Facebook profile sections as indicators for health behavior and health risk behavior among college students

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Research Article

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Dutch Summary

Het studentenleven wordt vaak geassocieerd met ongezond gedrag en de fysieke ongemakken als gevolg daarvan. Studenten staan bekend om hun overmatige drankgebruik, drugsgebruik, veel en vet voedsel, weinig beweging, katers en bierbuiken. Ondanks dat er vanuit de gezondheidszorg behoefte is aan interventies op deze gedragingen blijft het moeilijk om deze studenten te bereiken en te screenen met als doel het voorkomen van serieuze gezondheidsproblemen en consequenties.

In het laatste decennium is het gebruik van social netwerk sites opgekomen met als resultaat dat vrijwel elke student vandaag de dag online actief is op een social network site, waarvan Facebook wereldwijd de grootste en meest populaire is. Naast dat social network sites zoals Facebook de mogelijkheid bieden voor individuen om een uitgebreid online sociaal netwerk op te bouwen, verschaffen ze functionaliteiten voor het communiceren met andere gebruikers en het delen van activiteiten, interesses, foto's , bezigheden en ideeën met anderen Facebook gebruikers. Door al deze functionaliteiten zouden Facebook profielen de mogelijkheid kunnen bieden inzicht te krijgen in het dagelijkse leven van actieve Facebookgebruikers, het gezondheidsgedrag en gezondheidsricisogedrag waarin deze participeren en zouden daarmee misschien zelfs kunnen helpen in het screenen en identificeren van studenten welke vanwegen hun ongezonde en roekeloze gedrag serieuze gezondheidsproblemen riskeren.

Dit onderzoek was uitgevoerd om te ontdekken in hoeverre een Facebook profiel iets kan vertellen over een student zijn gezondheidsgedrag en daarnaast te onderzoeken welke mogelijkheden Facebook biedt voor de gezondheidszorg in het identificeren van gezondheidsgedrag en probleemgevallen in de studentenpopulatie? Dit exploratieve onderzoek werd uitgevoerd om een eerste stap te vormen in het beantwoorden van deze vragen gericht op een vijftal gezondheidsrisicogedragingen welke veelvoorkomend en problematische zijn gebleken in de studentenpopulatie: alcoholgebruik, drugsgebruik, tabakgebruik, voeding en sport.

De Facebook profielen van 71 studenten werden onderworpen aan een contentanalyse, waarbij foto's, status updates en items van de info pagina geanalyseerd werden op verwijzingen naar gedrag op deze vijf gezondheidstopics. Deze bevindingen zijn vervolgens gekoppeld aan resultaten van de participanten op een vragenlijst naar alcoholgebruik, drugsgebruik, tabakgebruik, voeding, sport en een tiental aanvullende gezondheidsgerelateerde implicaties, zoals het aantal ziektedagen, school- en werkprestaties. Door middel van correlationele analyses is onderzocht in hoeverre het aantal verwijzingen op Facebook naar alcohol, tabak, drugs, voeding en sport, samenhangt met het gerapporteerde gedrag op deze topics in de vragenlijst.

Voor sportgedrag, tabakgebruik en gedeeltelijk alcoholgebruik werd een sterke samenhang gevonden tussen het aantal verwijzingen op een Facebook profiel en het gerapporteerde gedrag. Daarnaast werd er voornamelijk voor het aantal alcohol- en sportverwijzingen op Facebook een relatie gevonden met een deel van de gezondheidsgerelateerde implicaties, zoals de hoogte van het uurloon en het aantal ziektedagen.

Afgaand op de bevindingen van dit onderzoek hebben Facebookprofielen potentie als screeningmiddel voor sportgedrag, rookgedrag en alcoholgebruik onder studenten. Facebookprofielen zouden in de zorg gebruikt kunnen worden voor het identificeren van ontwikkelingen en trends op het gebied van gezondheidsgedrag, en mogelijk ook voor het identificeren van studenten welke vanwegen hun gezondheidsgedrag gevaar lopen op serieuze gezondheidsconsequenties. Echter, de bevindingen moeten bekeken worden in het licht van een aantal beperkingen van het huidige onderzoek. Zo is het onderzoek als exploratief onderzoek opgezet en zijn de analyses uitgevoerd vanuit een vrij kleine steekproef. Toekomstig onderzoek is nodig om meer te weten te komen over het gebruik van Facebookprofielen voor screening en interventiemethoden in de gezondheidszorg en over de externe validiteit van de bevindingen.

Facebook profile sections as indicators for health behavior and health risk behavior among college students

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Abstract: Do Facebook profiles provide a reliable snapshot of the profile owner's health behavior? From the healthcare perspective, this study aimed at exploring the potential of Facebook as a screening tool for health behavior. This was done by exploring the relationship between health behavior references on student Facebook profiles and associated health behavior. The present study focused on a set of five health behavior topics, proven to be common problematic health behaviors in college student consumption and lifestyle patterns: alcohol use, illicit drug use, tobacco use, nutrition, and sports. Students Facebook profiles were taken into content analysis on references to these health behaviors and health risk behaviors and the found results were related to questionnaire results on alcohol use, drug use, tobacco use, nutrition patterns, sports behavior, and a set of ten additional health related implications. The results suggest that references to sports, tobacco and partially alcohol provide a valid reflection of associated health behavior and health risk behavior. Moreover, the results also provide evidence for direct relationships between the health behavior references on Facebook and related everyday implications such as hourly wages and sickness frequency, especially for the sports and alcohol topic. In sum, the results provide evidence for the use of Facebook profiles as a screening tool for students' health behavior. Moreover, the results support the potential of Facebook as screening tool for identifying students and subpopulations which may benefit from interventions on health-risk behaviors, and for identifying trends in the development of the health behavior risks, problems, and consequences on those health behavior topics. Since this research had exploratory intentions and several limitations from the sample and recruitment perspective, future research is recommended to further explore the health behavior risk screening potential of social network site profiles.

Key words: Alcohol; Tobacco; Smoking; Illicit Drugs; Healthy Nutrition; Unhealthy Nutrition; Sports; Facebook; Social Network Sites; Health Behavior; Health-risk Behavior.

Introduction

The college years offer college students the opportunity for new experiences, personal freedom, and identity development; however, this period is also noted for unhealthy lifestyles en the engaging in a variety of health-risk behaviors (Douglas et al. 1995, American College Health Association 2006, 2009). Common college student health-risk behaviors, like excessive alcohol and other substance use, cigarette smoking, poor dietary habits, and lack of sports activities are associated with a range of serious social and physical consequences, including poor academic achievement and performance (Kristjánsson et al. 2010, Trockel et al. 2000, Wolaver 2002, Yamada et al. 1996), obesity (Van Kranen and Harbers 2009, Suter 1997, Wendel-Vos 2010, Wannamethee et al. 2003, Wannamethee et al. 2004), injury, crime and violence (Corrao et al. 2004, Ellickson et al. 2003, Hingson et al. 2002, Lowry 1999, Van Laar and Schoemaker 2010, Wechsler 1994), unemployment and lower post-college wages (Ellickson et al. 2003, Jennison 2004), greater risk for several forms of cancers and lung, liver, or heart diseases (Corrao et al. 1999, Corrao et al. 2004, Van Kranen and Harbers 2009, Rehm et al. 2003, Spencer 2002, Wendel-Vos 2010, Zeegers and Harbers 2011), and even mortality (Bloss 2005, Single et al. 1999, Zeegers and Harbers 2011, Wendel-Vos 2010).

A principal goal of medical personnel and health care institutions is the early identification of behavior or activities which might place the person at risk for morbidity or mortality. A variety of screening tools is available to identify those who are at risk for health problems as a result of their alcohol or other substance use patterns, dietary habits, or physical activity patterns. These screening tools not only offer an effective way to minimize harm by identifying college students at risk and providing appropriate interventions, but they also provide indications of the extent of the problem and trends in the development of the problem, which both can be useful for health service strategies and policy making (Griffiths et al. 2007).

However, the screening of college students on such lifestyle patterns is challenging, since not many students worry about or see the consequences of their health-risk behaviors, and therefore rarely utilize screening methods or preventive healthcare methods provided by health organizations.

To develop the ability of healthcare organizations to provide anticipatory guidance and intervention, innovative external screening methods are needed for identifying college students who are at risk for serious health-risk behavior consequences. A possible opportunity for the screening and identification of health-risk behaviors is provided by the rise of social network sites (SNSs). These websites are popular among students, of which approximately over 95% maintain a SNS profile. Social network sites provide functionalities for individuals to build an online social network, for communicating with individual contacts, and for sharing events, pictures, activities and thoughts with their social network. All these activities enable SNSs to provide insight in day-to-day lives of those who are actively participating, and might even enable SNSs to facilitate in screening and identifying students at risk for serious health behavior consequences.

Health risk behavior on social network sites

The use of social networking sites has exploded in the last years as a means for mainly young people to post information about oneself and communicate with others. Although SNSs provide a fast and easy way of sharing information with friends and acquaintances (Boyd and Ellison 2007), questions have been raised about the use and appropriateness of information on SNSs, since parties other than direct friends and acquaintances have gained access or have used information from the SNS profiles to make decisions that have negatively impacted the profile owner. Evidence has been found for negative consequences of the disclosure of personal information and inappropriate content on SNS profiles. For instance, students have been suspended or criminally charged on the basis of information posted on their SNS profiles (Brady 2006, NRC 2012), and research has shown that students' SNS profiles are often used in assessing their employment candidacy (Clark and Roberts 2010, Van Wingerden 2009).

Despite these warning developments, studies have shown mixed results regarding students' concerns about the possible consequences of information disclosure on SNSs. While some students appear conscious of the impression that others get when viewing their SNS profile, others have to admit the disclosure of information that they would not want current or other employers to see (Peluchette and Karl 2008). Moreover, even of those who are concerned about the disclosure and privacy of their SNS information a major part still discloses a great deal of personal information and undesirable content (Acquisti and Gross 2006, Christofides et al. 2009).

As a result, many SNS profiles still contain problematic health behavior content, reflecting substance use, violence, sexual activities, or other health risk behaviors. Moreno et al. (2009) found in their research among 270 adolescents that over half of the profiles (54%) contained such risk behavior information; 41% of all profiles contained alcohol references, 24% contained sexual behavior references, and 14% contained references to violence. Findings which are in line with previous research by Moreno et al. (2007), in which almost half of the profiles (47%) contained risk behavior information, and which are even exceeded by results from a later research by Moreno et al. (2010), who showed that over half of SNS profiles (56%) contain references to only alcohol use.

Health risk behavior on social network sites as valid reflections of reality

While many profiles contain health-risk behavior references, not much is known about whether these references offer valid reflections of reality.

In general, any person active on a SNS provides an edited presentation of him- or herself depending on the respective goal that he or she seeks to achieve (Rosenberg and Egbert 2011). Social network profiles present more or less reliable information about the profile owner. However, it is shown that persons cannot prevent their real identities to carry over to online interactions (Hargittai 2007), and that social network sites appear to be not only a relevant but also a valid means for communicating personality (Back et al. 2010, Gosling et al. 2007). Therefore, it may be expected that health-risk behavior displays on social network sites are more or less valid and are possibly predictive for associated offline health behavior.

A recent study by Moreno et al. (2011b) explored depression disclosure on Facebook, and showed that SNSs could be an innovative possibility for identifying students at risk for depression.

In another recent study Moreno et al. (2012) explored the associations between alcohol problem drinking references and intoxication references on Facebook and scores on the AUDIT problem drinking questionnaire. They found that students with Facebook profiles containing such alcohol references were more likely to be at risk for problem drinking.

The aim of the present study was to broaden the scope of previous findings, by further exploring whether SNS profiles provide a reliable snapshot of the profile owner's health behavior. From the healthcare perspective, the potential of SNSs as a screening tool for health behavior was explored. The present study was conducted in the Facebook environment, the most popular social network site both worldwide as in our research environment of Dutch students[1], and focused on a set of five health behavior topics, proven to be common problematic health behaviors in college student consumption and lifestyle patterns: alcohol use, illicit drug use, tobacco use, nutrition, and sports (Douglas 1997, American College Health Association 2006, 2009). For each of these health behavior topics this study aimed to explore the relationship between displayed references on student Facebook profiles and associated health behavior and implications.

Research Question (RQ): To what extent is the proportion of health behavior references on a Facebook profile a valid indicator of associated health behavior and implications?

To guide the answering of this research question five sub questions were posed. These sub questions were used to answer the research question for the five main health behavior topics in this research.

> *SubQ1: To what extent is the proportion of alcohol references on a Facebook profile a valid indicator of alcohol use and associated implications?*
>
> *SubQ2: To what extent is the proportion of tobacco references on a Facebook profile a valid indicator of tobacco use and associated implications?*
>
> *SubQ3: To what extent is the proportion of illicit drug references on a Facebook profile a valid indicator of illicit drug use and associated implications?*
>
> *SubQ4: To what extent do the proportions of health and unhealthy nutrition references on a Facebook profile are valid indicators of healthy and unhealthy nutrition frequency and associated implications?*
>
> *SubQ5: To what extent is the proportion of sports references on a Facebook profile a valid indicator of sports frequency and associated implications?*

1 According to http://www.ibianca.nl/feiten-en-cijfers-over-facebook-infographic/ and http://www.frankwatching.com/archive/2012/03/09/feiten-en-cijfers-over-facebook-infographic/ [Accessed 9 March 2012].

