

# **Evaluation of Prime for Life**

– Implementation and Outcomes of the Prime for Life Risk Reduction Program at Örebro University, Sweden.

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## Summary

The Center for Social Research on Alcohol and Drugs (SoRAD) at Stockholm university has evaluated the implementation and outcomes of the Prime for Life program, which in the spring of 2005 was offered to students at the Department of Restaurant and Culinary Arts at the Örebro University in Sweden.<sup>1</sup> The evaluation have studied both the implementation of the program and its outcome on alcohol behavior for participants.

The implementation of the program and how it was received by the department and by students has been studied through interviews with department staff and students, and through a web survey administrated to students that participated in the two day Prime for Life program.

The outcomes of the program have been studied with a quasi-experimental research design using a web survey. Questionnaire answers from 44 students that participated in Prime for Life have been compared with those from a control group of 354 students, before the start of the Prime for Life program and 12 month later after the program.

The implementation study shows that the Prime for Life program was very appreciated by participating students. Even though both the university and the department administration management claimed to be supportive of the idea of implementing the Prime for Life program at the department, the evaluation shows that instructors and administrative staff at the Department of Restaurant and Culinary Arts felt that they had not been involved in the decision of alcohol prevention program or about the details on when and how to implement it. A group of Department staff (instructors and administrative personnel) participated in the Prime for Life program in the fall of 2004 to gain approval for the program at the department. The staff was no where near as appreciative of the program as the students that later participated in the same program. The evaluation result stress the importance of making sure that stakeholders on all levels in the target organization participate in the early stages of choosing a program and in the planning of its implementation.

The outcome evaluation used effect size to determine how efficient the program is to change alcohol behavior among participating students. Results show that the Prime for Life program has a large effect on "risk awareness" among participating students, but trivial or small effects when it comes to alcohol behavior. However, for the group of students that has been identified as "risk consumers" of alcohol (as defined by a minimum of six AUDIT-points for women and eight for men before participating in the Prime for Life program), the program has a large effect (1.24) on their total AUDIT-score.

The evaluation concludes (in congruence with results from other evaluations of Prime for Life in Sweden) that Prime for Life has an effect on risk awareness, but limited effects on alcohol behavior, at least when used as *primary prevention*.

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<sup>1</sup> The original reports in Swedish (Sandberg 2006 and Sandberg 2007) can be downloaded from [www.sorad.su.se](http://www.sorad.su.se)

# 1. Introduction

This report presents the results of an evaluation of the alcohol prevention program Prime for Life, which was implemented at the Department of Restaurant and Culinary Arts at the Örebro University in 2005.

## **1.1 Background, aim and research questions**

In Sweden, the National Budget has funding allocated for prevention of alcohol related injuries and problems (proposition 2000/2001:20). The Alcohol Committee, a national alcohol prevention coordinator (2001-2007), decided in 2004 to test the Prime for Life program in a university setting. The Department of Restaurant and Culinary Arts at the Örebro University was asked if they wanted to try the program and participate in an evaluation of it.

The aim of the evaluation is to investigate what outcomes the Prime for Life program has on participant's alcohol behavior, and to study if an intervention such as Prime for Life is useful in a university setting. The target group for the intervention, and correspondingly for the evaluation, consisted of students enrolled at the Department of Restaurant and Culinary Arts at Örebro University. The Department of Restaurant and Culinary Arts is located in Grythyttan, a small town with approximately 800 inhabitants about 80 kilometers north of the main campus of the Örebro University. The department houses Sweden's first academic training for chefs and restaurant staff.

The main research questions for the evaluation can be categorized into questions about the content and delivery of the program, and questions about the outcomes of the program.

### Questions about the program

- Does the program suit the target group?
- How is the program received by the participants?
  - Is the program relevant and reliable?
  - Will the participants use the knowledge they received during the program?
  - What usefulness do the participants see in the program?
- Are there any changes in alcohol culture by the program?
- What are the possibilities and problems in implementing a program like Prime for Life in a university setting?

### Questions about the outcomes

- Are there any changes in participant's risk knowledge?
- Are there any changes in participant's alcohol behavior?

## **1.2 Stakeholders**

The Alcohol Committee is the sole financier of the evaluation.

Prevention Research Institute (PRI) are responsible for the Prime for Life program. The evaluator has participated in the Prime for Life program prior to conducting the evaluation to get an increased understanding and knowledge about the intervention. The evaluator has also had regular contacts with representatives of Prime for Life Sweden as well as with Ray Daugherty, program co-founder.

The Örebro University, the Department of Restaurant and Culinary Arts and its students are the main focus of the evaluation. Both the implementation of the program and the evaluation have been dependent on their interest and capability of participating in the project.

The Student Health Service at the Örebro University have through its contacts with the Alcohol Committee been a part of the initiative to test the Prime for Life program at the university.

The Centre for Social Research on Alcohol and Drugs (SoRAD) is a national centre to strengthen social research on alcohol and drugs in Sweden. SoRAD aims to stimulate and to conduct social science research on alcohol and drugs, including improving methods, increasing theoretical understanding and enhancing links to policy. SoRAD was asked to perform an independent and scientific evaluation of Prime for Life. Bo Sandberg has been the project leader for the evaluation.<sup>2</sup>

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<sup>2</sup> Bo Sandberg, M.S, is a Ph.D-student at the Department of Criminology at Stockholm university and instructor in criminology at the Criminology Department at the University of Southern Maine.

## 2. Prime for Life

The two-day course Prime for Life was developed in the late 1970s and early 1980s by Ray Daugherty and Terry O'Brian, who later founded Prevention Research Institute. Prime for Life is described as a course in risk reduction, and a "... *program designed to gently but powerfully challenge common beliefs and attitudes that directly contribute to high-risk alcohol and drug use*" (www.askpri.org).

### 2.1 Content of the program

Prime for Life aims to teach methods in the reduction of health problems and situation related problems such as DUI, violence and injuries that can be a consequence of alcohol consumption. The goal of the program is

1. To help participants to prevent all forms of alcohol- and drug- related problems
2. To help participants that make high-risk choices to notice and accept the need of change to prevent future problems.

The course promotes the practice of "five steps to risk reduction" related to all kinds of alcohol related problems. The five steps aim to help participants to

1. Recognize signs of biological risks for alcohol related problems
2. Know the guidelines for "low risk choices" regarding alcohol consumption
3. Anpassa the guidelines with hänsyn till person and situation to reduce the risk for situational problems
4. Make a decision to change alcohol behavior or not by identifying what issues are important in such a choice
5. Identify the knowledge and skills necessary to make low risk choices, for example by choosing activities that offer alternatives to alcohol consumption.

Participants individually assess their guidelines for "appropriate" alcohol consumption through exhibits during the program. These guidelines are to either not drink at all, to drink a maximum of two units of alcohol per day or not more than three units per setting for those who do not drink every day.

This evaluation makes no effort to value the scientific validity of the program content. The evaluation sets out to assess if the implementation of Prime for Life has been in correspondence with the intentions set up by PRI and the Alcohol Committee, and if the outcome goals that the program strives to achieve have been reached.

A program theory model of the Prime for Life program is presented in chapter 3.1, below.

## **2.2 Target group**

Approximately 80 percent of the participants in Prime for Life in the United States are DUI offenders (interview with Ray Daugherty, 07/12/04). Several states have treatment programs for DUI-offenders where Prime for Life is included.

According to Ray Daugherty, the program is designed primarily for adult alcohol consumers, and was originally intended to be efficient therapeutic education for people who make high-risk choices when consuming alcohol ([www.askpri.org](http://www.askpri.org)). The program makes no statement to immediately have an effect on people with a low-risk consumption of alcohol.

The main use of Prime for Life is secondary prevention, i.e. with people that have a known alcohol-related problem. In Sweden the Prime for Life program has had a broad target group where the participants do not necessarily have a high-risk consumption of alcohol. For example, the program has been used in high schools in Stockholm, where about one third of the students before the program claimed to consume alcohol one time per month or less (Sjölund & Andréasson 2004).

