

**Overview of published  
research on consumer's  
perceptions and  
understanding standard  
drinks and drinking  
guidelines**

RARHA- WP5







Title: Overview of published research on consumer's perceptions and understanding standard drinks and drinking guidelines

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## Summary

Messages with regards to alcohol consumption vary across and even within countries. Some countries in the EU have issued drinking guidelines on alcoholic beverages (the UK) others have included warnings regarding drinking during pregnancy (France) and others have health information accompanying each alcohol advert (Poland).

Moreover, there are different national definitions of a 'standard drink', a measure used to quantify the amount of alcohol consumed.

The purpose of this paper is to examine background literature with regards to consumers' views on guidelines and definitions of a standard drink.

Despite the importance of the issues in terms of contribution it can make towards enhancement of healthy habits by the general public, the literature in this area has proved to be scarce.

This review of the scientific literature could not identify specific actions which explored consumers' information needs regarding alcohol in general or health related alcohol risks in particular. We can therefore conclude that there is a lack of evidence in this field, and although firmer methods of market control, or specific policies regarding alcohol use are required, in this context the opinion of the consumers' should be heard and quantified.

# Alcohol, information and consumer's views regarding alcohol related risks

The purpose of this review of the scientific literature is to assess recent evidence in the field of alcohol regarding consumers' views and alcohol related risk information preferences.

During the last decade, the scientific literature has consistently shown that alcohol consumption is associated with a great number of adverse health conditions and it is the third leading cause of preventable death worldwide (Bui et al, 2008; WHO,2004). This has important repercussion in Europe as well as in other countries as highlighted by the WHO (2013).

Despite scientific evidence and concern by health authorities and civil society, manufacturers are not required to disclose product information relating to health information (ingredients or drinking guidelines) in contrast to other packaged food and beverage goods. So far only one country in Europe - France- includes health information about drinking during pregnancy. Certain initiatives have highlighted this issue, however to date no concrete coordinated action is in place. There is no consistency regarding legislation on this topic across countries.

The salience of communicating health related information with regards to alcohol should not be underestimated; this requires work in order to raise awareness of the topic and to encourage consumers to demand information.

## Defining terms

It is essential before advancing in this review to define certain key terms related to this work, such as "consumer", "information" on "alcohol related risks" and "alcohol risk communication". The subject regarding alcohol consumption which is also noted in this piece of work should be straightforward.

In order to clarify the terms of this review of the literature, certain terms are defined next:

- Consumer: a person who purchases goods and services for personal use (Oxford Dictionary, 2010)
- Health consumers: any actual or potential recipient of health care, such as a patient in a hospital, a client in a community mental health centre, or a member of a prepaid health maintenance organization (Bupa Medical Dictionary,2012).

- (Alcohol) related risks: a disease precursor (in this case, alcohol use) associated with a higher than average morbidity or mortality rate. A risk factor is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury. Some examples of the more important risk factors are underweight, unsafe sex, high blood pressure, tobacco and alcohol consumption, and unsafe water, sanitation and hygiene (WHO, 2004).
- Health related literacy: the constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the health care environment,“ including “the ability to read and comprehend prescription bottles, appointment slips, and other essential health-related materials” (Baker, 2006) and ability to assess and monitor one’s own alcohol intake.
- Consumer health preferences: desires by each individual for the consumption of goods and health services that translate into choices based on income or wealth for purchases of goods and services to be combined with the consumer's time to define consumption activities (Santerre & Neun, 2007).

An important result emerging from this literature review is a limited number of researches solely focusing on the consumers perceptions of risks related to alcohol consumption. Similar result was found for literature regarding consumers’ views on drinking guidelines.

## Methodology

In order to review the recent evidence regarding the chosen topic of this literature review a computer-assisted Boolean search of the scientific literature was conducted. Electronic databases searched were EBSCO Host, OVID-CINHAL, MEDLINE-PubMed, PsychInfo and Embase.

The search was limited to materials published from January 2000 to December 2014.