Exploring these questions could give insight in the health behavior screening potential of Facebook profiles, and as such could potentially aid healthcare providers and institutions in discovering health behavior trends in the college student environment, or in identifying students and subpopulations which may benefit from interventions to reduce short-term and long-term health behavior consequences.

Method

The study consisted of an online questionnaire on health behavior and health-risk behavior regarding alcohol use, illicit drug use, tobacco use, nutrition and sports, and a content analysis of Facebook profiles on the same health behavior aspects. Respondents were invited to complete the online questionnaire, including the providing of a link to their personal Facebook profile. Contents of these profiles were saved within two days after the questionnaire was completed, the content was coded with regard to several health behavior references and related to the questionnaire health behavior data.

Respondents

The research was conducted among college students, during the first three weeks of December 2011. By using the Facebook status updates function, the researchers' Facebook connections, of which approximately 160 met the criteria of being a student, were invited repeatedly over a period of three weeks time to participate in this research and to share this research invitation with others, so that the invitation reached more students. To stimulate connections to participate in the research a fully catered barbecue for four people would be raffled among all respondents. To address ethical concerns participants were told about the purposes of the survey and promised that obtained data and answers would be maintained confidentially and used only for this research (Moreno et al. 2011a). By conducting the survey among researchers' personal direct and indirect Facebook connections, problems regarding profile privacy settings were prevented.

A total of 88 respondents completed the questionnaire, of which 71 respondents met the requirements of being a student and providing a correct link to their Facebook profile.
The 71 respondents had a mean age of 21.3 years (range 17-27 years) and a slight majority of the sample was female (56%). All respondents were studying in the Netherlands, 70 respondents (99%) had a Dutch nationality and one respondent (1%) had a German nationality. The questionnaire and the survey invitations were formulated in Dutch.

Procedure Phase I: Questionnaire

The online questionnaire consisted of 55 items, including demographic items, items on five health behavior topics (alcohol, illicit drugs, tobacco, nutrition and sports), and additional items for assessing everyday health behavior implications. See Appendix A for an overview of the complete questionnaire scales and items, translated to English.

Alcohol

To assess alcohol use, three different questionnaire scales were used.

First, *Alcohol Quantity-Frequency* (*Alcohol Q-F*) was assessed, measuring the weekly average number of alcoholic drinks, based on four quantity and frequency items. This weekly average number of alcohol drinks was used to indicate *alcohol Q-F* and enabled the

assessment of alcohol problem use, according to the 14 (women) and 21 (men) glass limit for high risk alcohol behavior, stated by the British Medical Association (1995).

Second, *Alcohol Problem Drinking* was assessed, using the Alcohol Use Disorders Identification Test (AUDIT), developed by the World Health Organization (WHO). The AUDIT exists of ten items to assess frequency of engaging in, and suffering from hazardous and harmful drinking. The AUDIT scores can range from 0 to 40; a higher score means higher risk for problem drinking. Scores of 8 or higher indicate being at risk for problem drinking, and scores above 15 indicate high risk for problem drinking and alcohol dependency (Babor et al. 2001). The reliability of the scale was .78.

Finally, *Alcohol Risk Behavior* was assessed using four items, derived from previous research on alcohol risk behavior among adolescents and college students (Adams and Nagoshi 1999, Casey and Dollinger 2007, Moreno et al. 2012). These items included assessment of the frequency of drinking alone, driving intoxicated, drinking to induce intoxication, and participating in drinking games. Reliability analysis showed an overall reliability of .64 for these four items. Because a reliability of .71 was found when excluding the item 'driving intoxicated', this item was excluded from the *Alcohol Risk Behavior* scale.

Tobacco

Tobacco Quantity-Frequency (Tobacco Q-F) was assessed by the total number of cigarettes smoked during the last 30 days. This variable was based on a quantity and a frequency item, using predefined response formats, drawn from several established measures for adolescent tobacco use, including the National College Health Risk Behavior Survey (Douglas et al. 1997). The individual scores on those quantity and frequency items were averaged and by multiplying these scores the *Tobacco Q-F* variable was composed, indicating the total number of cigarettes smoked during the last 30 days.

Illicit drugs

To asses *Illicit Drugs Frequency*, participants were asked for the total number of times they used any kind of drugs during the last 30 days, using a predefined response format drawn from established measures for adolescent drug use, including the National College Health Risk Behavior Survey (Douglas et al. 1997).

Nutrition

Healthy Nutrition Frequency was assessed using five items asking for the average number of days a week that certain healthy nutrition guidelines were satisfied (taking two pieces of fruit, eating two ounces of vegetables, drinking 1½ liters of water, eating breakfast, eating whole-wheat products). These five items were based on guidelines stated by Dutch healthy nutrition institutions (Voedingscentrum 2011, Gezondheidsraad 2006). A total *Healthy Nutrition Frequency* score was measured by accumulating the scores on these five separate healthy nutrition items, resulting in possible scores from 0 to 35. The reliability score for the *Healthy Nutrition Frequency* items was .58.

Unhealthy Nutrition Frequency was assessed by five items, asking for the average number of days a week that certain unhealthy products or product categories were consumed (Candy or chocolate, coke or other sodas containing sugar, potato chips or other hearty snacks outside the main meals, fast-food meals or snacks, pie or cake). These items were based on unhealthy product categories used in the National College Health Risk Behavior Survey (Douglas et al. 1997). A total *Unhealthy Nutrition Frequency* score was measured by accumulating the scores on these five separate unhealthy nutrition items, resulting in possible scores from 0 to 35. The reliability score for the *Unhealthy Nutrition Frequency* items was .41.

Sports

To assess *Sports Frequency*, participants were asked for the total number of hours they normally participate in intensive physical activity on a weekly basis. This item was based on a predefined response format from previous research, including the National College Health Risk Behavior Survey (Douglas et al. 1997). Scores on this *Sports Frequency* item enabled the identification of exercise risk cases according to the Dutch Guidelines for Healthy Exercise, stated by Dutch universities and other government authorities (Wendel-Vos and Van Gool 2008).

Health implications

Ten additional measures were used to assess every day health implications, which are expected to be influenced by health behavior or health risk behavior. These items include the frequency of oversleeping, frequency of sickness days, average study figure, number of dental cavities at last dental check, frequency of appearance-related compliments, average hourly wage at the side job, work performance-related compliments by manager, work performance-related criticism by manager, getting a raise within the past year, and finally happiness was measured using the 5-item Satisfaction With Life Scale (Diener et al. 1985).

Procedure Phase II: Facebook profile content analysis

Analyzed profile content

From each participant the necessary profile content was recorded within two days after the questionnaire was completed.

First, from each participant Facebook profile up to 20 pictures were recorded and taken into content analysis. A limit number of 20 pictures was taken from each profile, mainly for time saving reasons: the number of pictures on a Facebook profile can reach several thousands, making it incredibly time consuming to take all available pictures into content analysis. Moreover, since previous research (Casey and Dollinger 2007) showed that behavior and personality traits can be predicted based on sets of 20 pictures, and since over 85% of all Facebook profiles are expected to contain 21 pictures or more (Bevan et al. 2011) the 20 pictures target was used. From profiles with less than 20 pictures, all pictures available were

recorded. From profiles containing over 20 pictures, out of each photo album an equal number of pictures was taken up to a total of 20 pictures, taking the first picture out the largest album, the second picture out the second largest album, until a total of 20 pictures was recorded. In this process the section with 'tagged pictures' was counted for one album as well. Using a random number generator the pictures were randomly drawn from each photo album. From each recorded picture, the picture title was recorded as well, later used as support for interpreting the picture.

Second, from each Facebook profile up to ten status updates were taken into content analysis. The ten most recent status updates, posted within the last six months, were drawn from each Facebook profile. From profiles with less than ten status updates within the last six months, as many status updates as available were recorded. The six months limit was used to avoid old habits and behavior reflected on those posts to have an influence on the research results. A status update target of ten was used, since we expected the majority of the profiles to contain at least ten status updates in the last six months.

Third, for each participant, all items shown on their profile 'info' page were recorded and taken into content analysis. These are items regarding different categories. The four most common categories are: employment and education, art and amusement, sports, and activities and interests. Items like educations, movies or brands can be added by the profile owner as personal favorites or personal interests to one of the mentioned categories on the profile info page.

There was decided not to include videos in this content analysis, since the coding of videos can be a time consuming process, and since only few Facebook profiles contain videos. From the 'wall' section of each Facebook profile only status updates were taken into content analysis. Displayed reactions on status updates were not taken into analysis because they are often numerous and are not expected to add information or value to the original status update in most cases. Finally, posts on the profile 'wall' of others were not used, since the majority of these posts are birthday congratulation, mainly without any health behavior references.

Instrument Phase II: Profile evaluation codebook

The new composed codebook consisted of three sections, parallel to the three main sections of a Facebook profile: a pictures section, a status updates section ('Wall' section), and an info page section. Content from each of these three sections was coded for displayed references associated with the five health behavior topics: alcohol, tobacco, illicit drugs, nutrition, and sports. The codebook was composed to enable the measurement of density scores which reflect the proportion of profile content associated with the particular behaviors.

The first codebook section was the section for analyzing pictures. Facebook pictures were analyzed using a comparable set of codes for each of the five health behavior topics, based on previous research by Casey and Dollinger (2007).

The second codebook section was the section for analyzing info page items. The four categories of this section from which items were taken into analysis are employment and education, art and amusement, sports, and activities and interests. Each item was analyzed on references for the five health behavior topics.

The third and last codebook section was the section for analyzing status updates. Each status update was analyzed on references to the five health behavior topics. See Appendix B for the complete Codebook.

Alcohol

The coding of alcohol references on pictures was done by coding for the consumption of alcohol (e.g., person holding a can of beer, mixed drinks on the table), the display of alcohol (e.g., a liquor cabinet showing different types of beer), the presence in an alcohol setting (e.g., a bar or festival), and alcohol advertisements (e.g., posters or clothing showing brand preference). The coding of alcohol references on info page items meant assessing each item as being an alcohol reference or not (e.g., 'Grolsch' as favorite brand item). For analyzing the status updates on alcohol references two codes were used, one for assessing direct alcohol references (e.g., participants mentioning their activity of drinking or their condition as a result of their drinking behavior), and one for assessing indirect alcohol references (e.g., going to a pub, or looking forward to going out with friends).

Tobacco

The coding of tobacco references on pictures was done by coding for the consumption of tobacco (e.g., person holding a cigarette), the display of tobacco (e.g., an ashtray or a pack of cigarettes on the table), and tobacco advertisements (e.g., posters or clothing showing brand preference). The coding of tobacco references on info page items meant assessing each item as being a tobacco reference or not. For analyzing the status updates for tobacco references one code was used to assess tobacco references (e.g., having a smoke or mentioning tobacco).

Illicit Drugs

The coding of drug references on pictures was done by coding for the consumption of illicit drugs (e.g., smoking a water-pipe or a joint), the display of illicit drugs (e.g., the display of joints or ecstasy pills), the presence in an illicit drugs setting (e.g., a coffee shop or a hardcore party), and illicit drug advertisements (e.g., posters or clothing showing or promoting drug use). The coding of illicit drug references on info page items meant assessing each item as being a drug reference or not. For analyzing the status updates for drug references two codes were used, one for assessing direct illicit drug references (e.g., participants mentioning their activity of taking drugs), and one for assessing indirect illicit drug references (e.g., going to a coffee shop).

Nutrition

The coding of nutrition references on pictures was done by coding for the consumption of healthy (e.g., drinking water) and unhealthy products (e.g., eating a hamburger), the display of healthy (e.g., a fruit basket on the table) and unhealthy products (e.g., empty soda bottles in the kitchen), the presence in an healthy (e.g., at a vegetable store) or unhealthy nutrition

setting (e.g., the Burger King or McDonalds), and healthy and unhealthy nutrition advertisements (e.g., posters or clothing showing or promoting healthy or unhealthy nutrition). The coding of nutrition references on info page items meant assessing each item as being a healthy nutrition reference, an unhealthy nutrition reference or neither. For analyzing the status updates for nutrition references one code was used to assess healthy nutrition references (e.g., eating an apple) and one to assess unhealthy nutrition references (e.g., eating ice cream).

Sports

The coding of sports references on pictures was done by coding for participating in sports (e.g., playing soccer or tennis), participating in moderate intensive exercise (e.g., traveling by bike or walking the stairs), the display of sport cues (e.g., a snowboard or tennis racket displayed), the presence in a sports setting (e.g., at a sports stadium or near a tennis court), and sports advertisements (e.g., posters or clothing showing sports or athletes). The coding of sports references on info page items meant assessing each item as being a sports reference or not. For analyzing the status updates for sports references one code was used to assess sports references (e.g., having a training or winning a match) and one to assess moderate intensive exercise references (e.g., participating in recreational swimming or recreational dancing).

Aversion to health behaviors

Complementary to the used codes mentioned above, items associated with aversion to the different health behavior topics were coded. For instance a status update like 'I hate sports' would be coded as a status update with aversion to sports.

Health behavior Density Scores

For each of the health behavior topics, based on the codes mentioned above, all items (pictures, status updates, info page items) were coded as no references to the particular behavior, with references to the particular behavior (when assigned to one of the codes mentioned above), or with aversion references to particular behavior. After this coding process, four density scores were created for each health behavior. First scores for the proportion of pictures, status updates and info page items with references to that particular health behavior were measured. For instance, for alcohol references on pictures a density score was created by taking the number of pictures with references to alcohol, reduce this by the number of pictures with aversion references to alcohol, and dividing the output by the total number of pictures analyzed from that profile, mostly 20. Additionally, for each health behavior an overall density score was created, measuring the proportion of all items (combining pictures, status updates and info page items) with references to that particular health behavior.

