



Using photovoice to generate policy recommendations to improve the alcohol urban environment: A participatory action research project

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ABSTRACT

The place where we live, work and play may influence our alcohol drinking behaviours. This study aimed to present local policy recommendations on urban determinants for alcohol consumption prevention in a low-income and a high-income area of Madrid (Spain) using a participatory action research method, with photovoice and nominal group techniques. Participants ($n = 26$) engaged in a photovoice project initiated a process of critical reflection by discussing and analysing their alcohol environment based on photographs they took themselves. At the end of six week group discussion sessions, participants identified 33 themes related to their alcohol environment. They later met to translate the final categories into urban policy recommendations using a logical framework approach. Then, with a nominal group, they prioritized these recommendations based on time, impact, feasibility, and cost. Finally, participants produced a total of 61 policy recommendations for the improvement of the alcohol environment, highlighting the need for researcher-community collaborations when designing public health interventions.

1. Introduction

Alcohol is the world's most consumed psychoactive substance. Its use was related to 5.3% of global deaths and 5.1% of the global burden of disease in 2016 (Griswold et al., 2018a; World Health Organization, 2018). This evidence makes alcohol a major health risk factor among 15- to 29-year-olds (Griswold et al., 2018b). Besides its health costs, alcohol causes heavy economic and social costs (European Alcohol Policy Alliance, 2014).

Moreover, the role of the social, urban, and cultural environment in shaping health results and health-related behavioral risk factors has been the focus of particular interest in recent years (Glenn et al., 2020; Pearce et al., 2011). The influence of social and urban environment on alcohol consumption and alcohol related problems has also been proved (Bryden et al., 2012).

Thus, social and spacial inequalities in alcohol consumption have

been documented (Barr et al., 2018; Caryl et al., 2022; Martín-Turrero et al., 2022) with harmful alcohol consumption being higher in low socio-economic status areas (Sherk et al., 2018). In addition to the social context, it is important to note that certain features of the urban physical environment have associated with alcohol consumption. Among the urban environment factors, a greater offer and availability of alcoholic drinks (e.g., density of on- and off-alcohol premises, opening times and days) is related to the amounts, patterns, and consequences of inhabitants' alcohol consumption (Popova et al., 2009; Villalbí et al., 2014a, b). Moreover, a greater density of alcohol outlets entails greater market competition, which leads to lower alcohol prices, favoring consumption (Livingston et al., 2007). A further contextual factor favoring alcohol consumption and normalization is marketing and advertising (Villalbí et al., 2014a, b). Previous studies focusing on the influence of alcohol advertising in the community and found a correlation between the presence of advertising in on- and off-alcohol premises and

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introduction to drinking, particularly in teenagers (Bryden et al., 2012a; Ellickson et al., 2005; Hurtz et al., 2007). Lastly, the visibility of alcohol consumption in public spaces may be contributing to the normalization of drinking, particularly among young people. The presence of such elements in public spaces has sometimes been used as an indicator of a given area's deprivation (Hastings et al., 2015). Interventions on these urban determinants have been shown to be the most efficient in reducing alcohol consumption (Anderson et al., 2009; Bosque-Prous et al., 2015). Some examples of these intervention are the implementation of restrictions on alcohol availability (such as establishing minimum distances between schools and alcohol outlets or limiting the number of outlets per inhabitant in neighbourhoods) or strengthen regulations on the advertising of alcoholic beverages in public spaces (including the promotion of alcohol associated to on- and off-alcohol outlets) (Burton et al., 2017; Martín-Turrero et al., 2022; Villalbí et al., 2014a, b; 2019a, b).

Preventive strategies targeting high-risk individuals have traditionally showed modest results, calling for a paradigm shift that addresses the social determinants of alcohol consumption. In this context, there has been significant interest in using environmental and policy approaches to prevent this alcohol consumption (Cronce and Larimer, 2011). The World Health Organization (WHO) currently proposes as "best buys" (measures that are most cost-effective and feasible for implementation) increasing excise taxes on alcoholic beverages, as well as enacting and enforcing bans or comprehensive restrictions on exposure to alcohol advertising (across multiple types of media), and restrictions on the physical availability of retailed alcohol (via reduced hours and points of sale) (WHO, 2017).