Search terms included free text and MESH terms for: consumer, views, beliefs, preferences, health related, risk, information, and alcohol. Selected terms were selected through discussion with the research team, specialists in the field and RARHA members.

Relevant studies were identified by screening titles and abstracts of retrieved references from the previous mentioned electronic databases. Articles were not selected unless the title or abstract clearly focused on consumer information on alcohol risks or other health related aspects. Full texts of the articles were retrieved for further screening in case of doubt. Each retrieved article was subsequently screened for inclusion according to the criteria described above. The reference lists of relevant reviews and included studies were hand-searched. Additionally, the terms review and peer review materials were added by using the snowballing technique. Studies were finally hand searched and ultimately selected if clear link to the search topic was established. Only full text material articles were included in this review.

No age range was selected for this review of the literature. Language of publication was restricted to English.

## Results of the electronic databases search

The initial electronic searches identified 1846 potentially relevant articles. After screening the titles and abstracts, 482 potentially relevant articles were obtained as full text publications. A final 117 articles were identified as relevant from revising the different reference lists or electronically suggested articles of the retrieved articles.

At a second stage, full articles were revised for eligibility and five articles were yet again excluded according to the search criteria. In a subsequent hand-search three articles were also selected.

Final review of all the materials focused on selected materials, which was difficult since overall, a lack of focus on real consumer expectations was documented.

Articles were excluded if they were secondary reports, letters or editorials.

## Brief description of the studies

A total of 117 scientific articles were finally included in this review according to the previously defined criteria.

Materials included in this review presented data from a wide variety of scenarios. Most data was European, although some research included data North American and Australian evidence. In addition, limited examples included data on specific populations such as: Kazakhstan, Korea, Micronesia, Hong Kong, Chinese, and Mexico, Japan or New Zealand populations. Focus of the topic regarding the selected materials varied widely and therefore, in order to facilitate the discussion of the found evidence, precise organisation was required.

In order to present the findings, a thematic content analysis of the main themes was chosen to describe the reviewed material.

## Topics described by the review of the literature

Once the material selected by this literature search was reviewed, the documents selected and retained were later organized according to main themes, which are described next.

It should be first noted that surprisingly we identified a lack of absolute matches with the main topic explored by this review. No specific materials were retrieved by the databases search within the specific time frame defined. However, a number of seminal articles

identified (via the snowballing technique) hinted the topic explored which are briefly introduced before describing the rest of the relevant material.

An article presented by Fischhoff, Sovic and Lichtenstein already in 1979 under the title “Weighing the risks: risks, benefits which risks are acceptable?” emphasized the difficulties that certain fields face to regulate usage due to the lack of adequate and precise answers on specific topics such as carcinogenicity related to certain nutrients (i.e. saccharin) or alcohol damage.

Another example by an American study conducted by Thompson et al in 1998 explored the assessment of health risk behaviours in order to inform consumers, providers, purchasers and health care organizations regarding specific risky behaviours. Thompson and colleagues focused health risk behaviours such as diet, tobacco, physical activity and alcohol use since those had been identified the leading causes of death in the US. The authors noted that in order to make major improvements in the health status of the population, behavioural risk factors for disease must be addressed. They proposed a health risk behaviour survey and made specific recommendations on what a survey might address in health risk behaviours and to subsequent implement interventions.

Knox (2000) criticised the fact that the study of risk perception has been regularly surrounded by controversy, conflict and opposed shifts. Although researchers have actively investigated risk assessments the results still appear uneven and not always consistent. Knox was mostly focused on food goods, exploring matters of hygiene and calories and less on specific hazards. Knox argued that as a result, theories of risk have been constructed with reference to environmental and technological hazards, such as nuclear power, whilst neglecting food issues. Recently, after much focus on “food scares”, attention has moved towards the study of actual food risk. However, yet again food risk research has focused virtually exclusively upon attempting to explain the divergence of opinion that exists between experts and the lay public. Alcohol related specific risks and how consumers perceive or demand information on this topic appear very limited. Knox addressed this topic more than fifteen years ago and it is still not solved.