Doing this, for each Facebook profile the codebook generated four density scores for all five health behavior topics. A density score on pictures, a density score on info page items, a density score on status updates, and an overall density score combining items from all three Facebook sections.

Evaluation process

All decisions made in the process of coding pictures, status updates, and info page items (e.g., the display of an ashtray on a picture being coded as tobacco reference) were recorded for guiding the coding of later similar cases, and for the possibility to reflect, discuss and revise past decision making on certain codes or references, so that constancy and clarity of coding was maximized.

To estimate the validity and uniformity of the codes, 10 out of 71 Facebook profiles were evaluated by two coders. The Cohen's Kappa statistic was used to evaluate the agreement between the codes from the two coders, for a total of 177 pictures, 72 status updates, and 179 info page items.

In total, the codebook consists of eleven categories for which separate kappa statistics were measured. On ten of the categories the agreement of the coders was good to excellent and varied from .66 to 1.0. Only concerning the evaluation of the info page 'art and amusement' items a limited agreement of .38 occurred. Disagreement on several items was discussed, and the codebook statements regarding the including and excluding of specific activities or items were adjusted. See Appendix D for an overview of the kappa statistics.

Analysis

All statistical analyses were conducted using PASW Statistics 18.0. Demographic characteristics, survey results, and Facebook profile characteristics and recorded displays were summarized using descriptive statistics. To explore the extent to which displayed health behavior references on Facebook profiles are valid reflections of actual health behavior and health behavioral implications, correlation analyses were conducted between the Facebook health behavior reference results from the content analysis and the self-reported health behavior results from the questionnaire.

Combined Analysis I: Facebook data with Questionnaire Health Behavior data

First, for each health behavior, a Pearson correlation analysis was conducted between the four Facebook health behavior density scores and the questionnaire health behavior measures.

Second, for the multi-item scales used in this research Pearson correlation analyses were conducted on an individual scale item level between the profile health behavior density scores and specific health behavior questionnaire scale items.

On the alcohol topic, these additional analyses on a scale-item level were conducted for the *alcohol problem drinking* scale (AUDIT) and *alcohol risk behavior* scale to gain deeper inside in the relation between alcohol references on Facebook and self-reported alcohol use.

On the nutrition topic, these additional analyses on a scale-item level were conducted for the five individual *healthy nutrition frequency* items and the five *unhealthy nutrition frequency* items. Although the individual items of which these scales consist are established questionnaire items for assessing healthy and unhealthy nutrition intake frequency, the questionnaire items for both healthy and unhealthy nutrition patterns showed poor reliability

(see table 1). Therefore using only the accumulated healthy and unhealthy nutrition scores could possibly hide linear relationships between individual nutrition questionnaire items and the associated healthy and unhealthy nutrition density scores derived from the Facebook content analysis. This was explored by repeating correlation analyses on a scale-item level for the ten individual nutrition questionnaire items.

Combined analysis II: Facebook data with Questionnaire Health Behavior Implications

Finally correlation analyses were conducted between (1) the questionnaire health behavior measures and the ten questionnaire everyday health implication measures, and (2) between the Facebook overall health behavior density scores for the five health behavior topics and the ten questionnaire everyday health implication measures. While our first analyses explored the relation between displayed health behavior on Facebook and associated self-reported health behavior, these analyses should give additional insight in the relation between the questionnaire health behavior, the displayed health behavior on Facebook and common associated health behavior consequences and implications. As discussed earlier, many studies have shown the possible positive and negative consequences of health behavior and health-risk behavior, encountered in everyday living. For instance, drinking alcohol should have a negative influence on work and study achievements, and participating in sports should have a positive influence on the number of sickness days each year. A set of ten such everyday implications was used to explore whether health behavior references can be related to such health behavior implications.

Results

General Results

Phase I: Questionnaire health behavior and implications

Overall, 25% of the students reported exceeding the 14 and 21 weekly alcoholic drinks limit. On the *alcohol problem drinking* scale (AUDIT) 75% of the students scored 8 or higher, indicating to be at risk for problem drinking. 13% of participants scored 16 or higher on this scale, indicating high risk for alcohol problems and alcohol dependency. Also 81% of students reported participating in at least one of four alcoholic risk behaviors during the last 30 days. Overall, 20% of the participants reported smoking at least one cigarette during the past 30 days, 20% of participants reported illicit drug use in the last 30 days, and 26% of the participants did not satisfy the healthy exercise guidelines (See Table 1).

Table 1. Participants' questionnaire health behavior characteristics.

	Mean Score	SD	Risk Scores	Risk Cases	Cronbach's alpha
Alcohol					
Quantity-Frequency	13.23	11.14	>14 (F) >21 (M)	25.4% (*n* = 18)	X
Problem drinking	10.68	5.03	>7	74.6% (*n* = 53)	.78
Risk behavior	2.10	2.41	>0	81.4% (*n* = 58)	.71
Tobacco					
Quantity-Frequency	17.31	67.07	>0	19.7% (*n* = 14)	X
Drugs					
Frequency	1.23	0.513	>0	19.7% (*n* = 14)	X
Nutrition					
Healthy Nutrition Frequency	25.65	5.06	Low Scores	X	.58
Unhealthy Nutrition Frequency	13.11	4.49	High Scores	X	.41
Sports					
Frequency	5.61	2.03	<5	25.4% (*n* = 18)	X

Sample results on the ten additional health implication measures are shown in table 2. An oversleeping average of almost 4 times a year was reported, and a sickness average of more than 3 days a year was suggested by the questionnaire results. An average study grade of 6.86 was reported by the participants, and an average hourly wage of 8.47 Euros was reported.

Also, 90% of the participants reported having a paid side job. They reported higher work-related compliments frequency than work-related criticism, and 13% of the participants got a raise during the last year as a result of their working achievements.

Table 2. Characteristics of Participants' questionnaire everyday health behavior implications.

	Mean	SD	Cronbach's alpha
Oversleeping frequency Times last year	3.90	7.28	X
Sickness frequency Days last year	3.41	3.89	X
Average study grade 1-10	6.86	0.82	X
Number of dental cavities at last check Open	0.34	1.03	X
Appearance-related compliments Frequency 5 item response format, see Appendix A	2.94	0.78	X
Having a side job? Yes / No	90% *(n = 64)*		X
Average hourly wage at side job Euros	8.47	2.83	X
Work-related compliments by manager Times last year	8.63	6.41	X
Work-related criticism by manager Times last year	2.30	3.91	X
Getting a raise? Yes / No	13% *(n = 13)*		X
Satisfaction With Life Scale 5-item scale, 5-35	26.13	4.33	.77

Phase II: Facebook profile content analysis

From the 71 Facebook profiles a total of 1275 pictures, 1148 info page items, and 505 status updates were taken into content analysis. Overall, 785 content items contained alcohol references, 41 items contained tobacco references, 12 items contained drug references, 152 items contained healthy or unhealthy nutrition references, and 402 items contained sports references.

Table 3. Characteristics of participants' Facebook health behavior references and health behavior density scores.

	Pictures Density			Info Page Items Density			Status Updates Density			Overall Density		
	Total 1275 Pictures			Total 1148 Info P. Items			Total 505 Status Updates			Total 2928 Facebook Items		
	Mean	**SD**	**N Ref**	**Mean**	**SD**	**N Ref**	**Mean**	**SD**	**N Ref**	**Mean**	**SD**	**N Ref**
Alcohol	0.467	0.190	602	0.084	0.127	90	0.190	0.210	93	0.281	0.141	785
Tobacco	0.032	0.053	40	0.000	0.000	0	0.002	0.016	1	0.015	0.025	41
Drugs	0.004	0.018	6	0.004	0.016	5	0.002	0.013	1	0.004	0.012	12
Nutrition												
Healthy nutrition	0.039	0.050	54	0.003	0.021	3	0.007	0.026	4	0.023	0.032	61
Unhealthy nutrition	0.057	0.062	75	0.006	0.024	8	0.013	0.038	8	0.033	0.033	91
Sports	0.121	0.141	163	0.173	0.185	174	0.123	0.196	65	0.147	0.128	402

See table 3 for the number of displayed references and density scores characteristics for each of the five health behaviors on each of the three profile sections.

Of the Facebook profiles coded, 99% (n = 70) contained alcohol references, 39% (n = 29) contained tobacco references, 10% (n = 7) contained drug references, 52% (n = 37) contained healthy nutrition references, 65% (n = 46) contained unhealthy nutrition references, and 89% (n = 63) contained sports references.

Combined Results I: Facebook data with Questionnaire Health Behavior data

First, for each health behavior a Pearson correlation analysis was conducted between the four Facebook health behavior reference density scores from the content analysis (Density Scores on Pictures, Info Page Items, Status Updates and an Overall Density Score) and the health behavior measures from the questionnaire. The results are shown in table 4.

Table 4. Correlations between the questionnaire health behavior measures and the four matching Facebook density scores.

	Picture Density	Info Items Density	Status Upd. Density	Overall Density
Alcohol				
Frequency	.112	**.282***	**.268***	.100
Problem Drinking	.118	.214	.216	.145
Risk Behavior	.129	.050	**.285***	.133
Tobacco				
Frequency	**.594****	X***	-.006	**564****
Drugs				
Frequency	.125	.112	.178	.190
Nutrition				
Healthy nutrition frequency	-.048	.000	-.059	-.070
Unhealthy nutrition frequency	.066	-.096	-.067	-.034
Sports				
Frequency	**.438****	**.379****	**.413****	**.566****

N varied between 63 and 71

**: Significant Correlation ($p < 0.05$)*

***: Significant Correlation ($p < 0.01$)*

****: No references available for this health behavior in this Facebook section.*

Second, for the multi-item scales used in this research Pearson correlation analyses were conducted between the profile health behavior density scores and the individual health behavior scale items from the questionnaire.

Alcohol

A Pearson correlation analysis between the four Facebook alcohol density scores from the content analysis and the three alcohol measures from the questionnaire showed significant correlations between the questionnaire alcohol Q-F scores and both the info page items alcohol density scores (r = .28; p = .02), and the status updates alcohol density scores (r = .27; p = .03). Significant correlations were found neither between the pictures alcohol density

scores and questionnaire alcohol Q-F scores, nor between the overall alcohol density scores and alcohol Q-F scores.

None of the alcohol density scores derived from the Facebook profiles showed significant correlations with the questionnaire alcohol problem drinking scores, although correlations for status updates density scores (p = .09) and info page items density scores (p = .07) approached significance.

Significant correlations were found between the status updates alcohol density scores and questionnaire alcohol risk behavior scores (r = .29; p = .02). No significant correlations were found between the pictures alcohol density scores or info page items alcohol density scores and alcohol risk behavior scores.

Table 5. Pearson Correlations between the Alcohol Problem Drinking questionnaire items and the four alcohol density scores.

	Alcohol Freq.	Binge Drinking Freq.	Unable to stop drinking once started Freq.	Failed to do what was expected as result of drinking Freq.	Needed a drink in the morning Freq.	Feeling of guilt/ remorse after drinking Freq.	Unable to remember what happened the night before Freq.	someone else been injured as a result of your drinking Freq.	Friend or doctor being concerned about drinking Freq.	Number of drinks on typically drinking day
AD Pictures	.137	**.245***	-.105	.014	.022	-.075	.098	.020	-.053	**.262***
AD Info Page Items	.068	.125	.146	-.007	**.347****	-.012	.210	.035	**.259***	**.261***
AD Status Updates	.200	**.378****	-.093	.119	.183	.005	.176	.009	-.066	**.339****
AD Overall	.108	.203	-.037	.051	.074	-.067	.116	-.005	-.008	**.334****

N varied between 64 and 71

**: Significant Correlation (p < 0.05)*

***: Significant Correlation (p < 0.01)*

These Pearson correlation analyses were repeated on a scale-item level for the 10-item alcohol problem drinking scale and the 4-item alcohol risk behavior scale (see table 5) from the questionnaire.

As shown in table 5, for two of the ten individual alcohol problem drinking items significant correlations were found with at least two of the four alcohol reference density scores from the content analysis (pictures, status updates, info page items, overall). Significant correlations were found between the *binge drinking frequency* item and both the alcohol density scores in status updates (r = .38; p < .01) and the alcohol density scores on pictures (r = .25; p = .04). For the *average number of drinks on a drinking day* item, significant correlations were found with all four the alcohol density scores: the alcohol density scores on pictures (r = .26; p = .03), on status updates (r = .34; p < .01), on info page items (r = .26; p = .03), and the overall alcohol density scores (r = .33; p < .01). Furthermore, for the alcohol density scores on info page items significant correlations were found with both the *needed a drink in the morning* item (r = .35; p < .01), and the *friend or doctor being concerned about drinking* item (r = .26; p = .03).

Table 6. Pearson Correlations between the Alcohol Risk Behavior questionnaire items and the Alcohol Density Scores

	Drinking Alone Freq.	Drinking Game Freq.	Drinking to get drunk Freq.	Dinking and driving Freq.
AD Pictures	-.056	.177	.121	-.028
AD Info Page Items	**.279***	.219	.186	.091
AD Status Updates	.140	**.269***	.236	.192
AD Overall	-.060	.200	.071	-.065

N varied between 64 and 71
**: Significant Correlation ($p < 0.05$)*
***: Significant Correlation ($p < 0.01$)*

As shown in table 6, none of the alcohol density scores derived from content analysis had significant correlations with the *drinking and driving* item or with the *drinking to induce intoxication* item. The *drinking alone* item however, correlated significantly with the alcohol density scores on info page items ($r = .28$; $p = .02$), and the *drinking game* item correlated significantly with alcohol density scores on status updates ($r = .27$; $p = .03$).