The neighbourhoods where we live represent a unique opportunity for these environmental and policy-based prevention approaches. These approaches have driven researchers and policy-makers to ask whether improving a neighbourhood's characteristics can help reduce health inequalities (Brownson et al., 2006; Subica et al., 2016).

However, implementing significant policy and environmental change is challenging. It requires the participation of different sectors and stakeholders, as well as the support of policy-makers, and the community at large (Subica et al., 2016). Moreover, the effectiveness of interventions depends on complex interactions between the demographic, social and economic background of the target population. It is therefore key to include communities as a driving force in innovation and science, as is the case in citizen science (Den Broeder et al., 2018).

Studies can include projects implemented by research organizations, but also reliable and objective data obtained directly by citizens (Kosmala et al., 2016). People are extremely familiar with their own contexts and could provide real information about their neighbourhoods and communities. Participatory Action Research (PAR) is an approach to community-based research that emphasizes participation and action (Kemmis and McTaggart, 2005). It is based on reflection, data collection, and actions aimed to improve health and reduce health inequities through involving the people who, in turn, take actions to improve their own health (Baum et al., 2006). PAR implies inclusion and democratic practices to help people investigate their realities to change them. This occurs in our photovoice technique, as a participatory research merges with action (to transform reality) (Anisur Rahman and Fals Borda, 1988). Photovoice creates a partnership between researchers and community members, in which the latter are not involved as research subjects, but as co-researchers who actively engage in the research process (Wang and Burris, 1997). Photovoice is a qualitative research method used in PAR that gathers participant-taken photographs and narratives to translate their experience into knowledge. Specifically, the main goals of photovoice are to enable citizens to record and reflect community strengths and concerns, to promote critical and reflexive group dialogue using photographs, and to promote social change.

With this in mind, the purpose of this study is to present, via a Photovoice project, a community-driven approach to generate local policy recommendations on urban determinants for alcohol

consumption prevention in a low-income and a high-income area of Madrid (Spain).

2. Materials and methods

2.1. Study design and context

We carried out a photovoice project, adding two phases leading to the generation of recommendations (based on the identification of the photovoice) and their prioritization.

In our work, community participants do not share decision making power on the overall focus of the research project, design, or selection of photovoice methodology. However, as Catalani and Minkler (2010) point out, their leadership contributed to key decisions once the project is under way, especially broadening the focus of the research question to include topics that often are beyond the scope of traditional public health research (Catalani and Minkler, 2010).

In PAR, dialogue is central to this process because participants develop their power through valuing their own knowledge and experiences (Rahman and Borda, 1988). This occurred in our project, where participants were empowered and prioritized policy recommendations. The photovoice process has a critical approach because it is informed by different thoughts of critical theory (as emancipation and social transformation) (Bohman, 2021; Mukumbang and van Wyk, 2020). As a PAR method, it seeks to raise people's awareness of the ideological control over their lives, encouraging them to make changes (Tsang, 2020). We also employ it as a strategy to empower participants and bring about social change (in this case, in their neighbourhoods). Thus, we involved participants in all process including photo collection, reflection, discussion, and action, making recommendations that aimed to improve their alcohol urban environment, their health and reduce health inequities.

This project was conducted between 2017 and 2018, in low-income district (LID) of Villaverde, and the high-income district (HID) of Chamberí.

Villaverde is a district in the southeastern part of the city, with a density of 72 inhabitants per hectare and great ethnic diversity (26.6% of foreign-born residents vs. 20.1% in Madrid as a whole). It is a low-income area, where 29.1% of residents have a low educational level and 19.1% are unemployed, compared with 18.1% and 13% in Madrid, respectively. It is one of the areas with the highest excess mortality rates in Madrid (Ayuntamiento de Madrid, 2019).