The rest of the articles selected in this review are presented next according to its main thematic content, as described earlier.

## **1. Consumers views of health information and warning labels on alcohol containers**

One of the few examples of research evidence identified by this review of the literature was the Australian mixed method study by Thomson et al (2012). This research aimed to identify general and specific features regarding health information warning labels on alcohol containers which could inform development and implementation of a novel labelling

approach in that country. A cross-sectional survey plus a qualitative assisted interview via telephone reached over 1500 respondents. Six focus groups (FGs) were equally used to test suitability of a dozen of new label prototypes for beverage containers. In brief, the survey results highlighted an approximate 85% of support for extra information that could be enforced by government authorities to be included on the new labels, such as for instance: nutritional information, alcohol content, health warning messages, and images amongst others. The FGs underlined the need to supplement the beverage's labelling with governmental advertising campaigns and targeting specific groups in order to distribute this information. A high level of public support regarding more explicit and detailed health information on alcoholic beverages has been identified. This study is Australian, however results could be similar for a variety of countries. Since research in this specific topic is so limited it would be interesting to gather information within the European.

A recent study by Krska and Mackridge in 2014 involved the public and other stakeholders in developing and evaluating a community pharmacy alcohol screening and brief advice service. The researchers wanted to explore the views of consumers' perceptions on whether community pharmacy workers should provide alcohol related risks information. To do so, a mixed method triangulated study was proposed. In brief, results suggested that the pharmacy environment did not appear as the ideal setting for providing guidance relating to alcohol consumption.

Due to some limitation of such setting i.e. privacy issues, it was suggested that other avenues for communication of alcohol risks could be more appropriate.

## **2. Perceptions regarding nutritional value and health aspects of alcoholic beverages**

Two studies conducted in 2008 discussed the perceptions of health aspect of beverages containing alcohol. In particular Wright et al. (2008) focused on the nutritional value of drinks, particularly in differences between beer and red wine, not only regarding dietetic assessment but also as being considered "beneficial" as part of a nutritious diet. Despite the existing evidence regarding the fact that both beer and red wine are equivalent in terms of nutritional perspective certain misrepresentations still persist. The researchers conducted a survey comparing consumers' perceptions of alcoholic and nonalcoholic drinks and perceived healthfulness of the same. According to the respondents, in general consumers perceived red wine to be healthier than most of other alcoholic drinks, such as beer or white wine. Healthfulness (as perceived by the respondents) did not appear as the key factor behind the drink's selection. Nutritional information however, would have an impact on the health related perception of the drink and for some consumers, particularly in those who would normally drink beer rather than wine.

Another example is a series of focus groups run by the same team on the beer consumers' perceptions of the health aspects of alcoholic beverages. Wright et al. (2008b) states that consumers' perceptions are commonly shaped by a number of factors including environment, publicity, public health campaigns, labelling, health claims and equally warnings regarding the dangers of alcohol consumption. Some of the health claims, previously described alcohol as a "tonic, health boosting beverage or vitamin beers" (such statements are not legal in the EU context). Those assertions were frequently led by the manufacturing companies in a sort of marketing "in order to help consumers select a variety of beverages" that seems to have persisted through generations (Popkin et al., 2006). The purpose of Wright and colleagues' study was to increase understanding of consumers' perceptions regarding beer and wine in the context of a healthy diet. Responses from three geographical regions of the US were collected and examined to identify variations. Although the results showed statistically significant variances between location, gender, and age, general trends were identified. In general, males and females perceived red wine as the healthiest alcoholic beverage and equally, men rated alcoholic beverages as more healthful than women. Taste was identified as the leading driver of choice followed by location and activity. In relation to information, consumers noted that they received information regarding health and nutrition mostly from four sources: health professionals, scientific studies, and classes or school as the most credible sources of nutritional information about alcoholic beverages. This statement is relevant since not every individual may be in contact with health professionals or be able to read scientific studies in order to search for such specific information. Participants rated the beverage industry, internet, and advertisements, as the least credible sources of nutritional information about alcoholic beverages. However, despite the lack of credibility consumers still used those in order to obtain information.