Tobacco

The Pearson correlation analysis showed significant correlations between the tobacco density scores on pictures and the questionnaire tobacco Q-F scores ($r = .59$; $p < .01$). Also significant correlations were found between the overall tobacco density scores and the tobacco Q-F scores ($r = .56$; $p < .01$). Significant correlations were found neither between the status updates tobacco density scores and tobacco Q-F scores, nor between the info page items tobacco density scores and tobacco Q-F scores. As shown in table 3, no tobacco references were found among the info page items from the analyzed Facebook profiles, and only one reference to tobacco use was encountered in the analyzed status updates.

Illicit Drugs

The Pearson correlation analysis showed no significant correlations between any of the illicit drugs density scores derived from the Facebook content analysis and the illicit drugs frequency measures form the questionnaire.

Nutrition

A Pearson correlation analysis between the four Facebook healthy nutrition density scores from the content analysis and the healthy nutrition frequency measure from the questionnaire showed no significant correlations. Also, none of the four unhealthy nutrition density scores showed significant correlations with the questionnaire unhealthy nutrition frequency measures.

These Pearson correlation analyses were repeated on a scale-item level for the ten individual healthy and unhealthy nutrition frequency items. First, a Pearson correlation analysis between the four healthy nutrition density scores derived from the Facebook content analysis and the five individual healthy nutrition frequency items showed a significant

negative correlation between the *vegetable frequency* item and the overall healthy nutrition density (r = -.24; p = .05). No other significant correlations were found between the healthy nutrition density scores derived from the Facebook profiles content analysis and the individual healthy nutrition frequency items from the questionnaire.

Second, a Pearson correlation analysis was conducted between the four unhealthy nutrition density scores and the five individual unhealthy nutrition frequency items. None of the unhealthy nutrition density scores derived from the Facebook profiles content analysis correlated significantly with the individual unhealthy nutrition frequency items from the questionnaire.

Sports

The Pearson correlation analysis showed significant correlations between the pictures sports density scores derived from the Facebook content analysis and the questionnaire sports frequency scores (r = .44; p < .01), between the info page items sports density scores and sports frequency scores (r = .38; p < .01), between the status updates sports density scores and sports frequency scores (r = .41; p < .01), and between the overall sports density scores and sports frequency scores (r = .57; p < .01).

Combined Results II: Health Implications Correlations

First, a Pearson correlation analysis was conducted between the questionnaire health behavior measures and the ten questionnaire health implications. The results are shown in table 7.

Table 7. Pearson Correlations between the questionnaire health implications items and the Facebook overall density scores for the five health behavior topics.

	Oversleeping Freq.	Sickness Freq.	Average study grade	number of dental cavities at last dental check	Appearance-related compliments Freq.	Average hourly wage at side job	Work related Compliments by manager Freq.	Work-related criticism by manager Freq.	Getting a raise? Y/N	Satisfaction with life scores
Alcohol										
Frequency	.075	**-.263***	-.118	-.172	.042	**.**162	**.306****	.153	**-.289***	.063
Problem Drinking	.075	**-.246***	-.061	-.200	.008	.140	**.245***	.204	**-.287***	.123
Risk Behavior	.121	.010	.110	.105	.082	.062	.187	.061	-.133	.026
Tobacco										
Frequency	.015	.077	.131	-.047	.097	-.016	.184	-.013	.037	-.119
Drugs										
Frequency	-.067	-.169	.091	-.120	-.220	.135	.027	.039	.033	-.013
Nutrition										
Healthy Nutrition Freq.	-.081	.094	.-.017	.067	.092	.009	-.164	.080	-.027	.196
Unhealthy Nutrition Freq.	.077	.073	-.089	.001	.087	.188	.185	.020	-.030	-.028
Sports										
Frequency	.040	.051	-.036	-.168	.022	.182	.162	.063	-.111	.022

N varied between 63 and 71
**: Significant Correlation (p < 0.05)*
***: Significant Correlation (p < 0.01)*

The results show no significant relations between the tobacco, drugs, nutrition, and sport measures from the questionnaire and any of the ten every day health behavior implications.

For the questionnaire alcohol measures however, some significant correlations were found with those additional health measures. The alcohol frequency measure showed significant negative correlations with the *sickness frequency* item (r = -.26; p < .03) and *getting a raise* item (r = -.29; p < .02), and significant positive relations with the *work related compliments* item (r = .31; p < .01). Furthermore the alcohol problem drinking measure showed significant negative correlations with the *sickness frequency* item (r = -.25; p < .04) and *getting a raise* item (r = -.29; p < .02), and significant positive relations with the *work related compliments* item (r = .25; p < .05).

Second, a Pearson correlation analysis was conducted between the five Facebook overall health behavior density scores and the ten questionnaire everyday health implications items. The results are shown in table .

Table 8. Pearson Correlations between the questionnaire health implications items and the Facebook overall density scores for the five health behavior topics.

	Oversleeping Freq.	Sickness Freq.	Average study grade	number of dental cavities at last dental check	Appearance-related compliments Freq.	Average hourly wage at side job	Work-related Compliments by manager Freq.	Work-related criticism by manager Freq.	Getting a raise? Y/N	Satisfaction with life scores
Alcohol	-.028	.067	-.207	-.127	.054	**-.564****	-.186	.107	.157	-.015
Tobacco	.010	.190	-.005	-.119	.091	-.221	.150	.006	.176	.024
Drugs	-.030	-.010	-.082	-.078	-.122	-.023	.005	-.022	.007	**.271***
Nutrition										
Healthy Nutrition	.230	.113	.009	-.110	.141	.078	.034	.048	.074	.122
Unhealthy Nutrition	.122	.014	-.068	-.016	.094	**-.268***	.159	.233	.064	-.085
Sports	-.049	**-.281***	-.111	**-.267***	-.088	**.251***	.176	.012	-.075	.134

N varied between 63 and 71

**: Significant Correlation (p < 0.05)*

***: Significant Correlation (p < 0.01)*

A significant negative correlation was found between the *overall alcohol density scores* and the *average hourly wage at the side job* item (r = -.56; p < .01). No significant correlations were found between the overall tobacco density scores and the ten health implication items. For the *overall drugs density scores* a significant positive correlation was found with the *satisfaction with life scores* (r = .27; p = .02). A significant negative correlation was found between the *overall unhealthy nutrition density scores* and the *average hourly wage at side job* item (r = -.27; p = 0.4). For the *overall sports density scores* significant negative correlations were found with *sickness frequency scores* (r = -.28; p = .02), and the *dental cavities scores* (r = -.27; p = .03), and a positive correlation was found with the *average hourly wage at side job scores* (r = .25; p = .05).

Discussion

The college student population is known for abundant and reckless lifestyles, characterized by bad exercising and nutrition habits, and excessive alcohol and other substance use. From the healthcare perspective, this study aimed at exploring the potential of Social Network Sites as a health behavior screening tool, by exploring the relationship between displayed references on student Facebook profiles and associated health behavior.

RQ: To what extent is the proportion of health behavior references on a Facebook profile a valid indicator of associated health behavior and implications?

The present study focused on a set of five health behaviors, proven to be common problematic health behaviors in college student consumption and lifestyle patterns: alcohol use, illicit drug use, tobacco use, nutrition, and sports (Douglas 1997, American College Health Association 2006, 2009). Students Facebook profiles were taken into content analysis on references to these health behaviors and health risk behaviors and the findings were related to questionnaire results on alcohol use, drug use, tobacco use, nutrition patterns, sports behavior, and a set of ten additional health related implications.

Student sample health status and online health disclosure

As can be expected in a college student environment, the questionnaire results showed a high number of risk behavior across the five health behavior topics. As shown, 75% (!) of the student respondents reported problematic scores on the Alcohol Problem Drinking scale, and 81% (!) of all respondents participated in alcohol risk behavior during the last 30 days. Furthermore, 20% of the participants reported smoking at least one cigarette during the past 30 days, 20% of participants reported illicit drug use in the last 30 days, and 26% of the respondents did not satisfy the healthy exercise guidelines. On the questionnaire additional health implication items the sample didn't report any excessive averages. However, remarkable relations were found between those health implication items and associated self-reported health behavior in the questionnaire. On the tobacco, illicit drugs, nutrition and sports topic no relations were found, while these additional health implications are expected to be influenced by these health behaviors questioned. Furthermore, on the alcohol topic significant relations were found opposite to the expected direction. For instance, higher alcohol use frequency was related to less sickness days. These results suggest that more alcohol use, more tobacco use, more sports participation, higher healthy or unhealthy nutrition frequency, and more illicit drug use was not related to health behavior implications as expected based on the general history of health behavior research.

In this study we tried to find a reflection of the questionnaire results on the students Facebook profiles for each of the five health behavior topics. We found 99% of the Facebook profiles containing references to alcohol use, which exceeds findings from previous studies by Moreno et al. (2007, 2009, 2010). Also 89% of the profiles contained sports references, but less references were found for tobacco and drug use. The high presence of alcohol and sports

references on Facebook profiles could be linked to the proved social nature of sports and alcohol activities (Casey and Dollinger 2007, Keresztes et al 2008). Facebook seems the means to communicate and share those 'social' drinking and sports activities. Tobacco references were encountered only on pictures and not on other Facebook content, and a total of only twelve references to illicit drug use was found on all 2928 items analyzed in this study.

Alcohol

SubQ1: To what extent is the proportion of alcohol references on a Facebook profile a valid indicator of alcohol use and associated implications?

The results of the present study showed a somewhat ambiguous relationship between alcohol references on Facebook profiles and the three self-reported alcohol use measures. The findings suggest that certain sections of a Facebook profile can be used as indicator for certain measures of alcohol use, while other sections cannot, as such being partly in line with previous research by Moreno et al. (2012), who found a relationship between problem drinking and intoxication references on Facebook. The findings of the present research indicate that alcohol references in status updates can be a valid means for indicating alcohol frequency (the weekly total number of drinks) and the participation in alcohol risk behaviors, but cannot be used for indicating alcohol problem drinking. The findings also suggest that alcohol references on info page items can be a valid means for indicating alcohol frequency, but cannot be used for indicating participation in alcohol risk behavior and alcohol problem drinking. The findings do not provide evidence for alcohol references on pictures as a means for indicating any of the three self-reported alcohol use measures.

Additional analyses showed that certain items from the Alcohol Problem Drinking scale (AUDIT) show better linear relations with alcohol references on Facebook than others. The results suggest that while the proportions of alcohol references on pictures and status updates are valid indicators for alcohol quantity and frequency issues such as binge drinking and the number of drinks on a typically drinking day, alcohol references on info page items are valid indicators for more serious alcohol dependency phenomena, such as the need for drinks in the morning, worries from friends or doctors about your alcohol use pattern, and drinking alone. This indicates that alcohol references on info page items, such as showing 'drinking beer' as a favorite activity, or 'Heineken' as favorite brand, can be cues for serious alcohol dependency development, which can be an interesting perspective for future research.

Finally, an interesting finding was the proportion of alcohol references on a Facebook profile was suggested to be a strong indicator of lower hourly wages at a side job, as such not only indicating a relationship between alcohol references on Facebook and alcohol behavior, but also with some behavior related implications. However, no such relation was found between questionnaire self-reported alcohol use and the hourly wage at side job item. Moreover, while you should expect a higher sickness frequency for more frequent drinkers, and a higher work-related compliments frequency, opposite relations were found. Findings not reflected on the Facebook profiles. These ambiguous results suggest that frequent drinking is not related to negative everyday implications, but that the proportion of alcohol references

on a Facebook profile is. Future research could be useful to get further insight in such relationship.

As shown, not all types of Facebook alcohol references showed straightforward linear relationship with self-reported alcohol use and implications. These ambiguous results on the alcohol topic can possibly be caused by the high risk alcohol sample we happened to deal with. Due to the fact that the majority of the sample turned out to be at risk for problem drinking, and the fact that all these 'problem cases' show a high volume of alcohol references on their Facebook profile, it is possible that some kind of ceiling effect occurred, whereby the alcohol density scores on Facebook profiles reached a limit at some point, and as a results did not represent the variance in the problematic self-reported alcohol use scores.

Despite the fact that these results give some accurate direction and focus for the screening of college students Facebook profiles on alcohol use, future research is recommended on this topic. Perhaps a more balanced alcohol use sample could tell more about the difference between the high alcohol density profiles and the low alcohol density profiles, which we lacked in this research. Also, future research would be interesting to identify specific individual Facebook items which are predictors of problematic alcohol use or alcohol dependency development. Finally, the relation between alcohol references on Facebook profiles and associated everyday implications needs future research.

Tobacco

SubQ2: To what extent is the proportion of tobacco references on a Facebook profile a valid indicator of tobacco use and associated implications?

The findings of the present study show a clear linear relationship between both direct and indirect tobacco references on Facebook pictures and self-reported tobacco use. As such the present research suggests that the proportion of tobacco references on Facebook pictures can be a valid indicator for tobacco use quantity and frequency. Due to a lack of tobacco references on status updates and info page items these Facebook sections are not proven useful in the screening for tobacco use.

Although tobacco use is often related to a series of health implications, this research did not provide evidence for Facebook as predictor for such implications. Moreover, the questionnaire results did not show a relation between tobacco use and associated health behavior implications either. Possibly the implications used in this research are not the one influenced by tobacco use.

