

A COMMUNITY BASED HEALTH PROMOTION INTERVENTION IN CHANGING THE ATTRACTIVE IMAGE ON ALCOHOL AMONG STUDENTS IN A GOVERNMENT SCHOOL IN NORTH CENTRAL PROVINCE, SRI LANKA

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Abstract: In Sri Lanka, the main occupation of the alcohol users was students according to the International Standard Classification of Occupation. Attractiveness of the image of alcohol is one of the key determinants and this image develops through peer norms. Aim of the study was to assess the effectiveness of a health promotion intervention in changing the attractive image of alcohol among students. A quasi experimental study was conducted among students from grade 8 to 11 from two schools in Anuradhapura and Polonnaruwa districts in Sri Lanka as the intervention and control group respectively. Intervention was delivered through a group of voluntary students from grade 11 with training to challenge peer norms. Data were collected using self-administered questionnaires and the chi square test was performed by SPSS. Acceptance on 7 out of 10 norms towards alcohol were significantly reduced in the intervention group with a p value < 0.05 (95 CI level) by comparing post evaluation results in the intervention group with the post evaluation results in the control group according to the chi square test. A health promotion intervention consists of a trained student group is effective in challenging peer norms for reducing the attractive image of alcohol among students.

Keywords: Attractive image on alcohol, peer norms, students, Sri Lanka

Introduction

Globally, alcohol is a leading public health problem (Mokdad *et al*, 2013, Rehm *et al*, 2009, World Health Organization (WHO), 2004). According to the research, various patterns of alcohol consumption is prevalent throughout the world (Jernigan, 2001) and it results in multiple diseases, risk conditions and also a threat to a health system of a country (Conway, 2005, Mokdad *et al*, 2013). Alcohol is one of the largest avoidable risk factors as it contributes by 4% to the total mortality and by 4% to 5% to the disability-adjusted life-years (Rehm *et al*, 2009). Further according to the research, there is a strong relationship between economic wealth and alcohol consumption in low-income countries and further, poor populations and countries have a greater disease burden than high-income populations and countries (Grant and Dawson, 1997, Rehm *et al*, 2009, Whitefor, 2013)

According to the past studies initiation and continuation of alcohol consumption guide by a multifactorial phenomenon (Samarasinghe, 2006a, Yan *et. al*, 2008) and the behavior of consuming alcohol is determined by factors such as portraying alcohol as an attractive commodity, privileges given to alcohol use, lack of knowledge about 'real' harm and unavailability of effective policies. Further, the role of knowledge in determining alcohol consumption is having a less importance than the role of other factors mentioned (Samarasinghe, 2006a). Researchers have highlighted the attractiveness of the image of alcohol as one of the front line factors (Samarasinghe *et al*, 1987) in determining once decision of consuming alcohol. In addition to it, alcohol industry is designing their strategies targeting these factors and they advertise alcohol as an attractive commodity especially to the category of adolescents in which students are also fall in. (Jackson *et al*, 2000). Similarly, students also learn alcohol as an attractive behavior by observing peers and elder counterparts who

consume alcohol (Hawkins *et.al*, 1992, Samarasinghe, 2006b). So, the perception of alcohol as an attractive commodity is a learnt behavior and has important implications in measures on reversing the attractive image on alcohol (Velleman, 2009).

Accurate data, regarding alcohol consumption in Sri Lanka is scarce (De Silva *et al*, 2009). However, available literature pointed out that the prevalence of alcohol consumption among males was 39.6% and among females it was 2.4% (Somatunga *et. al*, 2014). Moreover, according to a study, the majority of alcohol user's (17.5%) main occupation was a student when analyzed its study sample's occupations according to the International Standard Classification of Occupations and further, Sri Lankan adolescents tend to initiate alcohol experience at 16-20 ages (Alcohol and Drug Information Centre, 2010). Similarly, literature also pointed out that the school is a most important setting to conduct interventions for adolescents to delay their age of initiation because peer norms appear to be critical in shaping adolescent involvement with alcohol (Borsari and Carey, 2001) and these peer norms are determined by several factors; where the attractive image of alcohol plays a great deal (Perera and Torabi, 2009). Attractive image of alcohol is a combination of notions which in general can be described as perceiving alcohol consumption as a normal and acceptable deed. Apart from this, linking alcohol with pleasurable incidents of life, excuses given to the behaviors conducted by the drunken people and considering alcohol as a mean of becoming a reputed, fashionable adult are also considered as indicators of attractive image on alcohol (Samarasinghe, 2006b).