Still, a previous article by Wright and colleagues in 2007 noted that consumers' perception of healthfulness changed when nutritional information was provided. This study by Wright indicated that attitudes toward drinks would definitely be influenced by health information. This last point would suggest that nutritional information and risk information when present could have a positive impact on consumer perceptions and informed choice. The question is why that information is not yet available. In conclusion, Wright et al. (2008) noted that they were unaware of published reports describing consumers' perception of the health aspects of alcoholic beverages or their understanding of the suitability of moderate consumption of alcoholic beverages in a healthy diet. The reality is that this statement seems still current nowadays.

### **3. Alcohol demand and risk preference**

Alcohol and risk are concepts that seem to be linked, although regular consumers do not always consciously connect both concepts. Dave and Saffer (2008) note that economist and psychologist have showed interest in the concept of risk preference. Economists would tend

to categorize individuals based on a more or less risk-tolerant based on the marginal utility of income while psychologists categorize individuals' propensity towards risk based on harm avoidance, novelty seeking and reward dependence traits. Although both standpoints regarding risk are valid, implications for research are varied.

For the purpose of this literature review, one key aspect is the fact that psychology researchers have found risk preference to be an important determinant of alcohol consumption, while economist would not consider this variable. A key point by Dave and Saffer is that risk preference has a significant negative effect on alcohol consumption. On the other hand, they also note that tax policies seem to be as equally effective in deterring alcohol consumption among those who have a higher versus a lower propensity for alcohol use. Dave and Saffer (2008), suggest that risk tolerant individuals are equally responsive to excise taxes as are risk-averse individuals. According to them, their results would strengthen the rationale for raising alcohol excise taxes as policy tool for deterring use among groups likely to over-consume alcohol. Nevertheless, this way, the individual would not be given the chance of informed choice only but being somehow dissuaded by taxation to avoid certain goods and raising the question of continuity and stability of alcohol avoidance.

## 4. Effects on health risk information on addictive goods consumption

Given the area studied, it was considered beneficial for the comprehensiveness of this report to add the studies regarding lessons learned from the French and US health information messages regarding pregnancy. Surprisingly, these studies did not emerge from the search (as described in methodology).

It has been noted that the US health warning labels have prompted discussions about the dangers of drinking, steadily increased awareness of the labels, and there is evidence of increased public support for alcohol labeling by the US public following its introduction. Former surveys of the general populations of US and Ontario, 1989 to 1994 reported that respondents have taken part in conversations about risks of alcohol consumption from before the introduction of the labels to the year afterwards. Similarly, pregnant women who saw the labels were more likely to discuss the issue; in addition a 'dose-response' effect was found such that the more types of warnings the respondents had seen (on adverts at point of-sale, in magazines and on containers) the more likely they were to have discussed the issue (Stockwell, 2006).

In France comparable result were found in relation to introduction of the pictogram in 2006. Study of public awareness regarding dangers of drinking alcohol during pregnancy has indicated positive evolution in terms of change in social norm to 'no alcohol during pregnancy' (Guillemont, 2009).

It could plausibly be argued that where relatively strict warning label regulations have been used, there has indeed been a shift towards regarding alcohol as more problematic and heavier drinking as less 'normalised' (Wilkinson and Room, 2009). Furthermore, warning label message might serve to legitimate a socially challenging intervention, for example increasing behaviours that aim to reduce the likelihood of an inebriated person getting behind the wheel (Tam, 2010).

Labels need to be regarded as an opportunity for impact over time, rather than setting the expectation that they will affect immediate behavioural change. Existing low awareness of the health consequences of alcohol and poor perception of the recommended safe drinking levels, suggests that behaviour change with respect to alcohol consumption will take some time (Jones, 2009).