## **2.3 Previous evaluations of Prime for Life in Sweden**

The STAD (Stockholm Prevents Alcohol and Drug Problems) project has evaluated Prime for Life in two controlled randomized studies among high school students in Stockholm schools and conscripts within the Swedish Armed Forces (Sjölund & Andréasson 2004). Results at a short-term follow-up five months after the program indicated only small differences between the intervention and the control group. Among the high school students, the students who consumed 10 or more drinks on an average drinking day (n=79) made significantly decreased in how many units of alcohol they consumed on a "typical drinking day". The evaluators concluded, however, that "... this is a considerable difference that does not reach statistical significance ..." (Ibid, 31. Translation mine). The conclusion of the evaluations was that Prime for Life has an effect on risk awareness, but that there is no statistically significant effect on alcohol behavior (Ibid).

### **3. Methodology of the evaluation**

The evaluation is based upon the following empirical data:

- A semi-structured in-depth group interview with six instructors and staff at the Department of Restaurant and Culinary Arts, and follow up telephone interviews with the participants in the group interview and three additional people at the department.
- Structured interviews with 30 students who participated in the Prime for Life program.
- Results from a web survey of 44 students who participated in the program two weeks before the program, two weeks after the program and 12 month after the program.
- Results from a web survey from a stratified random sample of 359 students at the Örebro University that did not participate in the Prime for Life program. The students have participated in a web survey corresponding in time to the first and the third data collection of the experiment group.

The data sources will be further described in this chapter, as well as how data has been analyzed. First, a simple program theory of the Prime for Life program is illustrated. This program theory has been used to understand how the program is designed to work, and to show how the different sources of data have been used and in what context they have been analyzed.

#### ***3.1 Program Theory***

The program theory (Rossi, Lipsey & Freeman 2004) links resources and goals in an evaluation by describing the theory and logic of an intervention. The effort here is to clarify what can be expected of Prime for Life and how certain outcomes can be achieved.

Program theory has been used to structure data collection, analysis and the reporting of the results in this evaluation. Prime for Life's theory of action is illustrated below (Figure 1).

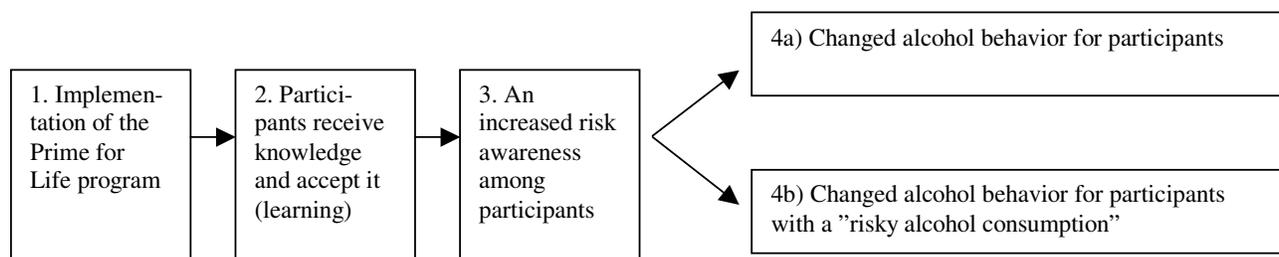


Figure 1 – Program theory used in the evaluation of Prime for Life

The program theory consists of three sections (1-3) that can be seen as anticipated steps and outcomes in a process to change alcohol behavior among participants in Prime for Life. In short, the program theory illustrates that if (1) the implementation of the program is done in a satisfying way, it is assumed that there are (2) conditions for the participants to receive the knowledge that leads to (3) an increased risk awareness. The increased risk awareness then is supposed to be a prerequisite for changed behavior regarding alcohol consumption (4a, 4b).

- 1) In the context of this evaluation, implementation of Prime for Life means that the program has been executed, *and* that it has been so under favorable conditions and that the participants are pleased with the program. This part of the program theory is built on the assumption that the context wherein the program is implemented is important for the outcomes. It is assumed that motivation to participate in an intervention does not happen automatically. A well executed program demands that the stakeholders (in this case the students and the department) understand the Prime for Life program as meaningful (Lilja, Giota & Larsson 2004, Sandberg 2006).
- 2) That the participants receive knowledge and accept it basically represents that there is a learning process happening. Part of this learning process is that the participants feel like they are learning, and that they perceive the program content as trustworthy and that the information received is kept. Information that is not seen as trustworthy and useful is here assumed to have little worth for creating knowledge and to lead to a change in behavior among participating students. This part of the program theory has been studied mostly through questionnaires and interviews with participating students. In this part of the program theory it can also be assessed whether or not the Prime for Life program has motivated participants to change their alcohol behaviors.
- 3) Received knowledge is assumed to lead to an increased risk awareness among participants. Without a risk knowledge it is not likely that the Prime for Life program will lead to a change in alcohol behavior. "Increased risk knowledge" is measured with a set of questions to participants in the program and to a control group.
- 4a) If primary prevention outcomes are expected, then it is a desired result if the group of participating students as a whole shows significant changes in their alcohol behavior.
- 4b) If secondary prevention outcomes are sought for, which seem to be the primary

concept of Prime for Life, then results are most likely to be found in the group of students that prior to the program implementation have a "risky alcohol consumption".

It should be noted that participation in the Prime for Life program is not a prerequisite for a person to change his or her alcohol behavior. It must be understood as part of the theory of Prime for Life: Alcohol users that make high-risk choices, are motivated to change their alcohol behavior through participation of the program. In this report, Prime for Life is evaluated with the starting point being the supposition that participation will lead to certain sustainable changes of attitudes and/or alcohol behaviors among the participants. These changes are assumed to be larger among the participants than among the members of the control group.

The implementation and results of the Prime for Life program is affected by an infinite number of factors, some that the program has "control" over and some that are out of its control. All necessary conditions, such as organizational factors, that also influence the implementation has obviously not been possible to examine in this evaluation.

### ***3.2 Interviews with instructors and staff***

Interviews with instructors and staff at the Department of Restaurant and Culinary Arts have been conducted to get information about the prerequisites for the implementation of Prime for Life. The interviews also aimed at gathering information about respondents experience of, and opinions about the Prime for Life program.

In the fall of 2004, Prime for Life was offered to personnel at the department as a way to gain approval for the implementation of the program among the department's students in the spring of 2005. The idea was that after participating in the program, teachers and other staff at the department would be better prepared to tell the students about the program and to encourage them to participate.

In April 2005 a 120 minute group interview took place with instructors and staff at the department. Six people from the department participated in the interview that was made as a structured in-depth group interview. The interview was recorded and later transcribed. All of the interviewees had participated in the Prime for Life program for the staff at the department. The interview focused on their experience of the program and their ideas about the students taking the program. The group interview encouraged discussion between the participants about their experiences and thoughts about the Prime for Life program.

To complement the group interview, follow-up interviews were made with the participants of the group interview and other key people at the department in the early fall of 2005.

### **3.3 Interviews with students**

In the fall of 2005 telephone interviews were made with 30 students that had participated in the Prime for Life program at the department. The interviews included ten questions covering the student's opinion about the Prime for Life program, their image of the alcohol culture at the department and what they thought might be possible outcomes of the program.

### **3.4 Questionnaires**

Participants in the program were invited to fill out a questionnaire administrated two weeks before the Prime for Life program (T1), two weeks after the program and 12 months after the program (T2). A control group have participated in questionnaires equal to the first (T1) and the last (T2) of the experiment group.

The questionnaires covered three categories of questions:

- Demographical data (i.e. sex, age, field of study, living conditions)
- Questions regarding alcohol consumption and behavior
- Questions regarding "risk knowledge"

In the questionnaire administrated two weeks after the program the experiment group was asked about their experience of Prime for Life. At the 12-month follow-up (T2) both participants in the experiment and the control group were additionally asked questions about lifestyle and lifestyle changes.