Global studies on alcohol prevention consists of individual interventions, family and school programs, social network interventions and community mobilization (Carey *et al*, 2007, Derges *et al*, 2017, Harachi *et al*, 1996, Spoth *et al*, 2002, Valente *et al*, 2007). Even though, alcohol is an arising public health epidemic in Sri Lanka, there is a dearth of scientific evidence on the effective interventions including the interventions which can be implemented via the Health Promotion Approach (HPA) (WHO, 2009) in changing attractive image on alcohol. HPA is introduced at the first international conference on health promotion held in Ottawa and it empowers communities to achieve health goals rather not relying on the expert guidelines. So, the absence of this information will affect the ability to take locally relevant preventive measures to reduce the alcohol problem. Thus this study was designed as a pilot study to assess the effectiveness of a health promotion intervention on changing attractive image on alcohol among students in grade 8 to 11 (13-16 years of age) in a state school in Sri Lanka.

Material and methods

Setting

This study was conducted by using quasi experimental design from May 2011 to July 2012. Two schools from the Anuradhapura and Polonnaruwa districts in Sri Lanka were selected as an intervention and control groups. Educational Divisions (ED) were used to select two schools by means of similar socioeconomic background but with an approximate distance. Sangilikanadarawa Maha Vidyalaya, the intervention school situated in the Rambewa ED and Orubedi Siyambalawa Vidyalaya, the control school situated in the Elahera ED. Intervention process was carried out for a period of approximately six months from January, 2012 to July, 2012.

Participants

Study population was all the students in grade 8-11 (during the year 2012) in the selected EDs.

Sample size and sampling method

All eligible schools in both EDs were listed according to the alphabetical order by using names of the school. Eligible schools were selected according to the inclusion criteria 1) school which has classes above grade 9 (In Sri Lanka School grades are from grade 1 to grade 13) and 2) supportiveness of the principle. And exclusion criteria included 1) a school which was participated to alcohol prevention program within last 6 months prior to

the intervention and 2) a school which have classes above grade 11 (Normally in Sri Lanka, time table schedule is tough for students above grade 11 as they are in touch with a major cutoff exam in Sri Lanka. So to avoid difficulties in arranging time slots these classes were excluded). Simple random sampling was used to select a school from all eligible schools from both intervention and control areas.

Both male & female students were considered as study subjects. Names of the students in grade 8 to 11 were obtained through the school registries and were arranged according to the alphabetical order. Random numbers were generated to recruit the sample. Ninety students from each intervention and control group were selected through simple random sampling method.

Intervention development

Key Informant Interviews (KII) was conducted with experts in the field of Health Promotion (HP) and alcohol prevention in Sri Lanka. Experts involved are academics those who have prior experience on alcohol prevention work and program managers of Non-Governmental Organizations who work for same targets. These KII were about prevalent norms among students, structure of an effective intervention targets on norms and the logical order of changes among students after a HP intervention. By considering the KII, a Logical Frame Work (LFW) (Figure 1) which describes logical order of intended results was developed by the Principal Investigator (PI). The main goal of the study was to assess the effectiveness of the developed HP intervention. Ten social norms (Figure 2) were selected to address through an expert committee meeting. Specific objectives were to (a) describe the pre prevalence of attractive image on alcohol among students (b) implement a plan to change the selected social norms among students and (c) evaluate the effects of the intervention in terms of changes in the attractive image among students.

Theoretical back ground of the intervention

Intervention was designed according to the principals of the HPA (Samarasinghe *et al*, 2011) such as empowering students, addressing Underlying Community Factors (UCF), conducting in a community based manner, conducting as a process apart from single activities over time and measuring the process and the intended changes. Primary focus of the intervention was to change the acceptance on social norms which create an attractive image on alcohol by empowering students. To achieve this, UCF of continuation of social norms should be addressed. UCF should be clarified for the setting by its own members (Peris *et al*, 2013). UCF for this study were identified by conducting a Focus Group Discussion (FGD) with students and the identified UCF were, attractive image of the adjacent social network, the autonomy given to an individual student by his or her group / acceptance given by the peer group to discuss about the reality about alcohol and lack of skills to deal with the respective norms.