Based on these findings the screening for the proportion of Facebook pictures with direct or indirect tobacco references can be a valid way to get insight in the profile owner's tobacco use. Facebook pictures showing ashtrays, cigarettes, lighters, or other tobacco references could be valid indicators of the profile owner's tobacco use frequency.

Illicit Drugs

SubQ3: To what extent is the proportion of illicit drug references on a Facebook profile a valid indicator of illicit drug use and associated implications?

No relation was found between illicit drug references on Facebook and self-reported drug use, suggesting that those drug references cannot be used as a means for indicating drug use frequency. These results are possibly caused by the limited number of drug references found on Facebook profiles. In total, only twelve references to illicit drug use were found, making the occurrence of a linear relationship between alcohol references on Facebook and self-reported alcohol use unlikely. However, one remarkable and questionable finding was the positive linear relationship between drug references on Facebook profiles and scores on the satisfaction with life scale (SWLS), suggesting people with drug references on their Facebook profile to be more satisfied with their lives. However, while SWLS was related to drug references on Facebook, it wasn't related to self-reported illicit drug use from the questionnaire. Future research on this relation is recommended to further explore this relationship.

Furthermore, future research is recommended to explore the validity of illicit drug references on Facebook by using a bigger sample, or by looking further than only straightforward linear relationships between illicit drug references on Facebook and self-reported drug use.

Nutrition

SubQ4: To what extent do the proportions of health and unhealthy nutrition references on a Facebook profile are valid indicators of healthy and unhealthy nutrition frequency and associated implications?

In this study no relation was found between healthy and unhealthy nutrition references on Facebook and self-reported healthy and unhealthy nutrition frequency, suggesting that those nutrition references cannot be used as a means for indicating self-reported nutrition patterns.

The poor reliability of the healthy and unhealthy nutrition frequency scales motivated the in-depth analyses on a scale-item level. However, none of the individual items from both scales showed positive linear relationships with the number of healthy and unhealthy nutrition references on Facebook. Nevertheless, there were some findings worth mentioning. One remarkable finding was the negative relationship between the proportion of healthy nutrition references on Facebook and the frequency of eating enough vegetables. And second, the results showed that the proportion of unhealthy nutrition references on a Facebook profile was positively related with the hourly wage at a side job. However, while hourly wage at the side job was negatively related to unhealthy nutrition references on Facebook, it wasn't related to self-reported unhealthy nutrition frequency from the questionnaire.

In sum, this research suggests that healthy and unhealthy nutrition Facebook references cannot be used as a means for indicating healthy and unhealthy nutrition frequency and

associated implications, since the few relationships found were in the unexpected direction, and were not supported by any other findings in this research.

Sports

SubQ5: To what extent is the proportion of sports references on a Facebook profile a valid indicator of sports frequency and associated implications?

The findings of the present study show clear linear relationships between the proportions of sports references on a Facebook profile and self-reported sports frequency. As such the present research suggests that the proportion of sports references on a Facebook profile can be a valid indicator for sports frequency.
Moreover, the proportion of sports references on a Facebook profile seems to be a valid predictor of several health behavior implications. The results suggest that higher proportions of sports references on Facebook profiles are indicators for lower number of dental cavities and sickness days, and for higher hourly wages at a side job. As such, the number of sports references on Facebook is not only related to the profile owner's sports behavior, but also to several behavior related implications. However, while these results show a convincing relation between sports references on Facebook and associated implications, no such relation was found between self-reported sports behavior and those implications. This suggests that sports references on Facebook are better predictors of associated everyday implications than self-reported sports frequency. Future research on this relation should be conducted to further explore these findings.

Research Question

To what extent is the proportion of health behavior references on a Facebook profile a valid indicator of associated health behavior and implications?

The results do suggest that the proportion of tobacco references is a good indicator of the profile owner's tobacco use, and that the proportion of sports references is a good indicator the profile owner's sports frequency. Also, evidence was provided for the proportion of alcohol references on pictures and status updates as valid indicators of alcohol use frequency and quantity. Moreover, the proportion of alcohol references on info page items seems to be indicators for more serious alcohol dependency phenomena. However, no predictive relationship was found between the proportion of displayed illicit drugs references, and healthy or unhealthy nutrition references with associated behavior and implications. In sum, this research suggests that references to sports, tobacco and partially alcohol are valid means for indicating associated health behavior. For displayed references to drugs and nutrition however, no such validity was suggested.

On the sports and partially on the alcohol topic, the results suggest Facebook health behavior references also to be indicators of everyday health behavior implications, despite the lack of such relationship between self-reported alcohol and sports frequency and those everyday health behavior implications. You would expect some existing relations within your

sample between the health behavior and associated implications, and you would expect Facebook profiles to be an indicator for not only these behaviors, but maybe also for these related implications. However, first of all the expected relation between the behavior and associated implications wasn't found among our sample, for any of the topics. And second, on the alcohol and sports topic, the Facebook references were related to the associated implications, while no such relation was found based on the questionnaire results. On the one hand these findings could indicate a poor reliability of questionnaire items to these behaviors, but on the other hand these findings suggest Facebook references to these behaviors to be better indicators of associated health behavior implications than questionnaire self-reported health behavior measures. Future exploration on these findings is needed.

Implications

Healthcare perspective

One consideration for the implications of this study is the use of Facebook profiles by medical personnel and healthcare institutions. For the sports, tobacco, and alcohol topic the results provide support for Facebook as a screening tool for associated behavior and implications. For the illicit drugs and nutrition topic however, no such use was supported by this study.

With regards to the sports, tobacco, and alcohol topics, the results of this research provide evidence for the use of evaluating Facebook profiles as a means for (1) identifying students and subpopulations which may benefit from interventions on health-risk behaviors to reduce short-term and long-term health consequences, and for (2) identifying overall trends in the development of the health behavior risks, problems, and consequences in the college student environment. According to the results, the lacking of sports references on a Facebook profile can be a strong indicator for the lack of sports behavior by that person. Also, high numbers of both direct and indirect tobacco references on a Facebook profile makes it more likely the profile owner is a frequent smoker. Finally, although further research on this topic is recommended, according to the present results high proportions of alcohol references on Facebook pictures and status updates can indicate high alcohol use frequency and quantity. Moreover, high proportions of alcohol references on the info page items can be an indicator of more serious alcohol dependency phenomena and implications.

Along with the screening possibility of Facebook comes an innovative intervention possibility; the use of Facebook as a means for targeting those Facebook profiles displaying alarming content. Using innovative targeted messaging based on the displayed content on a Facebook profile, targeted intervention messages can be distributed among profiles containing certain content like words or picture characteristics, regardless of privacy settings. Such intervention techniques can be used to approach students and subpopulations which, based on their Facebook profiles, may benefit from interventions on health-risk behaviors to reduce short-term and long-term health consequences

Other perspectives

Not only medical personnel can reap the benefits of our findings. From a marketing perspective the screening intervention method can be used as a means for targeting clients and creating product or brand awareness among the desired populations. For instance, the results of this study suggest that sports brands can use sports references to target the desired Facebook 'sports' population.

Finally, from the employee recruitment perspective, these results are a next step in exploring the validity of health behavior references on Facebook, which are used by recruiters as fast selecting and dismissing criteria, and used to create an image of the job candidate. Also for other people Facebook is an easy way to keep an eye on, or spy on someone. The findings of this research provide support for the reliability of those spying activities when it concerns sports, tobacco and alcohol references. For instance, whether it concerns a parent who suspects their daughter from smoking, or a recruiter who disapproves smoking, the proportion of smoking references on their subjects Facebook profile pictures could be used to get a fairly reliable image of the subjects smoking behavior.

Limitations

Our study has several limitations that warrant mention. First the sample size of this study was rather small. Although the simple size proved to be large enough to reflect linear relationships between Facebook references and health behavior, replication of the study with a larger sample is recommended.

Furthermore, our study differed from previous research on health risk behavior in that not only publicly available profiles were examined. However, this was only possible when conducting the research among our personal Facebook connections. By conducting the survey among our personal direct and indirect Facebook connections, problems regarding profile privacy settings were prevented. Since the survey was conducted in one personal environment, it can be questioned if the results can be generalized to other student populations.

This research had explorative intentions and therefore analyzed for direct linear relationships between the proportions of Facebook health behavior references and self-reported health behavior frequencies. In the coding process, Facebook health behavior references were quantified in determining the proportion of references to that health behavior, the density scores. On the alcohol topic for instance, a picture showing one glass of beer and a picture showing 20 glasses of beer would both count as one alcohol reference. At the one hand this could result in losing some health behavior information in the Facebook profile coding process, but on the other hand quantifying the Facebook profiles is needed, and cannot be done without losing some information or nuances.

From each participant only 20 pictures were taken into content analysis for several reasons. As a result, for many participants we did not include al Facebook pictures in this research. Some profiles even contained several thousands of pictures, of which only 20 were used. By selecting pictures from different albums and selecting both own pictures and tagged

pictures for the content analysis, we tried to get a picture selection which would reflected the overall variety of pictures on the profile.

In this research both pictures uploaded by the profile owner and pictures on which the profile owner is tagged by other Facebook users were taken into this research. By doing this we aimed to get a picture selection which would reflect the overall variety of pictures on the profile as much as possible. However, since tagged pictures are presented on your profile because another Facebook user linked you to that picture (tagging), the content and origin of those pictures could differ from those posted by the profile owner. This could be especially the case when it concerns inappropriate or sensitive content like drinking alcohol. It could be questioned whether there is a difference in the validity and predictive value between those 'own' pictures or tagged pictures. Despite these considerations, no difference was made between these types of pictures in this research. Therefore, this could be interesting to explore in future research.

This research was conducted in the Facebook environment. It can be questioned whether our findings can be generalized to other social network sites as well, since they all have their own target groups and functionalities.

Other limitations derive from the used questionnaires to assess health behavior on the five health behavior topics. First, when using self-reported behavior to assess the validity of behavior references you make the assumption that the self-reported behavior is a valid reflection of the actual behavior. This assumption can be questioned for the present study since the questionnaire asks for sensitive information about one's health behavior. Furthermore, respondents had to provide an URL to their Facebook profile webpage, so questionnaires were not conducted anonymously, which could possibly prejudice honesty and validity of self-reported health behavior. Previous studies have shown for instance that girls are likely to underreport their weights by an average of 1 to 2 kg, and that underreporting is more common among heavier respondents (Spencer et al. 2002). Although underreporting of certain behaviors seems likely, the sample shows high risk scores on sensitive questionnaire topics such as drinking behavior and illicit drug use, which pleads for the validity of the questionnaire measures. Moreover, even if some underreporting has occurred, this does not have to prejudice our research or research results. Our research had exploratory intentions using correlation analyses to explore the linear relationship between the questionnaire results and Facebook displays. Since underreporting seems more likely for the high-risk users (as an attempt to conform to normal standards or social expectations), underreporting is more expected to weaken the strength than influence the direction of a linear relationship.

Conclusion and Future Research

The present research aimed at exploring the validity and indicative value of the proportion of health behavior references on Facebook profiles among students. This research suggests that references to sports, tobacco and partially alcohol are valid means for indicating associated health behavior and implications. For displayed references to drugs and nutrition however, no such validity was suggested. The results suggest that the proportion of tobacco references is a good indicator of the profile owner's tobacco use, and that the proportion of sports references

is a good indicator the profile owner's sports frequency and associated implications. Also, evidence was provided for the proportion of alcohol references on pictures and status updates as valid indicators of alcohol use frequency and quantity. Moreover, the proportion of alcohol references on info page items seems to be indicators for more serious alcohol dependency phenomena.

As a result, the use of references to alcohol, sports, and tobacco on Facebook profiles to screen the profile owner's health behavior on these topics was supported, which can possibly aid healthcare providers and institutions in discovering health behavior trends in the college student environment, or in identifying students and subpopulations which may benefit from interventions to reduce short-term and long-term health behavior consequences.

However, since this research had exploratory intentions and several limitations from the sample and recruitment perspective, future research is recommended to further explore the relationship between health behavior references on social network sites and associated health behavior and implications. More inside could be gained, especially on the alcohol and illicit drugs topic, by looking further than only straightforward linear relations between the number of references and associated health behavior, and by using a larger sample. Furthermore, future research would be useful to get deeper insight in the relationship between health behavior references on Facebook and associated everyday health behavior implications.

Also, further pilot intervention studies, as conducted by Moreno et al (2009), are recommended to investigate intervention possibilities and results for college students at risk for health risk behavior consequences, using Facebook as screening and intervention means.

Finally, future research is recommended to look at the predictive value of individual specific Facebook profile health behavior items, instead of the overall proportion of references to a certain health behavior. In this research we focused on the proportion of references to a particular behavior, but we did not make any difference between those references. As a result, we missed the chance of finding individual pictures, info page items, and words or phrases in status updates which possibly strongly indicate certain health behavior or health-risk behavior.

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Appendix A

Complete questionnaire

The questionnaire below was generated from the original online format.

Enquête levensstijl studenten

Bij deze wil ik jou als student (MBO,HBO,WO) uitnodigen voor het invullen van de vragenlijst.

De vragenlijst heeft betrekking op de levensstijl en het Facebookgebruik van studenten, met als doel de onderlinge relatie te onderzoeken.

Uiteraard blijven alle gegevens vertrouwelijk en worden deze alleen voor dit onderzoek gebruikt!

Het invullen van de vragenlijst zal maximaal 15 minuten in beslag nemen, afhankelijk van de antwoorden die je geeft.