#### **3.4.1 Web survey**

The administration of data collection for the outcome study was made as a web survey. This meant that questionnaires were answered at a web page that the students could access through a personal link that had they had received via email. To answer the questionnaire students had to use the link and log in using an individual password included in the email with the link. After answering the questionnaire online, answers were saved on a secure database. The web survey has been administrated through the statistical consultants company Statisticon in Uppsala, Sweden.

The background for choosing to perform a web survey rather than a traditional postal questionnaire was that the management at the Örebro University claimed a widespread use of email to communicate with students about courses, examinations and such. Information from the university is administrated to the a personal university email account that the students receive when they register at the university.

In the evaluation paper questionnaires have been administrated to students who did not do the web survey after two or more reminders. Approximately 85 percent of the empirical data in

the outcome evaluation was generated from the web surveys.

### **3.4.2 Experiment group**

Prime for Life was implemented as a voluntary but scheduled course at the department. All students enrolled at the department in the spring of 2005 (N=223) was defined as the population for intervention since all students at the department were invited to participate in the Prime for Life program. The students were sent information about the evaluation through regular mail as well as email in February of 2005.

After the implementation of Prime for Life at the department the data collection in the evaluation have focused on the students who had participated in the program.

#### *Response rate in the experiment group*

According to information provided by Prevention Research Institute, 62 students participated in the Prime for Life program at the department. Additionally, ten students started the program but did not show up to the second day of the course.

112 students participated in the first test (T1). Statisticon matched the students in their database with those listed as participants in the program by Prevention Research Institute.

44 students who participated in the program and in both the post-test (T1) and the 12-month follow-up study (T2) are included in this evaluation. This means that 71 percent of those 62 students that participated in the program also have participated throughout the whole evaluation.

According to the information provided by Prevention Research Institute, 53 percent of the participants in the program were women and 47 percent were men. In the evaluation, 56 percent of the participants are women and 44 percent men.

### **3.4.3. Control group**

There have been no previous studies about alcohol consumption among students at the Department of Restaurant and Culinary Arts. It was impossible to assess whether or not the unique program, students and location of the department can be assumed to correlate with a higher alcohol consumption than among students at other departments and universities.

Instead of matching the experiment group with students at a similar department, which was predicted as difficult, a control group of students at two other departments at the Örebro University was chosen. The students in the control group differ most significantly from the experiment group in the fact that most of them live in a city with a larger campus area. This fact is an important shortcoming of the evaluation, since access to restaurants and bars may be an important factor when it comes to alcohol consumption among students.

Since all of the students belong to the same university, the benefit of using this control group is that some other factors that can be predicted as important are the same for both groups. Such factors include shared alcohol policies and equal access to student health facilities for example.

Using available information (sex and age distribution) from the university, students from the Department of Finance, Economy and Infomatics and the Department of Natural Sciences were chosen as control group. Based upon the (optimistic) prediction that 200 students would participate in the Prime for Life program at the Department of Restaurant and Culinary Arts, the evaluator made an oversized random sample of 1,200 students at the two departments.

#### *Response rate control group*

20 students were removed from the sample due to insufficient address information. Out of the net sample of 1180 students, 482 (41%) answered the first questionnaire.

At the 12-month follow-up study 359 out of the 482 students participated in the questionnaire. These 359 students that have participated throughout the evaluation are the ones included in the study.

58 percent of the respondents are women, 42 percent men.

### **3.5 Other important details of the evaluation process**

Regular meetings have been held with the Alcohol Committee through out the evaluation. Most often, a representative of Prevention Research Institute and the Student Health Service at the Örebro University participated.

Meetings have been held regularly with Statisticon during the evaluation process.

A planning meeting was held at the Department of Restaurant and Culinary Arts at the beginning of the evaluation. Representatives of the department, Prime for Life, the local student organization and the Student Health Service participated in this meeting, where strategic issues about the Prime for Life program and the evaluation were discussed.

An information meeting took place at the local student organization's annual meeting in Grythyttan in February 2005. Participating students received information about the Alcohol Committee, about the Prime for Life program and the evaluation.

Information about the evaluation was sent out to all students at the Department of Restaurant and Culinary Arts and to the control group before the data collections. The information letter was signed by the project leader for the evaluation, and the principal of the University of Örebro. The information letters stressed that participation in the evaluation was voluntary and that all participants were guaranteed absolute anonymity in the study.

To encourage students to participate, lottery tickets and tickets to movie theatres were given to participating students. Participating students during each data collection has also had the chance to win a bicycle. For each responding student five Swedish crowns (approximately \$0.70) was donated to Save the Children.

The evaluator participated in the Prime for Life program to gain an increased knowledge about the program and its content.

### **3.5.1 Ethical considerations**

Questions regarding alcohol consumption could be seen by respondents as personal and sensitive questions. In the evaluation it was a priority to make sure to protect the respondents' anonymity.

- The web survey was located at a well established and tested (secure) server
- Each respondent received a unique code for the questionnaire to ensure that no one else but the selected respondent could answer it.
- The web survey was designed and built specifically for the study to ensure that the respondents' identity would be protected in the study

During data collection using a web survey there is a link between the email address of a student (their identity) and the unique code that each participant is given so that the students can be matched between the tests (i.e. T1 and T2). Statisticon guaranteed that no information about addresses and codes would be shared to any third party, and data delivered to the researcher was sent in a format so that the researcher have not been able to identify individual students.

The paper questionnaires that have been sent out to students that have not participated in the web survey have been administrated by the researcher. In the paper questionnaire, each student created their own personal code that could be used to match their responses throughout the study, but not to identify the individual respondent.

Due to the small population in the experiment group, results are analyzed for both men and women as one group.

The evaluation plan was sent to the regional ethical review board in Stockholm. The committee decided (27/12/04) that the research project did not need to be reviewed since the research included voluntary participation from its research subjects.

### **3.6 Analysis**

The results are presented in chapter 4-6 (below). Chapter four contains the results regarding the implementation of the program. The empirical data comes from interviews and the questionnaire administered to participating students two weeks after the Prime for Life program.

The outcome results are presented in chapters five. Results are presented for all students, students that have gained risk knowledge and students who have a risky alcohol behavior (according to the AUDIT-10 scale).

Chapter six summarizes and comments the results of the evaluation.

The evaluation can be seen as a total survey, since the sample for the experiment has been all students participating in the Prime for Life program. The fact that the whole population is studied makes it less relevant to perform tests of statistical significance. Changes in the experiment group can be seen as real and representative. Tests of statistical significance are used to compare the values of all outcome variables between the experiment and control group before the Prime for Life program was implemented (T1) and 12 months later (T2). In the analysis, students who have answered the question corresponding to the studied outcome variable are included in the sample.

For the purpose of evaluating the effects of Prime for Life, the outcome study focuses on effect sizes measured as the difference in change in risk knowledge and alcohol behavior in the experiment group in comparison to changes in the control group. When calculating effect sizes, only those students that have answered a question (for example "How often do you have six or more drinks in one occasion?") in both tests (T1 and T2) are included. The effect size (or the net effect) of Prime for Life is the outcome result for participants in the program, minus the result that would have happened without the intervention (i.e. the outcome of the control group).

Effect Size of the program has been calculated according to Cohen's d. The assessment of the Effect Sizes have valued according to the following benchmarks (SBU 2001):

- < 0.20: Trivial Effect
- 0.20-0.50: Small Effect
- 0.50-0.80: Moderate Effect
- > 0.80: Large Effect

In one of the original reports from the evaluation (Sandberg 2007), data imputation was used to study the impact of missing data from individual respondents. Missing data at the time of the follow-up study (T2) was replaced with the respondents' answer from the pre-test (T1). The study showed no difference in results when using data imputation. In this report, the "true observations" (i.e. the original data) have been used.

Please note that the evaluation has focused on changes in the outcome variables, not on measuring the actual level of alcohol consumption (for example) among the students. The averages presented in this chapter can not be directly translated into estimations of alcohol use among the students.

### 3.6.1 Outcome variables in the analysis

Four variables have been used to measure the outcomes of Prime for Life.