Along these lines, an article by Lee et al. in 2010 investigated the relationship between the dissemination of information regarding health risks of tobacco, alcohol and betel nuts and specific consumption in Taiwan. Using the central bureau of statistics demand system model of the country, the researchers estimated that an increase in the dissemination of information regarding health risks of the three topics examined by them would substantially reduce real consumption. Lee et al. noted that empirical evidence would confirm that price would also have a complementary relationship in this case regarding tobacco, alcohol and betel nuts at least in the Taiwanese scenario. Even when results of this study may not be straightforwardly exchangeable to all scenarios, the research team noted that similar trends would be easily identifiable in a variety of countries. The effects of price on consumption have been widely studied in a variety of countries, and this would be playing a key role in the development policies to control consumption particularly in Asia, as noted by the authors of this study. Finally, they recommend measuring public perception of the risks of using alcohol, tobacco and betel nuts to broaden the health risk information index particularly insisting to include magazines and television campaigns to ultimately evaluate the impact on whether health risk information does indeed have a real effect on health-related behaviour with a special emphasis on young and higher income population groups.

Other examples, such as in the tobacco field, have provided strong evidence that warning labels can be effective not only in increasing information and changing attitudes, but also in affecting behaviour. Results from the International Tobacco Control evaluation also support the effects of pictorial labelling. This research noted that respondents would feel more prone to quit smoking after being in contact with package warnings. In fact, cigarette packages warnings have had most critical influence in a more indirect manner, such as by influencing non-smokers to use social and peer pressure to encourage smokers to stop. A final influence of the warnings which could be very difficult to assess.

## 5. Alcohol and cancer

Despite the fact that alcohol is a known risk for cancer onset, it would appear that consumers do not automatically link both terms. Alcohol is a significant risk factor for certain cancers (Baan et al., 2007; IARC, 2010), particularly for mouth, pharynx, larynx, oesophagus, bowel, liver and breast (Allen et al., 2009). Regular consumption of alcoholic beverages is associated with an increased risk for cancers at different sites along the upper digestive tract: daily intake of around 50g of ethanol increases the risk for these cancer types two-to three-fold, compared with the risk in non-drinkers. For these cancer types the effects of drinking and smoking seem to be multiplicative, which demonstrates the harmful effect of the combination of these two habits. Consumption of alcoholic beverages was confirmed as an independent risk factor for primary liver cancer (IARC, 2010).

Last year the International Agency for Research on Cancer (IARC) and the European Commission released the updated 4<sup>th</sup> edition of the European Code Against Cancer. The message in relation to alcohol consumption in the new European Code Against Cancer is: *If you drink alcohol of any type, limit your intake. Not drinking alcohol is better for cancer prevention.*

Based on the evidence that for instance almost 2-6% of cancers could be attributable to use of alcohol, countries such as Australia have issued recommendations for people to seriously limiting or avoiding alcohol completely (Park et al., 2011). Certain studies have also suggested that even moderate alcohol intake could increase cancer risk, particularly for women (Allen et al, 2009) which has led to certain countries to reconsider alcohol guidelines. In fact, a substantial amount of scientific evidence is available on the topic of alcohol and cancer risk or cancer development per se. Some recent examples are the studies conducted by Beulens et al. (2012); Schütze et al. (2011); Pukkala et al. (2009); Gonzalez & Riboli (2006); Sieri et al. (2002). Those researches describe in detail how alcohol consumption may have an impact on development of certain tumours taking into account other factors such as for instance profession, diet, oral hygiene or tobacco use to cite a few. Evidence in the field appears overwhelming and European and worldwide research support similar findings.

Nevertheless, it would seem as if this information had not been incorporated or assumed by society, in contrast to other health risk factors such as tobacco consumption. It could be said that there is a lack of public awareness regarding this particular topic (Eurobarometer, 2010). Despite the amount of information existing on cancer and alcohol consumption, no articles could be identified on the topic of this literature review while using the MESH terms and the specific filters as previously noted.