Meanwhile, Chamberí is a city-center district with a high socio-economic status and a wide range of leisure activities available. Only 7,61% of residents have a low educational level and 6,13% are unemployed. 11,3% are foreign-born residents (Ayuntamiento de Madrid, 2019).

We used a purposive sampling strategy to engage adult participants, who 1) had lived in the neighbourhood for more than a year, 2) spoke Spanish, 3) did not have problems using a digital camera, and 4) agreed to attend five group sessions over one month and a half. Contact with the participants was made via the Social Services Centre in Chamberí and the Municipal Community Health Centre in Villaverde. Our sampling strategy allows for selection of information-rich cases for the most effective use of limited resources (Palinkas et al., 2015) and most likely to yield appropriate and useful information. All the eligible residents agreeing to participate completed written informed consents, image release forms, and a survey about demographic information. In total, there were 13 participants in Villaverde (7 women and 6 men) and 13 participants in Chamberí (7 women and 6 men).

We conducted a first session with participants in each district to introduce the photovoice methodology to the participants and to train them on processes of action-reflection in participatory research. Four Photovoice groups were formed, two in each district, divided between men and women to facilitate the discourses and ensuring a gender perspective in the results. Participants captured images related to their

alcohol environment; then, they collectively discussed the content and meaning of their photographs; and finally, they identified emerging themes describing their alcohol environment. Each photovoice group met for at least five sessions to discuss photographs taken during the previous week. Every group session was audio-recorded and transcribed. After these sessions, we conducted a combined meeting of women and men together in each district to exchange participants' experiences of the project and to select the emerging themes defining the role played by alcohol in their district. The results obtained in these sessions regarding residents' perceptions of their alcohol urban environments have been published elsewhere (Molina-de la Fuente et al., 2021).

After the Photovoice project were completed, participants were asked to translate these emerging themes into a set of policy recommendations to improve their alcohol environments. In this paper, we present these policy recommendations. Specifically, the photographs were discussed by participants, who, through critical dialogue, identified policy recommendations to improve this environment, and thus, prevent alcohol drinking behaviours.

This study was conducted in accordance with the ethical principles established by the 1964 Declaration of Helsinki and its subsequent amendments and clarifications. The projects to which this research belongs were evaluated and approved by the Research Ethics Committee of the University of Alcalá (CEI/HU/2017/09). An information sheet and informed consent form was provided to all participants. Anonymisation and safekeeping of primary sources of information ensure confidentiality and data protection. Regarding the permission of people being photographed, it is legal to provide graphic information about an event or public occurrence in the street when the image of a person appears as merely accessory. However, the faces of people's photographed have been pixelated to maintain anonymity (Hannes and Parylo, 2014).

2.2. Participatory prioritization process

Asking participants to translate their research findings (emerging themes of photovoice process) into a set of policy recommendations was a very complex process. However, as we have described above, we believe that the PAR must involve the protagonists in the entire process.

The participatory process for arriving at a set of specific policy recommendations included several phases. First, participants formulated initiatives derived from their research findings of the Photovoice process; and second, they prioritized their policies and agreed upon a limited number of shared policy recommendations.

2.2.1. Phase 1: identification of alcohol policy recommendations

Emerging themes describing participant's alcohol urban environments resulting from the Photovoice sessions included the socializing role of alcohol, alcohol accessibility and advertising, underage alcohol exposure, use of public spaces for alcohol consumption, alcoholism, and alcohol consumption variations by social groups (including differences by gender and immigration status) (Molina-de la Fuente et al., 2021).

We used these six themes defined by the participants to build an initial "problem tree" (AusAID, 2005), something similar to a "mind map". It is called "problem tree" because its function is to later transform it into a solution tree (in our case, these solutions would be the policy recommendations). This process is part of the logical framework approach (LFA) (World Bank, 1997).