Alvast bedankt voor je tijd!

Algemene Gegevens

1. Geslacht: Man / Vrouw
2. Leeftijd: ..... Jaar
3. Opleiding: .....
4. Nationaliteit: .....
5. Lengte: .....CM
6. Gewicht: .....KG

Facebook

1. Voor het onderzoek is het cruciaal dat we enkele kenmerken van je Facebookprofiel kunnen bekijken. Daarbij gaat het ons om het Facebookprofiel en absoluut niet om de persoon. Deze informatie wordt vertrouwelijk en enkel in dit onderzoek gebruikt.

   Om je profiel te kunnen bekijken vragen we je hier de link naar je facebookprofiel te plaatsen.
   1. Ga naar facebook.com en log in.
   2. Ga naar je profiel door op je naam te klikken.
   3. De URL in de adresbalk eindigt nu met een code zoals: id=123456789.
   4. Vul deze cijfercode hier in:
   (Sommige profielen krijgen ipv deze id-code een profielnaam. vul dan deze profielnaam in)

   .....

Alcohol

1. Hoe vaak drink je alcohol ?
   - Nooit
   - Minder dan maandelijks
   - Maandelijks
   - Wekelijks
   - Bijna dagelijks

2. Wanneer je alcohol drinkt hoeveel glazen drink je dan gewoonlijk per dag?
   - 1 of 2
   - 3 of 4
   - 5 of 6
   - 7, 8, of 9
   - 10 of meer

3. Hoe vaak gebeurt het dat je 6 of meer glazen alcohol drinkt bij één enkele gelegenheid?
   - Nooit
   - Minder dan maandelijks
   - Maandelijks
   - Wekelijks
   - Bijna dagelijks

4. Hoe vaak had je het afgelopen jaar het gevoel dat je, zodra je begon, niet meer kon stoppen met drinken?
   - Nooit
   - Minder dan maandelijks
   - Maandelijks
   - Wekelijks
   - Bijna dagelijks

5. Hoe vaak ben je er, door je drinkgedrag, het afgelopen jaar niet in geslaagd te doen wat normaal van je verwacht werd?
   - Nooit
   - Minder dan maandelijks
   - Maandelijks
   - Wekelijks
   - Bijna dagelijks

6. Hoe vaak heb je het afgelopen jaar ’s morgens behoefte gehad aan alcohol om jezelf er weer bovenop te helpen nadat je zwaar was doorgezakt?
   - Nooit
   - Minder dan maandelijks
   - Maandelijks
   - Wekelijks
   - Bijna dagelijks

7. Hoe vaak heb je het afgelopen jaar schuld of berouw gevoeld nadat je gedronken had?
   - Nooit
   - Minder dan maandelijks
   - Maandelijks
   - Wekelijks
   - Bijna dagelijks

8. Hoe vaak kon je je het afgelopen jaar gebeurtenissen van de avond voordien niet herinneren omdat je gedronken had?
    - Nooit
    - Minder dan maandelijks
    - Maandelijks
    - Wekelijks
    - Bijna dagelijks

9. Raakte jij zelf of iemand anders ooit gewond ten gevolge van je drinkgedrag?
    - Nooit
    - Ja, maar niet in het laatste jaar.
    - Ja, in het laatste jaar.

10. Heeft een vriend, dokter of andere gezondheidswerker zich ooit zorgen gemaakt over je drinken of je aangeraden minder te drinken?
    - Nooit
    - Ja, maar niet in het laatste jaar.
    - Ja, in het laatste jaar.

11. Hoe vaak, gedurende de laatste 30 dagen, heb je alleen (zonder gezelschap) alcohol gedronken?
    - Niet
    - 1-2 keer
    - 3-5 keer
    - 6-10 keer
    - 11-20 keer
    - 20 keer of vaker

12. Hoe vaak, gedurende de laatste 30 dagen, heb je auto gereden onder invloed van alcohol? (meer dan 2 drankjes)
    - Ik heb geen rijbewijs
    - Niet, maar ik heb wel een rijbewijs
    - 1-2 keer
    - 3-5 keer
    - 6-10 keer
    - 11-20 keer
    - 20 keer of vaker

13. Hoe vaak, gedurende de laatste 30 dagen, heb je alcohol gedronken met als doel dronken te worden?
    - Niet
    - 1-2 keer
    - 3-5 keer
    - 6-10 keer
    - 11-20 keer
    - 20 keer of vaker

14. Hoe vaak, gedurende de laatste 30 dagen, heb je een drankspel gedaan met alcohol?
    - Niet
    - 1-2 keer
    - 3-5 keer
    - 6-10 keer
    - 11-20 keer
    - 20 keer of vaker

15. In een normaal weekend, op hoeveel dagen (vrijdag, zaterdag, zondag) drink je tenminste één glas alcohol?
    - 0 dagen
    - 1 dag
    - 2 dagen
    - Alle dagen

16. Wanneer je drinkt in het weekend, hoeveel glazen drink je dan gemiddeld per dag?
    - 1 of 2
    - 3 of 4
    - 5 of 6
    - 7, 8, of 9
    - 10 of meer

17. In een normale week, op hoeveel weekdagen (maandag, dinsdag, woensdag en donderdag), drink je minstens één glas alcohol.
    - 0 dagen
    - 1 dag
    - 2 dagen
    - 3 dagen
    - Alle dagen

18. Wanneer je drinkt op een weekdag (maandag t/m donderdag), hoeveel glazen drink je dan gemiddeld per dag?
    - 1 of 2
    - 3 of 4
    - 5 of 6
    - 7, 8, of 9
    - 10 of meer

Tabak

1. Heb je ooit een hele sigaret gerookt?
    - Ja
    - Nee

2. Op hoeveel van de laatste 30 dagen heb je een sigaret gerookt?

    - 0 dagen
    - 1 of 2 dagen
    - 3 tot 5 dagen
    - 6 tot 9 dagen
    - 10 tot 19 dagen
    - 20 tot 29 dagen (vast)
    - Alle dagen (vast)

3. Gedurende de laatste 30 dagen, op de dagen dat je rookte, hoeveel sigarette rookte je gemiddeld per dag?
    - Ik heb niet gerookt de laatste 30 dagen
    - Minder dan 1 sigaret per dag
    - 2 tot 5 sigaretten per dag
    - 6 tot 10 sigaretten per dag
    - 11 tot 20 sigaretten per dag
    - Meer dan 20 sigaretten per dag

Drugs

1. Heb je ooit enige vorm van softdrugs of harddrugs gebruikt?
   - Ja
   - Nee

2. Gedurende de laatste 30 dagen, hoe vaak heb je enige vorm van drugs gebruikt?
   - 0 keer
   - 1 of 2 keer
   - 3 of 4 keer
   - 5 tot 9 keer
   - 10 tot 19 keer
   - 20 keer of vaker

Voeding

1. Hoeveel dagen per week eet je normaalgesproken 2 stuks fruit, óf eet je 1 stuk fruit én drink je 1 glas vruchtensap?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

2. Hoeveel dagen per week eet je normaalgesproken 2 ons groenten?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

3. Hoeveel dagen per week drink je normaalgesproken 1,5 Liter water (inclusief thee en ranja)?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

4. Hoeveel dagen per week neem je normaalgesproken een goed ontbijt?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

5. Hoeveel dagen per week eet je volkoren graanproducten, zoals volkoren (bruin) brood, muesli of bruine rijst?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

6. Hoeveel dagen per week eet je normaalgesproken snoep of chocolade?
   - Minder dan 1 dag per week/zelden
   - 1-2 dagen per week
   - 3-4 dagen per week
   - 5-6 dagen per week
   - Alle dagen
   - Alle dagen, meer dan 1 keer

7. Hoeveel dagen per week drink je normaalgesproken minimaal 1 glas cola of andere zoete frisdrank die suiker bevat?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

8. Hoeveel dagen per week eet je normaalgesproken chips of andere hartige snacks buiten de hoofdmaaltijden om?
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

9. Hoeveel dagen per week eet je normaalgesproken fastfood, zoals frites, kroketten, frikandellen, hamburgers, pizza en hotdogs.
   - 0 dagen
   - 1 dag
   - 2 dagen
   - 3 dagen
   - 4 dagen
   - 5 dagen
   - 6 dagen
   - 7 dagen

10. Hoeveel dagen per week eet je normaalgesproken een een koek, een stuk cake, een stuk taart, of ander gebak?
    - 0 dagen
    - 1 dag
    - 2 dagen
    - 3 dagen
    - 4 dagen
    - 5 dagen
    - 6 dagen
    - 7 dagen

Beweging

1. Hoe lang heb je in totaal aan intensieve fysieke inspanning geleverd?
    - Ik heb geen intensieve fysieke inspanning geleverd
    - 0 – ½ uur
    - ½ – 1 uur
    - 1 – 2 uur
    - 2 – 3 uur
    - 3 – 4 uur
    - 4 – 6 uur
    - Meer dan 6 uur

Òverige Vragen

1. Hoeveel dagen heb jij je het afgelopen jaar verslapen voor school, werk of een andere verplichting?
   .....

2. Hoeveel dagen ben je het afgelopen jaar in totaal ziek geweest?
   .....

3. Het gemiddelde cijfer van al mijn tentamens en schoolopdrachten van het afgelopen jaar schat ik op een
   .....

4. Hoeveel gaatjes had je de laatste keer dat je de tandarts bezocht?
   .....

5. Hoe vaak krijg je complimenten over je uiterlijk? (uitgezonderd complimenten van je partner)
    - Zelden tot nooit
    - Minder dan maandelijks
    - Maandelijks
    - Wekelijks
    - Bijna dagelijks of dagelijks

6. Heb je een naast je studie een bijbaantje/werk?
    - Ja, ik heb een betaalde bijbaan naast mijn studie
    - Ja, ik doe vrijwilligerswerk naast mijn studie
    - Nee, ik heb geen bijbaan

7. Hoeveel Euro verdien je daar gemiddeld per uur?
   .....

8. Hoe vaak heb je het laatste jaar complimenten gehad van een leidinggevende, vanwege je goede werkprestaties?
   - Nooit
   - 1 of 2 keer
   - 3 tot 5 keer
   - 6 tot 10 keer
   - 11 tot 20 keer
   - Vaker dan 20 keer

9. Hoe vaak heb je het laatste jaar kritiek op je werkprestaties gehad van een leidinggevende?
   - Nooit
   - 1 of 2 keer
   - 3 tot 5 keer
   - 6 tot 10 keer
   - 11 tot 20 keer
   - Vaker dan 20 keer

10. Heb je bij deze (bij)baan het laatste jaar opslag gehad vanwege je werkprestaties?
    - Ja
    - Nee

11. Geef van de volgende stellingen aan in welke mate je het er mee eens of oneens bent

		Volledig Oneens						Volledig Eens
A.	In de meeste opzichten ligt mijn leven dicht bij mijn ideaalbeeld	◉	○	○	○	○	○	○
B.	Mijn levensomstandigheden zijn uitstekend	◉	○	○	○	○	○	○
C.	Ik ben tevreden met mijn leven	◉	○	○	○	○	○	○
D.	Als ik mijn leven over kon doen, zou ik bijna niks veranderen	◉	○	○	○	○	○	○
E.	Tot dusver beschik ik over de belangrijke zaken die ik in het leven verlang.	◉	○	○	○	○	○	○

Ontzettend bedankt voor het invullen van de vragenlijst!

Ben je geïnteresseerd in de resultaten van het onderzoek, vul dan hieronder je mailadres in, zodat we je de resultaten kunnen mailen:

.....

Appendix B

Table randomly selected pictures.

In the next table, the total number of pictures and albums is given. Also for each photo album the number of pictures in that album is given and the numbers of the randomly selected pictures from that album is given. Albums on a second row are the album numbers 10, 11, and so on. Respondent 16, 22 and 38, were later removed from the research sample for different reasons.