Although it was not the main focus of this literature review, the fact that alcohol and cancer risk is so prominent for certain types of cancers, we consider that special emphasis should be made on this point (Kaplan & Kilgour, 2015, Berentzen et al., 2014; Scozzianti et al., 2014 ; Sohee et al., 2014 ; Stölzel et al., 2014; Nan et al., 2013; Ferrari et al., 2012 ; Jensen et al., 2012.). Whether sufficient information is available to society or public health messages remain

inefficient, there is a need to raise concern. Further measures should therefore be implemented.

## 6. Alcohol warnings and pregnancy

A number of articles identified focused on alcohol, information and pregnancy. Some examples are research conducted by Foster & Marriott (2006); Gilinsky, Swanson & Power (2011) and Furtwængler & Visser (2013).

A recent review on the way that alcohol warning labels may influence consumption of alcohol during pregnancy (to prevent the foetal alcohol spectrum disorder) identified them as an avenue for changing attitudes (Thomas et al., 2014). The researchers argue however that despite the positive findings and effect that warning labels may have, its effectiveness for actually modifying women's drinking behaviour is incomplete. Previous research has suggested that for maximum effect, alcohol warning labels should declare unmistakably the consequences of alcohol consumption and this should also be coordinated and integrated with other, broader social messaging campaigns that do not seem to be yet in place. The researchers noted that the use of this type of information related to alcohol and pregnancy must be carefully considered and that their messaging would have the most influence on low-risk drinkers.

The researchers insisted on the fact that manifold measures would be required to raise societal awareness regarding the risks of drinking in pregnancy, the influence of alcohol consumption by pregnant women, and utterly to improve the quality of support for women with alcohol and related health and social problems.

Nevertheless, despite the relevant findings by Thomas et al (2014) review, alcohol warnings are only limited to information regarding pregnancy which could give the impression that other health risks are not communicated adequately to society or other population groups. Since warning risk seem efficient in the area, it would seem interesting to widen the type of messages with clearer messages as previously stated.

## 7. Alcohol related information and women

Several studies regarding information search on alcohol and women could be identified. Aitkin, Nowak and Garcia (2007) examined gender differences in information search procedures and selection criteria relative to purchase situation and social and financial risk aversion. Using an online questionnaire, results suggested that women are more apt than men to seek information from store personnel, servers or others. Labels and shelf tags were more appealing for women than for men. This study focused mostly on wine consumers and retailing implications rather than on warning labels or information related to health cautionary messages. The authors of the study noted that since women seem to buy an 80% of the wine sold in the US and that similar figures would be expected in other countries,

retailers should be able to understand female preferences and how to assist them more efficiently so that purchase decisions can be maximized. Special emphasis is made on the attention that marketers should pay in order to develop strategies to increase wine sales. Aitkin, Nowak and Garcia (2007) do not mention at any time health messages or risk assessment but how to target customers' female choices to ensure alcohol brands' success.

## **8. Voluntary information on alcoholic beverages (alcohol and other industries initiatives)**

A report by International Centre for Alcohol Policies (ICAP) produced in 2008 suggested that consumer information about beverage alcohol consisted normally of two elements: factual information related to the beverage and directional information including advice and recommendations about drinking patterns, levels, behaviour and practices. Nevertheless, ICAP report focuses only on factual information and how so far was provided. It entitles a high level of variation based on a "voluntary" basis provision and equally due to different norms across governments, and other factors that may hinder the dissemination of that information. Even when the report notes that factual information on beverage can help consumers with decisions to facilitate safer choices, so far measures fail to be in place. Nutritional facts or potentially problematic substances contained in the drinks should be listed as in other foods to empower consumer choices. ICAPs report makes reference to other information they consider should be included although it is not necessarily linked to safety issues, but to keep the quality of their product. A key point is that the report notes the need to inform consumers so that they can modulate their decisions regarding alcohol intake and indeed, it refers to relevant aspect such as the definition of standard drinks of units that apply in different countries. Despite this point made by ICAP and while supported by a review of 43 nations labelling regulation, a difficulty arises when noting alcohol related risk.