We adopted a LFA for intervention planning to translate the participants' research findings into concrete policy recommendations (Díez et al., 2018; Sandín Vázquez, 2014). This LFA is designed to describe community needs and conditions, identify problems and desired improvements, and develop strategies to address them. At first, two separate problem trees were made (one by men and one by women). Later, in a joint session, a common problem tree was agreed upon. Participants converted the topics included in the problem tree (e.g., 'lack of alcohol consumption information in the population') into solutions, expressed as policy recommendations to solve the problem (e.g., 'improved health

education from childhood'). They were then asked to formulate a policy recommendation for each topic included in the problem tree. Thus, each district obtained a list of policy recommendations coming from the problems identified in their district.

2.2.2. Phase 2: prioritizing policy recommendations for the improvement of the alcohol environment

We used the Nominal Group Technique (NGT) (McMillan et al., 2016) to prioritize the policy recommendations, by scoring each one according to the following criteria: the time and the cost of carrying out the recommendation, how many people will benefit (impact), and feasibility. Each participant assigned a score (from 0 to 10) to each recommendation with 0 points being the lowest score (long implementation time, high cost, few people benefiting, and impractical) and 10 being the highest (short implementation time, low cost, many people benefiting and highly viable). We calculated the average score to obtain a ranked set of policy recommendations and selected the top 10 in each district.

3. Results

In this section, we first set out the results of phase 1, which includes the complete set of recommendations identified by the participants during the Photovoice process in both district (Villaverde as LID and Chamberí as HID); and second, we explain the final set of urban policy recommendations for improvement of the alcohol urban environment derived from the prioritization process.

3.1. Urban policy recommendations for the alcohol environment improvement

The participants identified a list of 33 (LID, Villaverde) and 28 (HID, Chamberí) recommendations to improve their alcohol environments. Some of the recommendations coincided in both districts. Appendix 1 (Supplementary data) contains all the policy recommendations that emerged from the data representing the district residents' perspectives, organized in related categories. These categories are the most general recommendations that appeared in the problem tree and were later developed into specific recommendations.

Some recommendations common to both districts were put forward concerning the development of education plans to create healthy lifestyles from an early age, public information for the general population (health education), the improvement of alcoholism rehabilitation programs, support for law enforcement, more alternative leisure projects for young people, the banning of advertising, and the reinvestment of alcohol tax revenues on preventive actions.

There were also district-specific recommendations. In the LID, these concerns reflected different aspects of alcohol environment. First, participants proposed recommendations linked to the presence of alcohol waste, encouraging residents to pick up the trash through economic incentives and requiring the owners of alcohol-selling stores and drinking establishments to clean the street area outside their premises. Second, they described the need of increase awareness on the role of civic participation in preventing alcohol consumption. Also, they expressed the relevance to reduce the presence of alcohol during leisure time, to control the relationship between gambling and alcohol and to support alcohol-free establishments. And finally, they suggested encouraging the media to speak out against alcohol-related problems in the district.

Recommendations in the HID were more focused on developing new legislation to restrict the sale and consumption of alcohol (including three recommendations on banning or restricting alcohol advertising), as well as the regulation of physical spaces and access to them.

3.2. Prioritized recommendations

Table 1 contains the 10 policy recommendations that emerged from prioritization in LID. Table 2 contains the same results for HID. Both tables are illustrated with photographs taken as part of photovoice the process.

Recommendations concerning the improving of the public treatment programmes for alcohol abuse were assigned the highest scores in both districts. LID produced recommendations of a more preventive character (e.g., 3, 4, 5, 6 and 7 in Table 1), whereas in HID they were more punitive (e.g., 4, 5, 6, 8, 10 in Table 2).

In terms of the general topics covered, recommendations on public information and civic education to promote healthy lifestyle (7, 3, 31, 1 and 6 in LID and 2 in HID) were given the highest priority. These included the introduction of education plans in schools, preventive campaigns in health care centres, and the design of materials for family health education.