#### *Risk awareness*

If the program theory of Prime for Life is logical and correct, an increased risk awareness among participants in the program constitutes an important first step towards changes in alcohol behavior. Risk awareness was measured with seven variables that has been gathered from the Swedish textbook used in the Prime for Life Program (PRI 2003).

- Anyone can develop alcoholism
- How *often* a person drinks affects the risk of developing alcoholism
- How *much* a person drinks affects the risk for developing alcoholism
- A high tolerance for alcohol is a sign for increased risk of developing alcoholism
- We are all born with a level of tolerance towards alcohol that is determined by our heredity
- Every time a person drinks until they are impaired, and then a little bit more, the tolerance is increased
- To drink more alcohol in one seating means a greater risk for alcohol related problems than to drink smaller amounts of alcohol more often.

The respondents have answered to what extent they agree with the claims (above) on a scale ranging from "do not know" (zero points) to "Very much" (four points). The seven variables have been computed to an index that for each student adds up to a maximum of 28 points.

#### *Number of drinks containing alcohol on a typical day when the students are drinking*

The alcohol consumers among the students were asked to answer the question "How many drinks containing alcohol do you have on a typical day when you are drinking?" (AUDIT #2).

#### *How often the students consume alcohol*

The students were asked "How often do you have a drink containing alcohol?" (AUDIT #1).

### *Binge drinking*

Students were asked "How often do you have six or more drinks in one occasion?" (AUDIT #3).

### *AUDIT-points*

The Swedish version of Alcohol Use Disorder Identification Test (AUDIT-10) was used in the evaluation. The test uses three quantity/frequency questions measuring "risky alcohol consumption", three CAGE questions measuring "dependency symptoms" and four questions about consequences (blackouts, injuries, DUI, physician advice, etc.) measuring "harmful alcohol consumption." The scores from the ten questions are added, and the total AUDIT score from the students can be used to assess whether or not they have a "risky" alcohol consumption.

## **4. Results regarding the implementation of the Prime for Life program**

In this chapter the results regarding from the evaluation of the implementation of Prime for Life at the Department of Restaurant and Culinary Arts. The results reflect the two first two steps of program theory (presented above).<sup>3</sup>

### ***4.1 The alcohol culture at the Department of Restaurant and Culinary Arts***

The evaluation aimed to understand what the alcohol culture is in the unique environment that the Department of Restaurant and Culinary Arts is.

It can be argued that the education that is provided at the department is it self promotes alcohol use. For example, sommelier training programs are given, as well as courses focusing on specific knowledge in wine and spirits. On the other hand, each student has to participate in a course involving "responsible alcohol use" to get their exam at the department. The course provides general information about medical, social and legal consequences of alcohol use and misuse, as well as regulations regarding the serving of alcohol in restaurants.

The unique curriculum of the department involves the consumption of alcohol during class hours. A person in the group interview with instructors and staff commented this by saying that

"Here, one has the possibility during class hours test a lot of alcohol... and we recommend all students to spit it out... but off course, a lot is being swallowed. We have not conducted any tests on the students... to see if they can drive a car afterwards... but... well, they drink a lot so they learn how to drink, but they do learn how to drink responsibly."

The personnel at the department did not think that the alcohol consumption among students at their department was higher than in other student environments. Rather, the personnel made a point that their students where significantly different from other students since they are being trained how to deal with alcohol in "the right way". As one teacher explained it, the students "... talk about food and drinks in combination, and they talk more about quality than quantity."

Several people in the group interview mentioned the department's alcohol policy as "extremely strict". The department implemented its alcohol policy before the university itself formulated a policy document. According to the participants of the group interview it was the

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<sup>3</sup> All quotes in this chapter have been translated from Swedish by the author.

students of the department that were the main authors of this policy and therefore, according to them, most students at the department were likely to have a good knowledge about the content of the alcohol policy.

The results from the questionnaire to students that participated in the Prime for Life program (N=44) shows that only 16 percent (7 people) indicated that they had good or very good knowledge about the alcohol policy at their department or the university. Half of the students did not know that there was a policy at all, or had no knowledge at all of the content.

The two most common (and contradicting) types of answers from the students about the alcohol environment at the department indicated that either there was a problematic alcohol consumption among the students at the department, *or* that the students at the department were very cautious about alcohol and preferred smaller amounts of exclusive types of alcohol than students at other places. The quotes below illustrate this.

”We are not many students here – everybody knows everybody. There is always a bunch of students that drink a lot on Wednesdays and on Saturdays. There are more parties with exclusive wines. Many students have had alcohol habits already before they start at the department”

”Restaurant people in general seem to drink a lot. Many people in the business have a high tolerance level. They know a lot about wines, but as students they drink the cheapest wines.”

- - -

”In Grythyttan we have more exclusive alcohol behavior. We spend more money on more exclusive wines.”

”We drink to learn. At other places, people drink to get intoxicated. We do not just drink anything. We drink more quality than quantity.”

It is difficult from the interviews to get a clear idea about what the alcohol culture really is like for students at the Department of Restaurant and Culinary Arts. Is there a culture of ”quality rather than quantity” as presented by the department and (some) students?

## ***4.2 The implementation of the Prime for Life program***

The Alcohol Committee decided to try the Prime for Life program at the Department of Restaurant and Culinary Arts because of well established contacts with the Student Health Service at the department. The head of the department as well as the Vice-Chancellor of the Örebro University was ”very positive” to the idea of implementing Prime for Life at the

Department of Restaurant and Culinary Arts. The intervention had in September 2004 gained approval at the department, according to the Alcohol Committee,.

On November 9th 2004 Prevention Research Institute held a program for the personnel at the department. Less than half of the instructors and staff at the department participated in the program. A second program for the rest of the staff was therefore scheduled in January 2005, and all instructors and staff at the department were invited, as well as representatives of the student organization. Only three people signed up for the second program and it was cancelled.

When interviewing the staff at the department several interviewees described the choice to implement Prime for Life at the department as a decision taken by the Head of the Department without any consultation with instructors or other staff. They claimed that the department needed a very specific program, and that they thought (after participating in the program) that Prime for Life was too general in its presentation.

There had been no discussion about the need to have a prevention program at the department or what such an intervention should focus upon prior to the decision to implement the Prime for Life program. The staff meant that they would have wanted to be more involved in the choice of program and the planning of its implementation. For the instructors at the department, the Prime for Life program became a burden, since it meant that they had to reschedule classes to make room for something that they did not feel that they had initiated (or thought was something good). Several of the instructors who had participated in the Prime for Life program offered to the staff at the department said that they did not think that the program was appropriate for their students (see chapter 4.2.2, below).

The pro tempore Head of the department said that it had been hard to plan and incorporate the Prime for Life program because of how their education programs are designed. He also said that changes take time to gain approval among the instructors.

#### **4.2.2 Staff experiences of Prime for Life**

As mentioned, Prime for Life was implemented for staff at the Department of Restaurant and Culinary Arts in November 2004. Ten people (about half of the staff) participated in the program.

The instructors from Prevention Research Institute reported dissatisfaction to the evaluator after the program. They had felt a resistance from the staff towards the program, and they also felt like the staff acted nonchalant towards them, for example by coming and going during the sessions.

From interviews with staff and instructors from Prevention Research Institute, it is clear that it was just *one* person at the department that was outspokenly positive about the program. The majority of interviewees that had participated in Prime for Life expressed a dissatisfaction with the teaching style that was used by the Prime for Life instructors:

”... it was kind of like that style that there was in early school-years... push that in, do not reflect, do not think, just learn. So, I thought the program was bad, actually.”

”... they asked simple questions and limited our possibility to reflect ourselves. It was embarrassing. You can ask kids in that way, but we are adults. The dialogue with the participants was not good enough.”

One interviewee told about her reflections of the program:

”... the students will not show up on the second day of the program (---) If they sit there and receive the same information as I did, then I think they will never come back.”

