrome' [61]. Kokkevi et al. [62] showed, for example, that early cannabis use is associated with frequent alcohol and tobacco use across different European countries, and the link between substance use risks has also been shown for the population of the present study [63]. It may therefore be promising to change BMI in a direction that it addresses more than one substance at the time [48;64].

On the negative side of our study lies the fact that none of our findings reached statistical significance. The consistency of findings across measures and substances, however, raises hope that non-significance in the present study does not mean no effect, but mainly insufficient power of this pilot study. In addition, the budget of the present pilot did not permit to use experienced counselors. We trained master-level psychologists without experience, i.e. the here presented pragmatic trial was in fact their first experiences in counseling. We are therefore very confident that with more experienced counselors effects will be stronger and thus will become significant in only a slightly larger sample. But even if effects remained as weak as in a present study, we think it is worth the effort. We are not aware of any individual interventions among young men that have demonstrated a reduction in RSO drinkers of 6 percent points. Potentially more effective structural measures such as price increases or restrictions on sales via reduced densities or opening hours have recently been rejected by the Swiss government.

4.2 IMPLEMENTATION PROCESS

One of the most important aspects of the present pilot study was to explore the feasibility to implement BMI in an army environment. The advantage of providing BMI in this environment is straightforward: BMI's reach a census of young men and not only some selective subgroups. Recruitment procedures are mandatory in Switzerland and thus virtually all men age 19 years have to pass these procedures.

The experience with the present pilot was very positive. After some teething troubles, where the BMI staff and army staff had to find ways to optimize workflows in a way not to interfere with the

recruitment procedures, the provision of preventive efforts found general approval by the army. Clear signs of this general approval is that a) in nowadays and 18 months since the project's start we are still delivering BMI to conscripts, b) the recruitment center provides us with a room that can be exclusively used by us, and even a second room on some days, and c) there is regular support from the army staff that guides conscripts through the recruitment, e.g. through encouraging conscripts to join the study.

There is similarly a large approval by these young men, which can be seen by the fact that we sometimes get more clients for BMI than we can serve in the available amount of time. This demonstrates the urgent need for counselling and intervention in this age group.

4.3 FUTURE PROSPECTS

The funding of the Swiss Alcohol Research Foundation has led to an implementation of BMI in the Lausanne recruitment center. All procedures are now fully implemented and working. The possibility to "prove" an access to the field has made it possible to obtain further funding a) from the so-called alcohol tenth (tax revenues attributed for prevention, and anchored in article 43a of the alcohol law) of the Canton Vaud that permitted to maintain counseling over the pilot phase up until today and b) a major grant from the tobacco prevention funds, which started May 2008 and will be used to deliver tobacco BMI's to conscripts. Finally, the group has submitted an initial grant to the National Science Foundation that seeks for following-up all conscripts to shed a light on why some individuals mature out whereas others do not. This grant would also permit to look at the long-term effectiveness of BMI. Although this grant has not been appointed yet, the proposed study has been chosen to participate in the final application round.

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