Intervention structure and delivery

Intervention activities were carried out with grade 11 students by PI with an average of at least two meetings per month. Intervention was targeted to build a mechanism among the students to question the selected ten norms on attractive image on alcohol. Intervention activities were included 1) interactive discussions to analyze community scenarios on norms on alcohol and 2) role plays to increase skills. In role plays students were trained to change the norms according to a mutually agreed common mechanism. Content of the mechanism included 1) measures to disseminate the intervention for other grades 2) Methods to follow up the changes and obstacles. Suggested measures for dissemination of the intervention were informal discussions in common places, hanging influential posters which addresses social norms and public speaking in school assembly. Simultaneously with the intervention activities students were motivated to measure the intended changes and the process by keeping ongoing records.

Study instruments

A pre-tested validated Self Administrated Questionnaire (SAQ) which is developed to suit to the Sri Lankan context by referring to past literature on prevalent social norms was used as the study instrument. Content and consensual validity was determined using a delphi process, where experts in the field (two academics work on community based alcohol prevention and an officer from a Non-Governmental Organization work on alcohol prevention) involved. For content validity, the experts rated for each identified norm on a scale of 10 (high influence on students in Sri Lanka) to 0 (low influence on students in Sri Lanka). For consensual validity, the experts rated again on a scale of 10 (more appropriate to use with grade 8 to 11 students in Sri Lanka) to 0 (less appropriate to use with grade 8 to 11 students in Sri Lanka). These ratings were summarized and ten norms were selected as most relevant norms to include in the questionnaire. Reliability was determined by test-retest reliability method and the questionnaire was administered before and after a 14- day period to a same group of students similar to the original study sample.

Final instrument consisted of ten social norms on attractive image on alcohol. For each norm participants could respond for a five point likert type scale ranging from totally agree, agree, can't say, disagree and to totally disagree.

Data Collection

The data were collected from grade 8-11 students in both intervention and control groups at the schools by the PI during both pre and post evaluations to obtain socio economic and demographic data and the level of acceptance on each selected norm. The principals of the schools were informed about the purpose of the study and prior notice was given before visiting to the schools and two attempts were taken if a student was unable to meet. A pretest was conducted before collecting data.

Data analysis

The characteristics of the study sample was summarized and described by using descriptive statics and the comparison of the characteristics of intervention and control groups were done using Chi square test. Similarly, chi square test was used to detect the statistical significance difference among pre and post levels of prevalence of attractive image in intervention and control group. Statistical Package of Social Sciences (SPSS) 20 statistical software was used to analyze the quantitative data.

Ethical considerations

Ethical approval for conducting the study was granted from the ethics review committee of the Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka. Informed written consent for collecting data and to publish findings was obtained from care givers of the selected students prior to data collection. Standard measures were taken to ensure confidentiality of data. PI collected the data and a unique serial number was assigned to each data.

Community scenarios were used as a strategy to discuss about the topic alcohol with students, to minimize the discomfort occurred by discussing about alcohol directly. All the interventional activities were designed through group discussions and students were trained specially on effective communication skills. This was aided them to avoid possible bullying events because of the intervention activities. Data collection was conducted in the school premises. Data collection conducted grade wise and all the recruited students were requested to attend to one class room belong to their grade, after the school. Students were informed to fill the questionnaire by their own and data collectors supervised the process. Students were linked with experts and services whom they can get help if they sought to solve any matter related to alcohol consumption. Such students were monitored by the PI throughout the project for necessary services. An intervention program was offered to the control community at the end of the study.

Results

Response rate within the study population was 100%. All students from the intervention and control groups were included in the data analysis.

Student's basic socioeconomic and demographic data

Both intervention and control groups consisted with more males 50 (44.4%) and 55 (61.1%) respectively. According to the Table 1, in the intervention group most of the students (46.7%) are from farming families and in the control group it was 56.7%. According to the statistical test, there was no statistical significant difference between the control and intervention groups in relation to socio demographic details.

Attractive image among students in pre evaluation

Majority of the participants in both groups have a same level of prevalence of attractive image on alcohol. There was no significant difference in student's acceptance of norms on attractive image in the both intervention and control areas (Table 2)

Changes in prevalence of attractive image among students in post evaluation-Intervention group

Seven out of ten selected norms showed a significant change of acceptance during the pre and post interventional comparison. The image of three norms "By using alcohol can engage with the new fashion", "Alcohol is a good way to show rebelliousness" and "It is easy to threat other under the influence of alcohol" only slightly change and that changes were not significant (Table 3).

Changes in prevalence of attractive image among students in post evaluation-Control group

According to the data there were no changes to the acceptance of selected norms among students in the control group during study period (Table 4).