Respondent	Pictures Total	Albums total	Album 1		Album 2		Album 3		Album 4		Album 5		Album 6		Album 7		Album 8		Album 9	
1	21	5	1	1	5	1-5	2	1,2	4	1,2,3,4	10	1-3,5,6,8-10								
2	62	5	1	1	29	5,12,14, 18,28	5	1,2,3,4	16	1,6,7,9, 10	11	2,7,8,10,1 1								
3	10	3	4	1,2,3,4	1	1	5	1,2,3,4,5												
4	22	3	7	1-7	1	1	14	1-3,5,6,8-14												
5	360	9	4	2,4	17	9,14	14	4,6	10 0	22,86, 88	31	15,30	1	1	47	2,4,2 5	34	4,5	91	10,37 , 59
6	51	3	4	1,2,3,4	38	1,2,5,18, 22,27,31 ,38	9	1,2,4,5,6,7, 8,9												
7	232	4	1	1	20 0	2,15,23, 44,53,73 ,126,194	3	1,2,3	28	2,3,5,9, 13,20,2 5,26										
8	311	7	35	4,7,26	1	1	5	1,2,5	50	2,14,46	9	5,6,8	14 7	49,66 ,94,1 10	64	16,56 ,57				
9	179	7	11	1,3,5,10	8	1,6,8	5	2,3,5	1	1	92	26,28,65,8 2	1	1	61	14,41 ,43,6 1				
10	7	4	3	1,2,3	1	1	1	1	2	1,2										
11	86	6	3	1,2,3	3	1,2,3	17	2,3,14,16	2	1,2	5	1,3,4,5	56	20,31 ,41,4 7						
12	20	4	3	1,2,3	9	1-9	2	1,2	6	1-6										
13	2096	40	21	X	14	X	48	2	49	11	12 6	26	20	X	47	8	9	X	96	46
			66	20	16	X	53	23	25	X	1	X	39	19	62	41	13 4	79	1	X
			36	33	15	X	10	X	12	X	14	X	28	X	18	X	16	X	45	17
			40	8	60	55	60	25	42	39	22	X	18	X	26	X	60	17	42	23
			19	X	18	X	19	X	43	2	59 7	483								
14	178	4	7	1,2,4,5, 6	27	4,6,7,19, 24	50	4,6,7,30,3 3	94	10,25,3 0,55,58										
15	89	5	14	1,6,9,14	12	4,7,8,10	3	1,2,3	17	5,10,13, 16	33	8,14,19,24 ,28								
16	8	3	2	1,2	1	1	5	1-5												
17	99	8	6	2,3,5	5	2,4	1	1	5	1,3	6	1,2,3	19	11,12 ,19	13	4,9,1 2	44	2,6,3 6		
18	52	5	6	1 t/m 6	3	1,2,3	3	1,2,3	2	1,2	38	3,7,8.16.1 7, 29								
19	3	2	1	1	2	1,2														
20	43	3	3	1,2,3	27	4-7, 15,18 ,21,23,2 5	13	1, 3-8, 13												
21	41	5	4	1-4	8	1,2,4,6,7	9	2,3,4,6,7	1	1	19	5,7,8,9,15								
22	309	9	3	2,3	30	2,7	5	2,3	24	6,18	20	6,8	59	40,55	24	5,20	65	44,46	79	12,21

																		,61		,35
23	**64**	**5**	40	9,10,19,25,26,38	2	1,2	5	1-5	2	2	15	1,3,6,10,13								
24	**79**	**5**	13	2,3,4,12	6	1,2,3,5	2	1,2	29	4,6,11,12,25	29	1,4,21,23,25								
25	**44**	**5**	11	1,2,4,5,10,11	4	1,2,3,4	1	1	2	1,2	26	6,8,17,20,21,23,26								
26	**101**	**8**	8	2,8	12	4,6,9	31	15,17,21	4	1,2	9	3,5,9	9	4,6	7	1,7	21	10,13,15		
27	**58**	**4**	5	1-5	2	1,2	14	1,2,5,7,10,13	36	1,3,14,18,25,30,32										
28	**150**	**10**	9	2,4	14	3,10	1	1	8	5,6	25	20,24	8	1,2	5	1	10	3,7	16	9,12
			10	4,10	44	9,35														
29	**100**	**7**	8	6,7,8	34	15,23,29	10	2,3,5	2	1,2	12	5,7,11	6	2,4,6	28	11,18,20				
30	**4**	**2**	2	1,2	2	1,2														
31	**136**	**5**	17	5,6,10,12,15	1	1	3	1,2,3	103	9,27,30,47,63,74	12	1,6,7,8,12								
32	**203**	**4**	16	1,8,9,12,13	3	1,2,3	154	13,29,64,75,135,149	30	9,12,21-23,27										
33	**62**	**6**	2	1,2	4	1-4	1	1	5	1-5	46	24,26,28,30,40								
34	**2**	**1**	2	1,2																
35	**261**	**8**	7	2,7	26	6,23,26	8	2,4	38	21,29,34	112	25,70,101	28	2,5,19	41	1,14,18	1	1		
36	**14**	**4**	2	1,2	1	1	4	1-4	7	1-7										
37	**5**	**2**	1	1	4	1-4														
38	**61**	**8**	1	1	3	1,2,3	1	1	1	1	24	13,14,18,23,24	23	3,13,14,17	7	1,2,4,6	1	1		
39	**41**	**5**	10	2,3,4,6,7,9	2	1,2	7	1,3,4,5,7	1	1	21	2,9,10,13,16,19								
40	**245**	**7**	1	1	27	4,5,16	1	1	17	1,12,16	125	22,71,84,118	29	1,5,12,18	45	4,12,20,26				
41	**18**	**2**	1	1	17	1-17														
42	**145**	**5**	9	2,3,4,8	91	4,41,58,79	8	1,2,6,8	4	1-4	33	6,18,19,29								
43	**52**	**5**	6	1-6	2	1,2	5	1-5	1	1	38	5,14,21,23,25,33								
44	**483**	**15**	2	1	50	6,25	30	20	51	7,23	46	12,15	39	5	5	4	13	1	7	1
			35	18	48	3,38	18	5	10	8	45	15	74	5,72						
45	**142**	**6**	4	1,2,4	6	2,3,4,5	1	1	53	12,34,36,48	34	4,8,13,14	44	4,22,30,35						
46	**383**	**12**	7	3,4	7	3	45	4,29	109	52,66	31	10,24	28	3,17	20	6,10	67	9,62	1	1
			1	1	1	1	66	23,44												
47	**243**	**7**	3	1,2,3	6	1,2,5	3	1,3	44	25,41,44	53	2,35,43	49	26,27,38	86	68,81,82				
48	**21**	**2**	3	1,2,3	18	1-11,13-18														
49	**14**	**2**	2	1,2	12	1-12														
50	**137**	**10**	9	2,3	5	4,5	16	8,16	25	2,20	16	13,15	18	9,18	16	4,6	7	1,5	2	1,2
			24	2,5																
51	**444**	**7**	118	18,85,95	163	55,61,71	3	2,3	3	1,2,3	11	1,2,9	99	18,37,56	47	28,31,33				
52	**45**	**4**	11	1,6,7,10,11	12	1,5,7,10,11	4	1-4	18	4,5,7,11,12,15										
53		**7**	13	3,4,11	19	1,12,15	5	2,3	15	2,8,12	42	2.5.30	19	10,11,19	27	3,16,19				
54	**88**	**3**	4	1-4	22	6,7,9,12,13,16,18,20	62	1,17,24,34,45,51,58,62												
55	**11**	**4**	4	1-4	2	1,2	2	1.2	3	1-3										
56	**311**	**10**	10	2,10	6	2,6	13	1,13	36	11,32	50	49,50	150	22,25,36	1	1	3	1,2	4	1,3
			38	3,37																
57	**101**	**7**	22	12,13,17	7	4,5,6	42	22,25,42	6	1,2	13	2,3,12	11	3,4,5	52	43,46,49				
58	**203**	**6**	7	4,5,6	9	3,6,8	3	1,2,3	17	5,12,14,	4	1,2,3	16	6,8,8						

										16			3	9,147						
59	**85**	**5**	43	3,26,29, 30,34	8	1,5,7,8	12	3,6,9,11	3	1,2,3	19	4,6,12,17								
60	**49**	**7**	5	1,2,5	8	2,3,7	7	2,4,6	1	1	6	1,2,3	6	2,4,5	16	3,4,1 1,15				
61	**115**	**7**	1	1	4	1,2,3	55	19,22,29, 36	4	1,2,3	26	19,22,23,2 5	2	1,2	23	3,4,1 3				
62	**72**	**8**	7	6,7	10	6,7,8	4	1,3	10	6,8,10	11	3,9,11	8	2,7	5	3,4	17	2,9, 12		
63	**23**	**3**	4	1-4	1	1	18	1-5, 7-14,17,18												
64	**5**	**3**	2	1,2	1	1	2	1,2												
65	**133**	**7**	74	15,42,5 1, 52	1	1	13	4,6,13	11	3,5,7	14	4,10,13	11	2,6,8	9	4,8,9				
66	**128**	**6**	10	3,5,9	8	2,4,5	38	2,11,19,38	31	1,3,14	10	2,5,7	31	2,3,4, 5						
67	**68**	**7**	1	1	5	1,2,3	1	1	9	1,3,6,9	4	1,2,3	7	1,4,5, 7	41	21,27 ,28, 33				
68	**31**	**5**	5	1-5	18	1,4,7,11, 13,16,18	1	1	1	1	6									
69	**2**	**2**	1	1	1	1														
70	**101**	**5**	37	1,7,11,3 1	15	1,6,7,8	9	2,3,5,9	15	1,6,7,9	25	3,13,14,18								
71	**62**	**7**	13	1,4,8,9	4	2,3,4	5	3,4,5	9	1,4,5	5	2,3,5	1	1	25	3,5,6, 8				
72	**135**	**7**	25	9,10,21	3	1,2,3	31	27,28,30	36	9,20,23, 28	5	1,2,4	1		34	16,17 ,23				
73	**87**	**6**	26	5,7,14,1 7	2	1,2	16	1,5,6,15	10	1,3,7,10	1	1	32	9-12,25						
74	**228**	**9**	23	2,8	26	25,26	4	2,4	41	26,28,3 3	42	21,22,27	18	6,13	35	12,22	22	9,13	17	4,17

Appendix C

Complete codebook, filled in.

Facebook element	Gezondheidsaspect	Codeer activiteit	Code	Vul in	Totaal	*Toelichting codering*
Foto's	**Aantal foto's**	Aantal foto's (0 t/ 20)	1	20	**20**	*Voor coderen gebruik de laatste 20 foto's. (aantal = 20) Bij minder beschikbare foto's gebruik ze allemaal (= aantal).*
	Alcohol	Geen Alcohol	2a	4,6,8,9,10,11,13,19	**8**	*Vul de fotonummers in van de foto's waarop geen alcohol cues aanwezig zijn*
		Wel Alcohol	2b	1,2,3,5,7,12,14,15,16,17,18,20	**12**	*Vul de fotonummers in van de foto's waarop wel alcohol cues aanwezig zijn (alle foto's die vallen onder 2c tm 2g)*
		Alcohol setting	2c	3,5,7,12,14,15,18,20	**8**	*Alcohol settings: kroeg, feest, festival, concert sportkantine of Camping (vul fotonrs in van betreffende foto's)*
		Alcohol reclame	2d		**0**	*Alcohol reclame/merken, zoals posters of petjes met logo, screensavers, etc. (vul fotonrs in van betreffende foto's)*
		Alcohol verwijzing	2e		**0**	*Dingen die wijzen op alcoholgebruik, zoals koelkast met drank of een wijnrek, flesopener (vul fotonrs in)*
		Alcohol consumptie Resp	2f	1,2,16	**3**	*Alcohol consumptie door respondent: flessen bier in de hand of op tafel, of halve glazen bier (vul fotonrs in van betreffende foto's)*
		Alcohol consump Ander	2g	1,2,16,17	**3**	*Alcohol consumptie door iemand anders dan de respondent*
		Alcohol afkeer	2h		**0**	*Alcohol afkeer: alle gedragingen/uitingen die wijzen op een afkeer van alcohol (BOB sleutelh., lichaamstaal)*
	Roken	Geen tabak	3a	1 tm 18,20	**19**	*Geen Tabak- of rokers cues aanwezig (fotonrs invullen)*
		Wel tabak	3b	19	**1**	*Wel tabak of rokers cues aanwezig (alle foto's die vallen onder 3c tm 3g)*
		Tabak setting	3c		**0**	*Tabaksetting, zoals het Rokersgedeelte in openbare gelegenheid (fotonrs invullen)*
		Tabak reclame	3d		**0**	*Tabak reclame, zoals posters of petjes met logo. (fotonrs invullen)*
		Tabak verwijzing	3e	19	**1**	*Dingen die wijzen op tabakgebruik, zoals een pakje sigaretten, een (volle) asbak of een aansteker (fotonrs invullen)*
		Tabak consumptie Resp	3f		**0**	*Tabak consumptie door respondent: sigaret in de hand of in de mond (fotonrs invullen)*
		Tabak consump Ander	3g		**0**	*Tabak consumptie door iemand anders dan de respondent (fotonrs invullen)*
		Tabak afkeer	3h		**0**	*Tabak afkeer: alle gedragingen/uitingen die wijzen op een afkeer van tabak/roken. (lichaamstaal)*
	Drugs	Geen drugs	4a	1 tm 20	**20**	*Geen drugs cues aanwezig (fotonrs invullen)*
		Wel drugs	4b		**0**	*Wel drugs cues aanwezig (alle foto's die vallen onder 4c tm 4g)*
		Drugs Setting	4c		**0**	*Drugs setting, zoals een coffeeshop, een house- of hardcore party (fotonrs invullen)*
		Drugs reclame	4d		**0**	*Drugs reclame, zoals petjes, posters of kleding met drugs(Gebruik) afgebeeld (fotonrs invullen)*
		Drugs verwijzing	4e		**0**	*Dingen die wijzen op drugsgebruik, zoals een joint, waterpijp, spacecake of harddrugs in beeld. (fotonrs invullen)*
		Drugs consumptie Resp	4f		**0**	*Drugs consumptie door respondent: joint die wordt gerookt, spacecake die wordt gegeten, etc. (fotonrs invullen)*
		Drugs consump Ander	4g		**0**	*Drugs consumptie door iemand anders dan de respondent*
		Drugs afkeer	4h		**0**	*Drugs afkeer: alle gedragingen/uitingen die wijzen op een afkeer van drugs. (lichaamstaal)*
	Gezonde voeding	Geen gezonde voeding	5a	1 tm 11, 13 tm 20	**20**	*Geen gezonde voedings cues aanwezig (fotonrs invullen)*
		Wel gezonde voeding	5b	12	**1**	*Wel gezonde voeding cues aanwezig (alle foto's die vallen onder 5c tm 5g)*
		Gez voeding setting	5c		**0**	*Gez voeding setting, zoals groenteboer, visboer. (fotonrs invullen)*
		Gez voeding reclame	5d		**0**	*(fotonrs invullen)*
		Gez voeding verwijzing	5e		**0**	*Dingen die wijzen op inname van gez voed: fruitmand, groenten, volkoren producten en alle andere gezonde producten (fotonrs invullen)*
		Gez voeding consump Resp	5f	12	**1**	*Gez voeding consumptie door respondent, zoals ontbijten, eten van groente, fruit en volkoren producten en alle andere gez.prod. (fotonrs invullen)*
		Gez voeding cons Ander	5g		**0**	*Gez voeding consumptie, door iemand anders dan respondent*
		Gez voeding afkeer	5h		**0**	*Gez voeding afkeer: alle gedragingen/uitingen die wijzen op een afkeer van gez voeding.*