A few of the interviewees stated that the type of training that Prime for Life is puts high demands on delivery so that the message will reach through to the participants. Several interviewees indicated that they did not think the teaching style of the instructors during Prime for Life was good, and they were certain that the students would mirror staff opinion.

Some members of the staff gave a bit more nuanced description of the program. They thought that there was a communication problem between PRI and the staff. They said that the staff had not been properly informed about the content of the program, and that they therefore had a negative reaction against it. The Department of Restaurant and Culinary Arts and its programs are described as unique and not comparable to other university departments. Therefore, the staff came to the training with specific ideas of what they needed and what they wanted to discuss.

After the failed attempt to implement the Prime for Life program for the staff at the department, extensive discussions were held between the Alcohol Committee, the department, the student organization, Prevention Research Institute and the evaluator about strategies to make sure that the program could be implemented for the students. As a consequence, a representative for the Alcohol Committee and the evaluator held an information meeting for students at the department in February 2005, and it was decided to include complimentary lunches for participating students during the Prime for Life program. Upon recommendation from the student organization that thought that the Prime for Life could give the students an important added value to their education and actually be a merit applying for a job, it was also decided that participating students would receive a certificate that would show that they had participated in the program.

Instructors at the department felt that it was a problem that the decision to implement the Prime for Life program was made by the management and not them. They felt forced to adjust their course outlines to fit the program. During the group interview, it was discussed whether or not these perceived ”difficulties” were because they personally did not like the Prime for Life program:

”... if it had been a better program, then I do not think there would as much discussion...”  
”One would have had another attitude towards the program then...”  
”Yes, then it is not that hard...”  
”Probably not.”

”We are constantly evaluating ourselves (...) One wants to be proud of what we do and say that we are the best in the business... So, if what we deliver is not really top of the notch... if one feel like this is not really good enough...”

”It was difficult to motivate... that other elements in the course outline were removed for this... when I know what it is...”

A follow-up question to this discussion was if the staff thought their own (negative) experience of the Prime for Life program could have affected how they presented the program towards their own students. The staff made it clear that they had not given a negative picture of the program, rather they emphasized that they strived to be neutral when talking about it with their students.

During late March to the beginning of May 2005, the program was implemented for students at the department.

#### **4.2.3 How the students got to know about the program and what they anticipated from it**

In the interviews, the majority (17 out of 27) of the students claimed that they heard about the Prime for Life program through their teachers. Most students referred to the same individual teacher, and said that he had given a very positive image of Prime for Life. Other common sources of finding out about the program were through emails from Prevention Research Institute and/or the evaluator (9 students) and that the program was mentioned in their course syllabus (9 students). Other (less frequently mentioned) sources of information about the program were friends or participation in the information meeting held at the department by the Alcohol Committee and the evaluator.

The majority of the students claimed that they participated in the program out of curiosity or a specific interest in alcohol questions (18 out of 27 students). Among the other most frequent reasons to participate was because the program was in their course outline (5 students) or that the student had thought that participation was compulsory.

The majority (14 out of 27) of the students could not specify any expectations that they had when they chose to participate in the Prime for Life program. Yet, some (11 students) were pleasantly surprised by the content and quality of the program.

## 4.2.4 Student experiences of the Prime for Life program

In the questionnaire after the Prime for Life program, participating students evaluated the program from four different perspectives.

Table 1: Student grading of Prime for Life. Percent. Experiment group (n=40).

	Overall impression of the program	The instructors teaching style	The instructors knowledge	The program textbook
Very good	17	29	71	29
Good	73	63	27	61
Bad	10	5	3	7
Very bad	-	2	-	-
Do not know	-	-	-	2
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

As a simple course evaluation, the results as shown in table 1, above, indicate that the students had a very positive experience of the Prime for Life program. Interviews with students validate this result. Because of the strong reaction from the staff at the department about how the program was delivered by the instructors from Prevention Research Institute, the students were specifically asked in the interviews to compare the teaching style of Prime for Life with the classes given at the department:

”It [the Prime for Life program] was very cutting edge in how it was delivered. Sometimes our courses are not so good, but this was a good presentation. The quality in the teaching at the department is very uneven.”

”We usually have teachers that just talk and who know nothing about pedagogics. Celebrety chefs come here, people from the restaurant business. Sometimes they just have a bunch of slides that they read off. Prime for Life was much better. The instructors were experienced and they knew what they were talking about.”

”It varies a lot in our courses. It was positive that Prime for Life was thought through, as that is the missing link sometimes in our education. We had a small group, room for discussions and plenty of time. That was good for us.”

The student’s experience of Prime for Life is quite opposite that of the personnel at the department. To a certain degree the student are delivering a severe criticism of how courses at their own department are delivered.

#### 4.2.5 The students view upon received knowledge and their willingness to change their alcohol behavior

The best measurement of "knowledge" (or "perception of risk") after the Prime for Life program (in the context of this evaluation) is if a student share the "risk knowledge" that is being taught through Prime for Life. This theoretical knowledge is, according to the program theory of Prime for Life, a first step toward changed alcohol behavior.

As mentioned, the majority of the students had a very positive experience of the program. Additionally 98 percent (39 students) of the students in the experiment group claimed in the questionnaire administrated two weeks after the program that the content of Prime for Life was trustworthy or very trustworthy.

In the questionarie administrated to participants in the Prime for Life program two weeks after the program (N=40), 23 percent (9 students) estimated that they had some signs of higher biological risk for alcohol problems, and 15 percent (6 students) said that they had strong signs of a higher biological risk. The majority (62%), however, estimated that they did not have any signs of an increased biological risk for alcohol problems.

25 percent (10 students) described their own alcohol consumption as distinguished by high-risk choices, while the majority (69%) described their own alcohol consumption as based upon low-risk choices.

According to their own judgement, the majority of the students had a genetic and social relationship to alcohol that indicated that they after the program *would not* feel any reason to change their alcohol behavior. 23 percent (9 students) thought that they would change how they consumed alcohol as an outcome of participating in Prime for Life.

In the interviews several students expressed that those students who the program would have had most impact upon were not there:

"Those who came are those with less problems. Those who have problems with their alcohol consumption do not go there."

"... I do not think those who drink the most attended to the program, or that they take on the information provided even if they ought to."

Six students spontaneously suggested that Prime for Life should be a compulsory course within their education program. This would make it a priority for all students, and especially make sure that those who need Prime for Life the most also attends.

*If* it is true that those students who are most likely to have alcohol-related problems did not attend, then it is an important factor that affects to what degree Prime for Life reached the

high risk consumers that are most likely to be affected of the program.<sup>4</sup>

#### **4.2.6 The worth of the program for the individual, for the group and in comparsion to other programs at the department**

In the group interview with staff at the department, merits of the Prime for Life program merits were discussed. One person expressed that

”The more people talk... the students talk and the more these issues are repeated, then I think the acceptance for drugs and drinking too much alcohol will decrease... because, we do not accept it here.”

In the questionnaire two weeks after participating in the Prime for Life program, the vast majority of the students (88%) claimed that it was important or very important with programs like Prime for Life at the university.

In the interviews, ten students (27%) claimed that they thought that Prime for Life could change the student environment, while just as many thought that the program had limited possibilities to have an impact on the alcohol culture at the university. The most common argument why Prime for Life *would not* have an impact on a group level was because the students thought that Prime for Life is focused on the individual and that the program would not have an impact unless all students at the department participated.

”The program must be mandatory if it should have a larger impact.”

”If students take the program together... An alcohol policy has a limited function at a university. A course that everybody participates in is much better because everybody gets the same information.”

Two thirds (67%) of the students answered in the questionnaire that they found it important or very important for them personally to participate in a program like this. The majority of the interviewed students also indicated that Prime for Life could change the alcohol behavior of students.

”Yes, because it makes you think. It made me calculate how much I had drunk during the first year and I realized that I drank a lot my first semester at the university.”

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<sup>4</sup> When comparing replies to the first questionnaire (T1) from students who participated in the Prime for Life program with students who answered the questionnaire but did not participate in the questionnaire, *there are no statistically significant differences between* participants and non-participants in risk awareness, the number of glasses of alcohol consumed on a normal drinking day, how often alcohol is consumed, or the frequency of binge drinking (See Sandberg 2007).