Changes in prevalence of attractive image among students in post evaluation- Intervention and control group

Significant differences were noted between the proportions of students from interventional and control groups who accepted selected norms in the post-evaluation. Such changes were not observed for only two norms (Table 5).

Discussion

Our findings indicate that the HP intervention developed for this study has successfully changed the acceptance of attractive image on alcohol among 13 to 16 years of age students in a state school in Sri Lanka. At pretest acceptance on selected social norms among students were high. At posttest participants in intervention group showed less acceptance on most of the social norms (7 out of 10) whereas no similar change observed in the control group. This study measured the acceptance on prominent social norms that are said to 'trigger' initiation of alcohol which were identified though KII in Sri Lanka and these norms represent strong beliefs on alcohol. According to results, these norms are highly prevalent among students and also an indication of the typical thinking pattern of Sri Lankan students on alcohol. But due to the paucity of past research evidence about norms we couldn't compare the findings within Sri Lanka.

This study is not in line with other previous interventional studies in the globe as most of the past studies have been focused on psychological theories and targeted on developing knowledge on alcohol related harm (Perry *et al*, 1996), however, these studies also reported reduction in consumption among their targeted groups. In contrast, this study is an intervention to reverse what already learnt and also a peer teaching intervention. Peer teaching is more effective in a setting like school and with a population like students where more social norms are embedded in. (Valente *et al*, 2007). Though a number of successful projects have applied community based

approach to prevent alcohol, there is a limited evidence to date for utilizing HPA to mobilize communities in which use the concept of empowerment to change behaviors. Most of the previous studies focused on improving knowledge while some studies focus on addressing mediating variables. Further these studies mostly rely on health education and distributing information, communication and education materials on individual basis. According to past studies human behavior is influenced by many other factors other than knowledge. Further, alcohol usage is determined based on the socio-cultural milieu in which it is used. This socio-cultural milieu determines the factors that contribute to the initiation and continuation of usage (Kuntsche *et al*, 2005).

Past studies stood with lack of proper theory and a LFW which could be used to explain gained changes. By contrast, this study conducted according to the HPP. Moreover according to the LFW, the acceptance on seven norms among students changed due to the sight of their own acceptance of norms and due to the questioning process of UCF of acceptance of norms. This empowerment concept through HPA is novel to Sri Lanka. In comparison, this is one of the first quasi experimental studies which explain the behavior of each single norm followed an intervention. Further studies are needed to follow up this study subjects to measure the impact, as the high acceptance of attractive image on alcohol, among the study subjects predicts the probability of initiate alcohol experiments in future (Samarasinghe, 2006a). Although students have initiated a change after the intervention, it was noted that some norms haven't change significantly. So, this finding will indicate a future research area.

Strengthens and Limitations

Since this study targets to see an effectiveness of a HP intervention it was not intended to generalize findings to average student population. Therefore we had a small sample size and not use a proper sampling technique thus this study consisted with 13-16 years and centralized around a school. So, this will hinder the reflections of average school environment. Other obstacles were discrepancies between our and organizational goals and obtaining time slots from the school time tables for the interventions. Within the limited time frame we had to measure short term impacts of the process.

Conclusions

Developed intervention model is successful in changing part of the selected social norms on attractive image on alcohol and amendments to intervention activities should be needed for non-changed norms.

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Appendix

Table 1: Adolescent's basic socioeconomic and demographic data

Socio-demographic characteristic	Intervention Group Number (%) (Total=90)	Control Group Number (%) (Total=90)
Gender		
Male	50 (44.4)	55(61.1)
Female	40(55.5)	35(38.9)
Religion		
Buddhist	85(94.4)	83(92.2)
Other	05 (5.6)	7 (7.8)
Occupation of the father		
Farmer	42(46.7)	51(56.7)
Forces	22(24.4)	19(21.1)
Other(Teacher, Trade)	26(28.9)	20(22.2)
Other	05(14.3)	04(12.5)