4. Discussion

This study shows that PAR research provides a valuable tool for designing policies to improve the urban alcohol environment by engaging the local residents. This method takes on board their concerns, needs and priorities. The residents of Villaverde (LID) and Chamberí (HID) put forward general suggestions to improve their alcohol environment, which they subsequently prioritized. This produced 10 recommendations that were highly specific to their respective districts and therefore highly valuable for the purposes of improving their local alcohol environment. Citizen science provides positive results for scientists, policy-makers, and communities (Socientize Project, 2013). These participatory action processes link up with local contexts and can promote the appropriate level of citizen engagement, and facilitate stakeholder commitment (Den Broeder et al., 2018; Rubio et al., 2021; Takano and Nakamura, 2004).

We believe that this approach, in which citizens are the protagonists of the entire process, can help identify real problems at the local level and propose solutions for public health policies at the global level. Citizens are the ones who best identify urban exposures affecting their health, and best understand them in their own context. Their participation in the entire process, including the prioritization of the results and the proposal of future solutions through policy recommendations, empowered themselves in the three dimensions: 1) participants acquired new knowledge and developed critical awareness of their community; 2) participants transformed their self-perception thanks to the social recognition they received; and 3) participants are allowed via the project to expand their social networks and to build new links with different actors (research partners, local decision makers, media and the wider public) (Budig, 2018).

Residents' recommendations touch on aspects that have been proved to prevent alcohol consumption in previous studies. Recommendations on promoting public information and civic education, tackling alcoholism in the district, and preventing underage drinking, are all examples of resident's sentiments. Another significant share of the recommendations sought to reduce alcohol exposure in the urban environment. Here, participants prioritized cutting alcohol consumption in public spaces and reducing alcohol promotion. There is evidence in this regard that a ban on alcohol advertising, promotion and sponsorship is one of the most effective ways to reduce alcohol consumption (Bosque-Prous et al., 2014). The findings on perceptions of the alcohol environment obtained in the same Photovoice study recently published (Molina-de la Fuente et al., 2021) showed that participants believed that high exposure to alcohol advertising in their districts is a further facilitator of alcohol consumption and acceptance in this population, an association that has already been observed in other studies (Esser and Jernigan, 2018; Westberg et al., 2018). Spanish national law prohibits television advertising of high-percentage alcohol drinks, and some

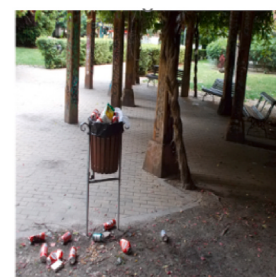
Table 1

Recommendation prioritization in LID (photographs associated with the recommendations taken by LID residents in the photovoice process).

1. Increase grants to associations for the rehabilitation of alcoholic and alcohol-addicted persons (there are some in the district, but they have insufficient funding).



2. Install a money-for-recycling machine in Villaverde.



3. Provide more information/knowledge about what alcoholism involves, as well as on alcohol units consumed and their associated risks.



4. Expand the workforce of addiction prevention and health promotion services working in the district, to reach the largest possible number of schools.



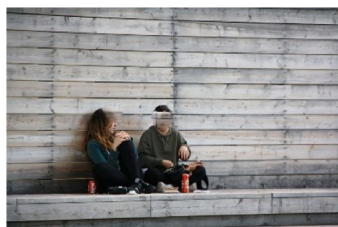
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Table 1 (continued)

5. More prevention campaigns by primary health care centres.



6. Education plans in primary and secondary schools, giving away merchandise (e.g., badges) to focus attention on messages aimed at preventing alcohol consumption.



7. Design guides specifically aimed at parents on strategies for the prevention and management of their children's alcohol consumption.



8. Support the sale of healthy drinks in the district's sports centres and soccer grounds.



9. Set up dedicated spaces for teenagers in culture centres and other neighbourhood locations where they can socialize and engage in free-of-cost no-alcohol activities (focusing on teenagers' tastes and needs).