”There is no doubt that Prime for Life can make a change. I do not drink often and I do not drink much, but still I think about it. I have alcoholism in my family. Sometimes they want us to taste alcohol in school... the program is an eye-opener if one listens. Several people had very strong reactions during the program.”

More than half of the interviewed students thought that the Prime for Life program had an added value in comparison to other courses at the department, especially in comparison to the ”responsible handling of alcohol”. Mostly the students mentioned the individual perspective on Prime for Life. This perspective leads to a different way of thinking than the much broader societal perspective offered by the course provided in their education.

”Both programs deal with alcohol. Prime for Life went deeper in the risk analysis... it was food for thought... and involved more about personality and how the body reacts to alcohol... Responsible handling of alcohol is a course that is more about facts and a it was senior physican that instructed us.”

### **4.3 Awareness of the university or the department alcohol policy**

One way to approach the question if changes in alcohol culture happens could be to study if the awareness of the alcohol policy at the university or the department increases after the Prime for Life program. Örebro University has a policy (Dnr cf 1.0.1 191-95) that aims to create safety and fellowship in the workplace by making sure that the work environment does not contribute to alcohol and drug (mis)use.

Table 2: Awareness of university or department alcohol policy. Before the Prime for Life program (T1) and one year later (T2). Percent.

	Experiment group (N=44)	
	T1 (N=44)	T2 (n=41)
None at all	48	32
Somewhat	36	43
Good	14	14
Very good	2	5
<b>Total</b>	<b>100</b>	<b>100</b>

16 percent of the students claimed to have good or very good knowledge of the alcohol policy at the university. 12 months after the program, fewer students claimed to have no knowledge about the policy, while roughly the same proportion as before the Prime for Life program claimed to have good or very good awareness about the alcohol policy. It should be noted that the fact that the number of students to have no knowledge about the policy at all decreases during the evaluation period, could be because the students have been asked the same question one year earlier. Students can claim to have gained knowledge about the alcohol policy by just participating in the evaluation!

## 5. Outcome results

Results regarding changes will be presented for three groups of students:

1. All participating students
2. Students with an increased "risk awareness"
3. Risk consumers

### 5.1 Outcome for all participating students

The following analysis includes all students in the experiment and the control group. The development of risk awareness and alcohol behaviors are studied for both groups, and effect sizes have been calculated.

Table 3: Gender and age distribution in experiment and control group. Percent

	Experiment group (N=44)	Control group (N=354)
Women	57	59
Men	43	41
<b>Total</b>	<b>100</b>	<b>100</b>
Born before 1970	2	20
Born between 1971-1980	32	40
Born after 1980	66	40
<b>Total</b>	<b>100</b>	<b>100</b>

The proportion of men and women are roughly the same in the experiment and control group, while the age distribution is different. The proportion of "younger" students (born after 1980) are larger among the students in the experiment group.

Table 4: Average scores on each outcome variable for experiment and control group for students who responded to the questions. Test of statistical significance in difference between the group averages before the program (T1) and 12 months later (T2).

<i>Experiment and control group</i>								
	T1				T2			
	<b>n<sub>exp</sub>/n<sub>ctr</sub></b>	<b>T1<sub>exp</sub></b>	<b>T1<sub>ctr</sub></b>	<b>p</b>	<b>n<sub>exp</sub>/n<sub>ctr</sub></b>	<b>T2<sub>exp</sub></b>	<b>T2<sub>ctr</sub></b>	<b>p</b>
Risk awareness	44/345	20.73	17.75	***	41/295	24.45	18.16	***
Glasses average drinking day	44/345	2.25	2.39	ns	41/293	1.98	2.18	ns
How often alcohol consumption	44/350	3.00	2.90	ns	40/278	2.85	2.73	ns
Frequency binge drinking	43/333	2.30	2.16	ns	39/279	2.03	2.02	ns
AUDIT total	42/319	6.83	6.52	ns	38/272	5.32	5.78	ns

\*\*\* p<0,01

The experiment group had a statistically significant higher average risk awareness in comparison to the control group (t=4.37 p=0.000 independent t-test). At T1 there were no significant differences between the two groups regarding the variables measuring alcohol behavior. This has been interpreted as that there were no significant differences between the two groups in alcohol behavior before the Prime for Life program was implemented at the Department of Culinary Arts.

12 months after the program, there is still a significant difference between the experiment group and the control group regarding risk awareness (t=9.42 p=0.000 independent t-test),<sup>5</sup> however the difference in risk awareness have increased. There are no statistically significant differences between the groups regarding alcohol behavior.

<sup>5</sup> Z=-4.58 p=0.000 Mann-Whitney

Table 5: Effect Sizes regarding alcohol behavior for all students.

	Experiment group (N=44)					Control group (N=354)					<i>ES<sub>PFL</sub></i>
	<i>n</i>	<i>T1</i>	<i>T2</i>	<i>St.dev</i>	<i>ES</i>	<i>n</i>	<i>T1</i>	<i>T2</i>	<i>St.dev</i>	<i>ES</i>	
<b>Risk awareness</b>	41	20.86	24.41	3.25	1.40	290	17.69	18.14	3.92	0.04	<b>1.36</b>
<b>Glasses average drinking day</b>	41	2.29	1.98	0.97	0.33	288	2.35	2.18	1.29	0.14	<b>0.19</b>
<b>How often alcohol consumption</b>	40	3.05	2.85	0.61	0.33	278	2.95	2.73	0.63	0.33	-
<b>Frequency binge drinking</b>	39	2.31	2.03	0.60	0.47	276	2.13	2.03	0.80	0.13	<b>0.34</b>
<b>AUDIT-total</b>	37	6.92	5.37	2.98	0.52	262	6.26	5.74	3.99	0.13	<b>0.39</b>

In the experiment group, 70 percent of the students (n=41) answering the questions regarding risk awareness at both tests (T1 and T2), increased their risk awareness. In the control group, the increase in risk awareness was trivial. The Effect Size of Prime for Life was 1.36, which is a large effect.

The number of glasses of alcohol consumed on an average drinking day decreased in both the experiment and control group. In the experiment group (n=41) 37 percent lowered their value, while the 46 percent gave the same answer in both the pre-test and the post-test. In the control group 28 percent of the students (n=288) decreased their number of glasses, while the majority (58%) stated the same number of drinks in both tests. The Effect Size of Prime for Life was 0.19, a trivial effect.

In the post-test, the average frequency of alcohol consumption had decreased in a similar way in both the experiment and control group. Twenty eight percent of the students in the experiment group (n=40) and 31 percent of the students in the control group (n=278) declared a less frequent alcohol consumption at the 12-month follow up. There is no effect for the Prime for Life program.

The frequency for binge drinking decreased in both groups. In the experiment group (n=39) 36 percent of the students had lowered the frequency of binge consumption. The majority (51%) had no change in the frequency of binge drinking between T1 and T2. In the control group, 20 percent of the students (n=276) had lowered the frequency of binge drinking, while 69 percent had the same frequency between the two tests. The net effect of the Prime for Life program was 0.34, which is a small effect.

There was a significant drop of the average AUDIT-score in the experiment group. Between the pre-test and the post-test, 69 percent of the students (n=37) had lowered their AUDIT-

score (17 percent had the same score in both tests). There is a drop in the control group as well, however there is a small net effect of the Prime for Life program (0.39).

The results indicate an increased risk awareness for participants in the Prime for Life program, but trivial to small effects regarding alcohol behavior.

## **5.2 Outcomes for “risk aware” students**

In the following, results were analyzed for students that have increased their “risk awareness” between the pre-test (T1) and the post-test (T2). Since the risk reduction model of Prime for Life assumes that increased risk awareness can contribute to changed alcohol behavior, this group is of particular interest in the evaluation.