Table 2: Prevalence of attractive image among students in pre evaluation

Norm	Intervention pre-evaluation (%)	Control pre-evaluation (%)	P value *
Majority of alcohol users feel it as a comfortable experience for body.			
Agree	56(62.2)	47(52.2)	0.175
Disagree	34(37.8)	43(47.8)	
Alcohol is a method of engaging with the new fashion			
Agree	48(53.8)	53(58.9)	0.453
Disagree	42(46.7)	37(41.1)	
Alcohol use is a behavior among majority of people in the society.			
Agree	53(58.9)	52 (57.8 }	0.880
Disagree	37(41.1)	38(42.2)	
Alcohol is a good way to show rebelliousness			
Agree	47(52.2)	49(54.4)	0.765
Disagree	43(47.8)	41(46.6)	
After drinking alcohol it is normal to forget what is doing			
Agree	51(56.7)	47(52.2)	0.549
Disagree	39(43.3)	43(47.8)	
Behavior of a drunken person is totally due to the influence of alcohol.			
Agree	53(58.9)	50(55.6)	0.651
Disagree	37(41.1)	40(44.4)	
It is easy to threat others under the influence of alcohol			
Agree	58(64.4)	51(56.7)	0.286
Disagree	32(35.6)	39(43.3)	
When people drunk it is not suitable to discuss domestic matters.			
Agree	57(63.3)	49(54.4)	0.226
Disagree	33(36.7)	41(45.6)	
It is not need to care about the things done by the drunken person.			
Agree	60(66.7)	58(64.4)	0.754
Disagree	30(33.3)	32(35.6)	
By using alcohol people can become more violent.			
Agree	57(63.3)	52(57.8)	0.446
Disagree	33(36.7)	38(42.2)	

*significant level = 0.05

Table 3: Changes in prevalence of attractive image in intervention group- Post evaluation

Norm	Intervention pre-evaluation (%)	Intervention post - evaluation (%)	P value *
Majority of alcohol users feel it as comfortable experience for body.			
Agree	56(62.2)	26(28.9)	0.000
Disagree	34(37.8)	64(71.1)	
Alcohol is a method of engaging with the new fashion			
Agree	48(53.8)	37(41.1)	0.101
Disagree	42(46.7)	53(58.9)	
Alcohol use is a behavior among majority of people in the society.			
Agree	53(58.9)	11 (12.2)	0.000
Disagree	37(41.1)	79(87.8)	
Alcohol is a good way to show rebelliousness			
Agree	47(52.2)	38(42.2)	0.179
Disagree	43(47.8)	52(57.8)	
After drinking alcohol it is normal to forget what is doing			
Agree	51(56.7)	31(34.4)	0.003
Disagree	39(43.3)	59(65.6)	
Behavior of a drunken person is totally due to the influence of alcohol.			
Agree	53(58.9)	07(7.8)	0.000
Disagree	37(41.1)	83(92.2)	
It is easy to threat others under the influence of alcohol			
Agree	58(64.4)	53(58.9)	0.443
Disagree	32(35.6)	37(41.1)	
When people drunk it is not suitable to discuss domestic matters.			
Agree	57(63.3)	22(24.4)	0.000
Disagree	33(36.7)	68(75.6)	
It is not need to care about the things done by the drunken person.			
Agree	60(66.7)	21(23.3)	0.000
Disagree	30(33.3)	69(76.7)	
By using alcohol people can become more violent.			
Agree	57(63.3)	09(10.0)	0.000
Disagree	33(36.7)	81(90.0)	

*significant level = 0.05

Table 4: Changes in prevalence of attractive image among students in control group- Post evaluation

Norm	Control pre-evaluation (%)	Control post-evaluation (%)	P value *
Majority of alcohol users feel it as comfortable experience for body.			
Agree	47(52.2)	45.0(50.0)	0.766
Disagree	43(47.8)	45.0(50.0)	
Alcohol is a method of engaging with the new fashion			
Agree	53(58.9)	56(62.2)	0.647
Disagree	37(41.1)	34(37.8)	
Alcohol use is a behavior among majority of people in society.			
Agree	52(57.8)	48(53.6)	0.549
Disagree	38(42.2)	42(46.7)	
Alcohol is a good way to show rebelliousness			
Agree	49(54.4)	49(54.4)	1.000
Disagree	41(45.6)	41(45.6)	
After drinking alcohol it is normal to forget what is doing			
Agree	47(52.2)	49(54.4)	0.765
Disagree	43(47.8)	41(45.6)	
Behavior of a drunken person is totally due to the influence of alcohol.			
Agree	50(55.6)	51(56.7)	0.881
Disagree	40(44.4)	39(43.3)	
It is easy to threat others under the influence of alcohol			
Agree	51(56.7)	55(61.1)	0.545
Disagree	39(43.3)	35(38.9)	
When people drunk it is not suitable to discuss domestic matters.			
Agree	49(54.4)	48(53.3)	0.881
Disagree	41(45.6)	42(46.7)	
It is not need to care about things done by the drunken person.			
Agree	58(64.4)	56(62.2)	0.757
Disagree	32(35.6)	34(37.8)	
By using alcohol people can become more violent.			
Agree	52(57.8)	55(61.1)	0.649
Disagree	38(42.2)	35(38.9)	