Despite the fact that ICAPs report notes that information regarding beverage alcohol includes a range of information specific to particular beverages (either enforced or voluntary), still manufactures do not always provide such information. From a public health standpoint, sharing details about products enables consumers to make informed choices and should serve as a starting point for further alcohol policy improvements.

To date, the variability and real heterogeneity of minimal information being so far distributed, prevents the actual responsible and informed choice and therefore, further measures should. Due to the lack of legislation<sup>1</sup>, it is up to the producers to decide what is on the label and there is some concern regarding the messages being communicated to the consumer, for instance the widely used: "drink responsibly" slogans.

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<sup>1</sup> In relation to health specific aspects of alcohol (i.e. calories, alcohol during pregnancy) for all alcohol products. Wine labels are regulated at the EU level but the legislation serves mainly the producers to protect geographical indications of origin, it does not provide health related information to consumer.

Concern exists regarding certain studies funded by the industry, which may compromise or hinder a real evaluation of the real scenario (Adams, 2007). Adams speaks of moral jeopardy, in particular when referring to alcohol, tobacco, gambling and other dangerous consumption industries and the fact that at times risks may vary considerably when involvement of the industry occurs. Many voices have also highlighted challenges when industry is involved, as for instance O'Brien (2013) who cited as an example the Australian case refusal to provide graphic warnings on alcohol containers when they were exported to Thailand. His detailed account of the arguments pro and against this action would suggest that the Australian's actions suggested more protection to the alcohol industry while at the expense of Thai public health. When discussing alcohol related risks, Adams (2007) insists that understatement or bipolar positions may discourage reflection and discussion regarding ethical and moral issues in this field. Without demonizing the industry, care should be paid when describing facts on alcohol related health risks to provide an accurate, unbiased and honest description of the dangers of alcohol intake. It should not be forgotten that the main interest is ultimately that of the individual and society at large.

## 9. Miscellaneous

A number of other researches were identified by this literature review, however those could not be described in detail due to the variability of related content to the topic explored. Aspects such as mental disorders, sexual risk behavior, obesity, tobacco among others were recurrent topics explored by the literature in this review. Due to the word limits, materials were not discussed in detail, but are cited in the reference list.

## 10. Raising awareness

The Eurobarometer noted already in 2010 that almost 80% of the vast majority of the EU population would favour alcohol labels warnings. An 83% of EU population would support warning messages on alcohol advertisements. Those messages are traditionally directed towards pregnant women and drivers, however as seen throughout this paper, the scientific literature emphasises the need for extending this message to other relevant segments, such as minors, dependence issues, mental health and cancer prevention among many others (Eurocare, 2014).

Labelling and health warnings have been also examined by literature, pointing out the variety of presentation across countries which may not always facilitate its understanding (Lowe et al., (2013); Martin-Moreno et al. (2013b); O'Brien, P. (2013); Baglione et al., (2012); Campos et al., 2011; Grunert et al., 2011; France & Fitzgerald (2005)).

At times, messages are provided in small and unfriendly presentations, which raise concern regarding the efficacy of the informative message. Effective health information labels should ideally include four messages (Eurocare, 2014) all of them targeting different purposes:

attention, identification of the problem, potential consequences and actions to avoid hazard. The design and position of the health message have also been largely discussed (Boyle et al, 2013, Bates & Alison Lennox, 2009, Dennis et al, 2009) with clear implications towards its visibility and expected effect.

Public health authorities have largely emphasized the dangers of alcohol consumption. It has been suggested that health labels have equally prompted discussions (Stockwell, 2006) across countries on awareness and dangers associated to alcohol consumption. This would encourage public support for alcohol health labelling, particularly in the US but also across Europe and worldwide.