Twenty nine out of 44 individuals (65%) in the experiment group, and 145 out of 354 individuals (41%) in the control group had an increased risk awareness 12 months after the time of the Prime for Life program at the Department of Restaurant and Culinary Arts.

Table 6: Gender and age distribution for “risk aware” student in experiment and control group. Percent

	Experiment group (N=29)	Control group (N=145)
Women	48	57
Men	52	43
<b>Total</b>	<b>100</b>	<b>100</b>
Born before 1970	3	22
Born between 1971 and 1980	31	41
Born after 1980	66	36
<b>Total</b>	<b>100</b>	<b>100</b>

The gender distribution in the groups was similar when looking at all participating students (above). The percentage of male students have increased, particularly in the experiment group. There is still a big difference between the two groups in age distribution. There are a higher percentage of “younger” students in the experiment group.

Table 7: Risk aware students: Average scores on each outcome variable for experiment and control group for students who responded to the questions. Test of statistical significance in difference between the group averages before the program (T1) and 12 months later (T2).

<i>Experiment and control group</i>								
	<b>n<sub>exp</sub>/n<sub>ctr</sub></b>	<b>T1<sub>exp</sub></b>	<b>T1<sub>ctr</sub></b>	<b>p</b>	<b>n<sub>exp</sub>/n<sub>ctr</sub></b>	<b>T2<sub>exp</sub></b>	<b>T2<sub>ctr</sub></b>	<b>p</b>
Risk awareness	29/145	19.72	16.32	***	29/145	25.52	19.89	***
Glasses average drinking day	29/143	2.28	2.36	ns	28/145	2.07	2.21	ns
How often alcohol consumption	29/145	2.83	2.28	ns	28/136	2.86	2.72	ns
Frequency binge drinking	29/138	2.24	2.08	ns	28/136	2.04	2.06	ns
AUDIT total	29/134	6.45	6.16	ns	28/136	5.33	5.76	ns

\*\*\* p<0,01

The experiment group had a statistically higher risk awareness than the control group at the time just before participating in the Prime for Life program (t=3.98 p=0.000 independent t-test)<sup>6</sup> The difference between the two groups was even greater at the 12-month follow up.

There were no statistically significant differences between the experiment and the control group regarding alcohol behavior in either the pre-test or the post-test.

Table 8: Effect Sizes regarding alcohol behavior for risk aware students

	<b>Experiment group (N=25)</b>					<b>Control group (N=145)</b>					<b>ES<sub>PFL</sub></b>
	<b>n</b>	<b>T1</b>	<b>T2</b>	<b>St.dev</b>	<b>ES</b>	<b>n</b>	<b>T1</b>	<b>T2</b>	<b>St.dev</b>	<b>ES</b>	
<b>Risk awareness</b>	25	19.72	25.51	2.07	2.43	128	16.32	19.89	3.55	1.08	<b>1.35</b>
<b>Glasses average drinking day</b>	28	2.32	2.07	0.62	0.40	143	2.36	2.20	1.36	0.12	<b>0.28</b>
<b>How often alcohol consumption</b>	28	3.11	2.86	0.60	0.42	136	2.92	2.72	0.63	0.32	<b>0.10</b>
<b>Frequency binge drinking</b>	28	2.24	2.04	0.62	0.34	135	2.10	2.07	0.84	0.04	<b>0.30</b>
<b>AUDIT-total</b>	23	6.56	5.33	3.24	0.44	115	6.15	5.86	4.04	0.11	<b>0.33</b>

<sup>6</sup> Z=4.67 p=0.000 Mann-Whitney

While all students increased their risk awareness, those in the experiment group did so to a larger extent. The Effect Size for Prime for Life was 1.35, which is a large effect.

Thirty five percent of the risk aware students in the experiment group (n=28) had decreased the value corresponding to how many glasses of alcohol they consumed on an average drinking day, while 47 percent had an unchanged value between the two tests. In the control group 25 percent had a decreased value at the 12-month follow up, while the majority (51%) had a lower value. The effect size of Prime for Life was 0.28, which is a small effect.

Students in the experiment and control group changed in a similar way how often they consume alcohol. 29 percent of the students in both the experiment group (n=28) and the control group (n=136) consumed alcohol less often 12 month after the Prime for Life program. The effect size of Prime for Life was 0.10, a trivial effect.

### **5.3 Risk consumers**

”Risk consumers” have been defined as female students with a total AUDIT score of six or more, and male students with a total AUDIT score of eight or more (see Hradilova Selin 2006).

Table 9: Gender and age distribution for ”risk consumers” of alcohol in experiment and control group. Percent

	Experiment group (N=19)	Control group (N=143)
Women	74	53
Men	26	47
<b>Total</b>	<b>100</b>	<b>100</b>
Born before 1970	-	4
Born between 1971 and 1980	26	45
Born after 1980	74	51
<b>Total</b>	<b>100</b>	<b>100</b>

Forty-three percent of the students in the experiment group and 40 percent of the students in the control group were risk consumers of alcohol. The majority of the risk consumers were women. The percentage of younger students (born 1980 or later) was higher among the risk consumers than in the total population of students in the evaluation.

Table 10: Risk consumers: Average scores on each outcome variable for experiment and control group for students who responded to the questions. Test of statistical significance in difference between the group averages before the program (T1) and 12 months later (T2).

<i>Experiment and control group</i>								
	<i>n<sub>exp</sub>/n<sub>ctr</sub></i>	<i>T1<sub>exp</sub></i>	<i>T1<sub>ctr</sub></i>	<i>p</i>	<i>n<sub>exp</sub>/n<sub>ctr</sub></i>	<i>T2<sub>exp</sub></i>	<i>T2<sub>ctr</sub></i>	<i>p</i>
Risk awareness	19/143	22.53	18.25	***	17/115	24.82	18.29	***
Glasses average drinking day	19/143	2.74	3.34	**	18/116	2.28	2.95	**
How often alcohol consumption	19/143	3.21	3.22	ns	18/115	2.83	2.85	ns
Frequency binge drinking	19/143	2.58	2.78	ns	17/118	2.18	2.47	**
AUDIT total	19/143	9.58	10.28	ns	17/115	6.41	8.55	***

\*\* p<0.05 \*\*\* p<0.01

The difference in risk awareness is, as in previous analysis, statistically significant between the experiment and control group. The risk awareness was higher in the experiment group already before the Prime for Life program.

The risk consumers in the control group had a statistically significant higher average number of drinks on a typical drinking day than the students in the experiment group ( $t=-2.42$   $p=0.02$  independent t-test).<sup>7</sup>

Table 11: Effect Sizes regarding alcohol behavior for risk consumers

	Experiment group (N=25)					Control group (N=143)					<i>ES<sub>PFL</sub></i>
	<i>n</i>	<i>T1</i>	<i>T2</i>	<i>St.dev</i>	<i>ES</i>	<i>n</i>	<i>T1</i>	<i>T2</i>	<i>St.dev</i>	<i>ES</i>	
<b>Risk awareness</b>	17	20.82	24.82	2.85	0.99	115	17.99	18.30	3.98	0.12	<b>0.87</b>
<b>Glasses average drinking day</b>	18	2.78	2.28	1.07	0.47	116	3.33	2.95	1.05	0.36	<b>0.11</b>
<b>How often alcohol consumption</b>	18	3.22	2.83	0.41	0.95	115	2.85	2.47	0.57	0.60	<b>0.35</b>
<b>Frequency binge drinking</b>	17	2.59	2.18	0.55	0.75	115	2.75	2.47	0.67	0.41	<b>0.33</b>
<b>AUDIT-total</b>	17	9.82	6.41	2.09	1.63	112	10.00	8.55	3.71	0.39	<b>1.24</b>

The risk consumers in the experiment group had increased their risk awareness significantly between the pre-test and the post-test. Seventy one percent of the risk consumers ( $n=17$ ) have

<sup>7</sup>  $Z=-2.42$   $p=0.02$  Mann-Whitney

increased their risk awareness (18% had a lower score for the risk awareness index in the 12-month follow up). In the control group, 50 percent of the risk consumers increased their risk awareness between the two tests, while 37 percent decreased it (n=115) . The net effect of Prime for Life was 0.87, which is a large effect.