*significant level = 0.05

Table 5: Changes in prevalence of attractive image among students in post evaluation in both intervention and control groups

Norm	Intervention post-evaluation (%)	Control post-evaluation (%)	P value *
Majority of alcohol users feel it as comfortable experience for body.			
Agree	26(28.9)	45.0(50.0)	0.004
Disagree	64(71.1)	45.0(50.0)	
Alcohol is a method of engaging with the new fashion			
Agree	37(41.1)	56(62.2)	0.005
Disagree	53(58.9)	34(37.8)	
Alcohol use is a behavior among majority of people in society.			
Agree	11 (12.2)	48(53.6)	0.000
Disagree	79(87.8)	42(46.7)	
Alcohol is a good way to show rebelliousness			
Agree	38(42.2)	49(54.4)	0.101
Disagree	52(57.8)	41(45.6)	
After drinking alcohol it is normal to forget what is doing			
Agree	31(34.4)	49(54.4)	0.007
Disagree	59(65.6)	41(45.6)	
Behavior of a drunken person is totally due to the influence of alcohol.			
Agree	07(7.8)	49(54.4)	0.000
Disagree	83(92.2)	41(45.6)	
It is easy to threat others under the influence of alcohol			
Agree	53(58.9)	55(61.1)	0.761
Disagree	37(41.1)	35(38.9)	
When people drunk it is not suitable to discuss domestic matters.			
Agree	22(24.4)	48(53.3)	0.000
Disagree	68(75.6)	42(46.7)	
It is not need to care about things done by the drunken person.			
Agree	21(23.3)	56(62.2)	0.000
Disagree	69(76.7)	34(37.8)	
By using alcohol people can become more violent.			
Agree	09(10.0)	55(61.1)	0.000
Disagree	81(90.0)	35(38.9)	

*significant level = 0.05

Figure 1- Logical Frame Work (LFW)

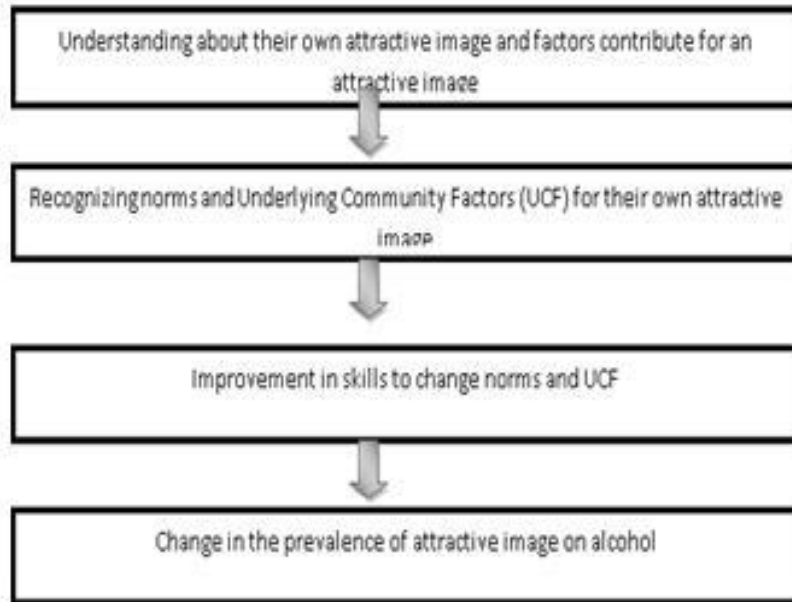


Figure 2- Norms selected for the intervention

Majority of alcohol users feel it as comfortable experience for body.
Alcohol is a method of engaging with the new fashion
Alcohol use is a behavior among majority of people in society.
Alcohol is a good way to show rebelliousness
After drinking alcohol it is normal to forget what is doing
Behavior of a drunken person is totally due to the influence of alcohol.
It is easy to threat others under the influence of alcohol
When people drunk it is not suitable to discuss domestic matters
It is not need to care about things done by the drunken person
By using alcohol people can become more violent.