						(lichaamstaal, niet lusten van groente, etc.)
	Ongezonde voeding	Geen ongezonde voeding	6a	1 tm 20	**20**	*Geen ongezonde voedings cues aanwezig (fotonrs invullen)*
		Wel ongezonde voeding	6b		**0**	*Wel ongezonde voedings cues aanwezig (alle foto's die vallen onder 6c tm 6g)*
		Ongez voeding setting	6c		**0**	*Ongez voeding setting, zoals snackbar, McDonalds, Burger King, etc. (fotonrs invullen)*
		Ongez voeding reclame	6d		**0**	*(fotonrs invullen)*
		Ongez voeding verwijzing	6e		**0**	*Dingen die wijzen op inname van ongez voeding, zoals frites, snacks, chips, frisdrank, mayonaise. (fotonrs invullen)*
		Ongez voeding cons Resp	6f		**0**	*Ongezonde voeding consumptie door de respondent, zoals consumeren van friet, hamburgers, pizza, frisdrank etc. (fotonrs invullen)*
		Ongez voed cons ander	6g		**0**	*Ongezonde voeding consumptie, door iemand anders dan de resondent*
		Ongez voeding afkeer	6i		**0**	*Ongezonde voeding afkeer: gedragingen.uitingen die wijzen op afkeer van ongez voeding. (lichaamstaal,*
	Sport/Beweging	Geen beweging	7a	1-8,10-13,17,18,20	**15**	*Geen bewegings of sport cues (fotonrs invullen)*
		Wel beweging	7b	9,14,15,16,19	**5**	*Wel beweging of sport cues (alle foto's die vallen onder 7c tm 7i)*
		Sport-/beweging setting	7c		**0**	*Sportsetting, zoals sportpark, sportkantine, gymzaal, fitnessruimte. (fotonrs invullen)*
		Sport-/beweging reclame	7d	9,14,15,16,19	**5**	*Sport reclame, zoals posters van atleten, atleten afgebeeld op kleding, sportshirts. (fotonrs invullen)*
		Sport-/beweging verwijzing	7e		**0**	*Dingen die verwijzen naar sport, zoals tennisracket, voetbal, sportkleding, snowboard, medaille, prijzenkast. (fotonrs invullen)*
		Matig intens.beweging Resp	7f		**0**	*Activiteiten (in actie) die vallen onder gemiddeld intensieve beweging, zoals Fietsen, wandelen, traplopen (fotonrs invullen)*
		Matig intens. beweg ander	7g		**0**	*Matig intensieve beweging in actie, door iemand anders dan de respondent*
		Intensieve beweging	7h		**0**	*Sport consumptie (in actie), tennissen, voetballen, volleyen, hardlopen, fitnessen, etc. (fotonrs invullen)*
		Intensieve bew ander	7i		**0**	*Sport/intensieve beweging door iemand anders dan de respondent*
		Afkeer van beweging	7j		**0**	*Afkeer van beweging: gedragingen/uitingen die wijzen op afkeer van beweging. (op de bank liggen, gamen, lichaamstaal)*
Werk en opleiding	**Aantal WO**	Aantal opleidingen en Werkgevers	8a	2	**2**	*Hoeveel opleidingen worden er op het profiel getoond? (Geef elke opleiding een nummer, 1/tm..)*
	WO & Alcohol	Opl/werkg en alcohol	8b		**0**	*Opleiding en werkgevers die je kunt associeren met alcohol: Horeca, Heineken, Bavaria, (vul betreffende WO-nummers in)*
		Opl/werkg en alcohol-afkeer	8c		**0**	*Opleidingen en werkgevers die je kunt associeren met alcohol-afkeer: Verslavingszorg*
	WO &Tabak	Opl/werkg en Tabak	8d		**0**	*Opleiding / werkgevers die je kunt associeren met tabak: Marlboro, Kent, etc.(vul WO-nummers in)*
		Opl/werkg en tabak-afkeer	8e		**0**	*Opl/werkg die ie je kunt associeren met tabak-afkeer: ??*
	WO & Drugs	Opl/werkg en Drugs	8f		**0**	*Opl/werkg die je kunt associeren met drugs: Coffeeshop (vul WO-nummers in)*
		Opl/werkg en drugs-afkeer	8g		**0**	*Opl/werkg die je kunt associeren met drugs-afkeer: Verslavingszorg*
	WO & Gez voeding	Opl/werkg en gez voeding	8i	1	**1**	*Opl/werkg die je kunt associeren met gez voeding: dietiste, boer-opleiding, subway (vul WO-nummers in)*
	WO & Ongz voeding	Opl/werkg en ongz voeding	8j		**0**	*Opl/werkg die je kunt associeren met ongez voeding: Koksopleiding(ongez eetpatroon), horeca-opleiding, mars, McDonalds. (vul WO-nummers in)*
	WO & beweging	Opl/werkg en beweging	8k		**0**	*Opl/werkg die je kunt associeren met beweging: SER (sport economie en recht), landmacht, knvb, etc. (vul WO-nummers in)*
		Opl/werkg en beweging-afkeer	8l		**0**	*Opl/werkg die je kunt associeren met beweging-tekort: ?*
Kunst / Amusement	**Aantal**	Aantal kunst en amus interesses	10a	0	**0**	*Hoeveel kunst en amusements interesses/activiteiten worden gedeeld? (geef elk KA-aspect een nummer, 1t/m..)*
	Alcohol	Kunst/amus en alcohol	10b		**0**	*Muziek, boeken, games, films en TV programma's die je kunt associeren met alcohol: ?? (vul betreffende KA-nummers in)*
		Kunst/amus en alcohol-afkeer	10c		**0**	*" " " die je kunt associeren met alcohol-afkeer. (tvprogramma over afkickkliniek bijvoorbeeld)*
	Tabak	Kunst/amus en tabak	10d		**0**	*" " " die je kunt associeren met tabak: ?? (vul KA-nummers in)*
		Kunst/amus en tabak-afkeer	10e		**0**	*" " " die je kunt associeren met tabak-afkeer. ?? (vul KA-nummers in)*
	Drugs	Kunst/amus en drugs	10f		**0**	*" " " die je kunt associeren met drugs: maffiafilms als scarface en goodfellas. (vul KA-nummers in)*

		Kunst/amus en drugs-afkeer	10g		**0**	*" " "die je kunt associeren met drugs-afkeer. (tvprogramma over afkickkliniek bijvoorbeeld)*
	Voedsel	Kunts/amus en voedsel	10h		**0**	*" " "die je kunt associeren met voedsel (ongeacht gezond/ongezond) alleen eten, geen drinken.*
	Gezonde voeding	Kunst/amus en gez voeding	10i		**0**	*" " " die je kunt associeren met gez voeding: ?? (vul KA-nummers in)*
	Ongezonde voeding	Kunst/amus en ongez voeding	10j		**0**	*" " " die je kunt associeren met ongez voeding: ?? (vul KA-nummers in)*
	Sport/Beweging	Kunst/amus en beweging	10k		**0**	*" " " die je kunt associeren met beweging: films over sport bijvoorbeeld (vul KA-nummers in)*
		Kunst/amus en beweging-afkeer	10l		**0**	*" " " die je kunt associeren met beweging-afkeer: ??*
Sport	**Aantal sportinteresses**	Totaal aantal sport interesses	11a	0	**0**	*Alle sportfavorieten en sportinteresses (totaal van alle teams, atleten sporten, etc) (geef aantal)*
	Sporten	Aantal favoriete sporten	11b		**0**	*het aantal favorieten sporten dat iemand heeft staan op zijn profiel.(geef aantal)*
	Teamsport	Aantal teamsporten	11c		**0**	*Teamsporten die als favoriete sport op het profiel staan.(Vul sport-nummers in)*
	Beweging	Sport en beweging	11d		**0**	*Sporten die ook worden geassocieerd met beweging. (alles behalve sporten als darts, dammen, denksport) (vul sport-nummers in)*
	Alcohol	Sport en alcohol	11e		**0**	*Sporten die sterk worden geassocieerd met alcohol: darten. (Vul sport-nummers in)*
	Teams	Aantal favoriete teams	11f		**0**	*het aantal favorieten teams dat iemand heeft staan op zijn profiel. (geef aantal)*
	Atleten	Aantal favoriete atleten	11g		**0**	*het aantal favorieten atleten dat iemand heeft staan op zijn profiel. (geef aantal)*
Activiteiten / Interesses	**Aantal**	Aantal favoriete activiteiten/inter	12a	4	**4**	*Hoeveel activiteiten en interesses worden gedeeld? (Geef ze een AI-nummer, 1t/m..)*
	Alcohol	Activ/interesses en alcohol	12b		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met alcohol: ?? (vul AI-nummers in)*
		Activ/interess en alcohol-afkeer	12c		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met afkeer tov alcohol*
	Tabak	Activ/interesses en tabak	12d		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met tabak: ?? (vul AI-nummers in)*
		Activ/interesses en tabak-afkeer	12e		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met afkeer tov roken*
	Drugs	Activ/interesses en drugs	12f		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met drugs: ?? (vul AI-nummers in)*
		Activ/interesses en drugs-afkeer	12g		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met afkeer tov drugs*
	Voedsel	Activ/interesses en voedsel	12h		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met voedsel (ongeacht gezond/ongezond, alleen eten)*
	Gezonde voeding	Activ/interesses en gez voed	12i		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met gezonde voeding: ?? (vul AI-nummers in)*
	Ongezonde voeding	Activ/interesses en ongez voed	12j		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met ongezonde voeding: ?? (vul AI-nummers in)*
	Sport/Beweging	Activ/interesses en beweging	12k	1	**1**	*Activiteiten en interesses die geassocieerd kunnen worden met beweging: ?? (vul AI-nummers in)*
		Activ/interesses en bew-afkeer	12l		**0**	*Activiteiten en interesses die geassocieerd kunnen worden met afkeer tov beweging*
Statusupdates	**Aantal**	Aantal statusupdates	13a	10	**10**	*Neem de laatste 10 statusupdates van laatste 6 maanden (bij minder, zoveel mogelijk) (nummer de updates 1t/m10)*
	Alcohol	Updates alcoholgebruik	13b		**0**	*Updates die direct refereren naar alcohol(activiteit): bier, wijn, champagne, zuipen, dronken, kater, zat.(geef SU-nrs)*
		Updates alcoholsetting	13c	2,3	**2**	*Updates die indirect refereren naar alcoholgebruik, , kroeg, stappen, op stap, naar feest, festival.*
		Updates alcohol-afkeer	13d		**0**	*Updates die refereren naar afkeer tov alcoholactiviteit*
	Tabak	Updates tabakgebruik	13e		**0**	*" " tabak(activiteit): roken, sigaret, marlboro, paffen.(geef SU-nrs)*
		Updates tabak-afkeer	13f		**0**	*Updates die refereren naar afkeer tov rookactiviteit*
	Drugs	Updates drugsgebruik	13g		**0**	*" " drugs(activiteit): blowen, smoken, high, stoned, etc.(geef SU-nrs)*
		Updates drugssetting	13h		**0**	*Updates die refereren naar drugssettings zoals hardcore en housefeesten of de coffeeshop*
		Updates drugsafkeer	13i		**0**	*Updates die refereren naar afkeer tov drugsactiviteit*
	Voedsel	Updates voedsel	13j		**0**	*Updates die refereren naar voedsel (ongeacht gezond of ongezond)*

	Gezonde voeding	Updates gezonde voeding	13k		**0**	*" " gezonde voeding: appel, banaan, fruit, water, ontbijten, boterham, muesli. (geef SU-nrs)*
	Ongezonde voeding	Updates ongezonde voeding	13l		**0**	*" " ongezonde voeding: snackbar, McDonalds, friet, pizza, snoepen, chips,(geef SU-nrs)*
	Beweging	Updates (matig intens.) beweging	13 m		**0**	*" " door de proefpersoon uitgevoerd of geplande gemiddelde inspanning: fietsen, traplopen, etc. (geef SU-nrs)*
		Updates beweging-afkeer	13n		**0**	*Updates die refereren naar afkeer tov gemiddeld intensieve beweging.*
	Sport	Updates sport/intensieve bew	13o	2,4,6,9	**4**	*" " door de proefpersoon uitgevoerd of geplande intensieve inspanning: sport, voetbal, fitness, etc.(geef SU-nrs)*
		Updates sport-afkeer	13p		**0**	*Updates die refereren naar afkeer tov intensieve beweging/sport*

Appendix D

Kappa statistics for each Codebook category

	Category	Kappa
Pictures	Alcohol	0.87
	Tobacco	0.66
	Illicit Drugs	X*
	Nutrition	
	Healthy Nutrition	0.77
	Unhealthy Nutrition	0.66
	Sports	0.73
Info Page	Employment & Education	1
	Art & Amusement	0.38
	Activities and Interests	0.86
	Sports	1
Status Updates	Overall	0.75