The number of glasses of alcohol consumed on an average drinking day decreased among risk consumers in both the experiment and the control group. 40 percent of the risk consumers in experiment and control group that answered the question in both of the questionnaires (n=18 and 116) indicated that they consumed less drinks 12 months after the time of the Prime for Life program at the Department of Restaurant and Culinary Arts. The effect size is 0.11, which is a trivial effect.

The frequency of alcohol consumption decreased in both groups. In the experiment group, 39 percent of the risk consumers answering the question on both the pre-test and the post-test (n=18) lowered their frequency of alcohol consumption. None increased how often they consumed alcohol, but 61 percent stated the same frequency of consumption in both tests. In the control group, 39 percent of the risk consumers had decreased the frequency of alcohol consumption, while 54 percent had the same frequency throughout the evaluation. The effect size was 0.35, which is a small effect.

The frequency for binge drinking decreased among risk consumers in the experiment group. Thirty five percent of the risk consumers answering the question in T1 and T2 had lowered how often they binge drank alcohol. However, the majority (59%) had the same frequency for binge drinking in both tests. In the control group, one third (33%) lowered their frequency of binge drinking, while 60 percent had the same frequency in both tests. The effect size for Prime for Life was 0.33 which is a small effect.

For the risk consumers, the most significant result was the change in AUDIT score. The effect of the program was large (1.24). 82 percent of the risk consumers in the experiment group have lowered their AUDIT-score between T1 and T2, compared to 62 percent in the control group. One (6%) of the risk consumers in the experiment group increased their AUDIT-score between the two tests, compared to 21 percent (30 students) in the control group.

#### ***5.4 Comments to the outcome study***

The evaluation results show that the effect of the Prime for Life program on risk awareness is large, but that the effect on alcohol behavior was small or trivial. When we look at the group "risk consumers", a large effect on total AUDIT-score can be identified among participants in the Prime for Life program. All other effects on alcohol behavior were trivial or small.

A variance analysis (GLM repeated measures) was made on the data with all students. It verified the above presented results regarding alcohol behavior. Over time, both groups changed their alcohol behavior in a "desired" way and there was no significant difference between the development in experiment and control group (see Sandberg 2007).

## **6. Summary and comments to the results of the evaluation**

The results from chapter four and five are discussed in relationship to the research questions of the evaluation (see chapter 1.1, above).

### ***6.1 Does the program suit the target group?***

At least 40 percent of the students in both experiment and control group had an AUDIT-score that defined them as "risk consumers" of alcohol. The primary prevention effort used at the Department of Restaurant and Culinary Arts reached a significant number of risk consumers of alcohol.

The students at the Department of Restaurant and Culinary Arts may because of their education (aimed towards food and drink) have a unique "fit" for the program. In addition to a personal assessment of risks associated with alcohol consumption, Prime for Life may have the value of being a merit in the students career in a business where alcohol is one of the major commodities.

### ***6.2 How is the program received?***

In general, the students participating in the Prime for Life program had a very positive experience. While only a minority of the students felt personally motivated to change their alcohol behavior after the program, this is not surprising since the majority were already making choices that were of little risk.

A majority of the students thought that the kind of training that Prime for Life offers was important both for themselves and for the university as a whole.

### ***6.3 What happens on a group level with the alcohol culture?***

The question of what changes on a group level that can be seen after the implementation of the Prime for Life program can not clearly be answered by this evaluation. Only a minority of the students had good or very good knowledge about the department or university alcohol prior to the Prime for Life program. And there is no significant change in this knowledge among the students 12 months after the program. It should be noted that knowledge about the university alcohol policy is not taught in the Prime for Life program. An increased knowledge about alcohol policy is not an anticipated outcome of the program, however it was considered relevant to study in the evaluation to try to assess if changes could be seen in the students awareness of the rules and regulations regarding alcohol in their work environment after the implementation of the program.

To reach significant outcomes on a group level, minimum requirements are most likely that more students have to participate in a program and that interventions have gained approval among *all* stakeholders in the organization where they are being implemented.

#### ***6.4 The possibility to implement Prime for Life in a university environment***

Sixty-two out of about 220 students at the Department of Restaurant and Culinary Arts participated in the program. This may be seen as a positive result, given that participation was voluntary and required two days of attention from the students. It is possible that many students simply could not come because they had other priorities at the time of the program.

Some students stated that those who would have gained most from participating in the Prime for Life program did not show up. If this is true, it seems important to create prerequisites for making all students participate. Mandatory participation could be one way to go. In the case of the Department of Restaurant and Culinary Arts, this quite obviously would have demanded that the intervention had gained a greater approval among teachers and staff at the department than was the case. If implemented as a mandatory part of the education within an education or in an organization, the Prime for Life program can create a shared value among alcohol consumption that could help gain approval for alcohol policy issues.

The possibility for satisfactory implementation of a program like Prime for Life is dependent on a close cooperation between the program financier, the instructors and the organization in which it is being implemented. In this specific case, the evaluation results suggest that a closer cooperation with the teachers and staff at the department could at least have made the implementation easier.

#### ***6.5 Outcomes on alcohol behavior***

Students participating in the Prime for Life program get an increased risk awareness. This seems logical since awareness is what is being taught in the program.

When looking at all students, the evaluation can only identify trivial or small effects of the program on alcohol behavior. Since the Prime for Life program is mainly designed as an intervention for risk consumers, this result is not surprising and follows the logical assumptions of the program theory used in the evaluation.

Students who have been identified as risk consumers of alcohol show that participation in the Prime for Life program had a large effect upon the AUDIT-score. Since the quantity/frequency results are similar to the results for all students, this indicates that risk consumers participating in Prime for Life have decreased their alcohol dependency and/or the "harmfulness" of their alcohol behavior.

It should be noted that the control group decreased their average values on the variables measuring alcohol behavior in the evaluation. There could be several possible reasons why alcohol consumption decreases during the evaluation period, for example:

- There is a "natural" decrease in alcohol consumption (especially binge drinking) the further into their academic education the students have reached (Bullock 2004). In a longitudinal study such as this, it is possible that the results reflect a development that means that the intensity of the students alcohol consumption "naturally" decreases over time (i.e. from pre-test to post-test).
- The evaluation might have a bias caused by the fact that respondents want to present themselves in a way that is socially requested. It could therefore be possible that the students report a lower alcohol consumption in the post-test, since it is both socially anticipated and accepted (see Kühnhorn 1983).

Additionally, external factors not studied in this evaluation might contribute to why students decrease their alcohol consumption, such as changes in lifestyle, a biased recruitment to the Prime for Life program and/or the evaluation, etc.

## **6.6 Final remarks**

Regardless of the type of intervention and its "efficiency" in preventing alcohol problems, there are some lessons learned about both the intervention of the Prime for Life program and the evaluation.

A close cooperation with the university and the department seem to be important for the implementation of a program. The fact that both the top management of the university and the department were supportive of the implementation, can hardly be seen as a guarantee that teachers and other stakeholders will receive the intervention as something positive. It should be a priority to involve *all* stakeholders early in the process of planning the intervention and its implementation. Such an approach stimulates participation and can create long term possibilities for future alcohol prevention initiatives.

While the teachers and staff at the Department of Restaurant and Culinary Arts seemed to have a less positive experience out of Prime for Life, the students were generally very satisfied with the program. There seems to have been a lack of engagement and enthusiasm about the program among teachers and staff at the department. From the evaluation results, we have limited possibilities of assessing why. Data indicate that not enough time was invested in providing information about the program to teachers and staff, that staff at the department was not engaged enough in the planning of the implementation. Possibly, the top management at the department did not communicate the same kind of support for the program towards their own staff as they did towards the Alcohol Committee. Even if these indications are true, we can not tell if they had negative consequences on student participation in the program. However, it must be seen as a preference in the implementation of any intervention that it has gained approval on all levels within an organization.

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