It should be noted that nowadays consumers are willing to receive information regarding alcohol in their bottles, but individuals are increasingly making informed choices about dietary choices with particular care towards allergens, composition, sugar or caloric content to cite a few. It could therefore be argued, that beverages should equally display a thorough nutrition facts to clarify consumers' decision of alcohol consumption as most food products do<sup>2</sup>.

Beverage labelling should be considered as a tool to allow consumers' informed choices by clearly displaying information regarding a variety of aspects that are related to individuals' health. The type of data that labels should contain, its presentation and regulation should be clearly and straightforwardly defined so that truthful information is provided to individuals. Consumers are entitled to this information and public health institutions and governments should support those initiatives in order to protect consumers, particularly younger populations and those at risk.

One could argue that Standard Drinks' (SD) related messages should be expected to be present in beverages labelling. However, many authors have pointed out the difficulties that the concept of SD may present to lay public. Kerr and Stockwell (2013) highlighted that numerous definitions that SDs may differ across countries, noting the fact that in certain cases, the latter may contain less alcohol than the actual drinks. Consequently, consumers face difficulties in order to defining and pouring actual SDs. Although SDs has been defined as an effective strategy to enable consumers to truly measure their intake, it remains underused (Martin-Moreno et al. 2013). The lack of understanding of the global concept by the public clearly compromises its effectiveness. Therefore, the need for clarification of the SD concept and dissemination of the same is highlighted.

This review of the literature has pointed out some of the difficulties that consumers may face to recognise the SD concept and the need for it to be clarified and ultimately disseminated in suitable and wide reaching ways to the public. In addition, the need for beverages to display nutritional facts which inform and advice individuals of their contents has also been noted. Nevertheless, consumers' opinion in the field is in many cases is still to be heard. This is particularly relevant for consumers' needs regarding alcohol risk communication,

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<sup>2</sup> The EU Regulation 1169/2011 on the provision of food information to consumers has made exempted alcoholic beverages (containing more than 1.2% by volume) from the obligation to provide information to consumers- they do not have to list their ingredients or provide nutritional information.

expectations, requirements and how to empower individuals to make healthy choices. Further research needs to be carried out in this area in order to identify the actual individuals' needs and to design efficient strategies that are valuable for the public.

## Conclusions

Despite the overwhelming evidence regarding alcohol related damage, and the rumbling concern expressed by several countries, alcohol consumption seems to be increasing in certain groups (WHO, 2013).

This review of the scientific literature could not identify specific actions which explored consumers' information needs regarding alcohol in general or health related alcohol risks in particular. We can therefore conclude that there is a lack of evidence in this field, and although firmer methods of market control, or specific policies regarding alcohol use are required, in this context the opinion of the consumers' should be heard and quantified.

The fact that alcohol has been present in the human diet since 6000 B.C. and that cities in Mesopotamia, Asia, Egypt and the Greek or Roman civilizations have documented its production, does not mean that alcohol is exempt from health related risks, neither that the latter should not be identified.

It would seem logical that information should be actively provided to consumers. In the era of communications and when information is easily available it seems a contradiction to prevent this information to be widely distributed for instance on the container that the consumer will drink. Individuals have the right to know the risks they take while consuming alcohol. Therefore, genuine information should be made available plainly so that informed decisions on whether "to drink or not to drink" is an informed decision. Even though information itself may not cause behaviour change, encouraging individuals to use the information provided (when that is the case as in other foods) may help them to become more aware of what they consciously consume. The scientific evidence presented in this paper seems to support the incorporation of a list of ingredients, nutritional information, calorie content and particularly, health warnings on labels of alcoholic beverages.

## Limitations

This review was not a systematic account of the whole existing scientific evidence on the selected topic, and therefore no categorical recommendations can be extrapolated. This review had very specific limits in terms of search and focused on peer reviewed material on the subject without a particular time frame. It could be the case that certain relevant materials have been omitted and therefore interesting materials may be absent in the thematic analysis.

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