Table 1 (continued)

10. Ban the sale of alcohol inside gambling establishments.



regional governments also impose a ban on advertising in public spaces. Nevertheless, pressure from the alcohol industry is evident, and a number of mechanisms are used to circumvent legal restrictions. These include advertising allegedly based on sponsorship, advertising of low-alcohol drinks (which have hardly any market share but have the same brand and image as other high-alcohol drinks), and discounts and promotions in on- and off-premise alcohol outlets (Pastor et al., 2022; Villalbí et al., 2014a, b). Unsurprisingly, therefore, some of the recommendations prioritized by the participants include regulating aspects that are already subject to regulation, which suggests that either the current legislation is not being observed or that it is falling short.

In Spain, the sale of alcohol is limited to certain times and places, and it is completely banned to people under 18 years. But Spain's taxation of alcoholic beverages is among the lowest in Europe (Blecher et al., 2018). Moreover, previous studies carried out in the cities of Madrid and Barcelona found a higher density of establishments in which to buy or consume alcohol than in other European countries (Sureda et al., 2017a, b; Villalbí et al., 2019). Yet, even though the topic of the high availability and accessibility of alcohol was included among the results of the Photovoice study (Molina-de la Fuente et al., 2021), participants barely produced any recommendations on this issue. This may be connected with the results of this project, which indicate that participants perceive alcohol as having a socializing role and bars being a meeting point for socialization. The fact that there are no recommendations for improving this aspect in the districts is indicative of alcohol's high degree of normalization. This normalization is linked to urban residents' constant exposure to a wide range of alcohol products, advertising and promotion, and to the visibility of alcohol consumption (Sureda et al., 2017a, b). It may be necessary to consider new approaches to the issue of alcohol availability and accessibility, given that it clearly influences consumption but the general population (in this case, residents of two widely different districts in terms of socio-economic status) do not view it as a problem necessitating recommendations for improvement. Yet both groups of residents were very concerned with the need to make alcohol-free leisure accessible, and many of their recommendations seek to limit children's and teenagers' exposure to alcohol, which is an opportunity for future health promotion campaigns. In Spain, the 2019 Survey on Drug Use in Secondary Education (ESTUDES) identified alcohol as the most commonly consumed substance among students aged between 14 and 18. The average age to start drinking is 14 (Ministry of health, 2021). Alcohol consumption among young people is a key public health problem that needs to be addressed (Llull et al., 2021), and the community identifies it as such.

It is worth noting the way in which the participants select and prioritize their recommendations. For example, both districts put forward numerous recommendations on consumption in public spaces and the litter generated by such consumption (even in HID, where hardly any litter was found) (Pastor et al., 2020). This would suggest that it is easier to focus the seriousness of the problem on what is considered more "extreme" and/or visible (i.e., alcoholism and dirty streets) than on what is "normalized", i.e., accessibility in bars, even though normalization is far more influential on the population's drinking habits. Signs of consumption can alter drinking patterns and perceptions through different

Table 2

Recommendation prioritization in HID (photographs associated with the recommendations taken by HID residents in the photovoice process).

1. Provide specialized assistance to alcoholics (both homeless people and neighbours) with public resources.



2. Consider more prevention programs for alcoholism (directly to homeless people and from primary health care centres).



3. Create more sports activities promotion (giving free use of neighbourhood sports centres or school playgrounds).



4. Establish effective “social” sanctions (collect bottle waste, etc.) to comply with the law on alcohol consumption on public roads and reduce the garbage associated with such consumption.



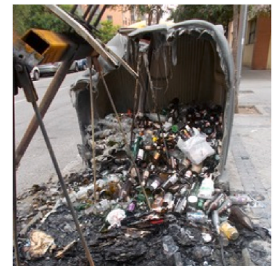
mechanisms. First, more litter has been detected in the surroundings of stores selling alcohol (off-premise), indicating that this is a less costly way to consume alcohol, thus increasing accessibility. Second, the

Table 2 (continued)

5. Control the space occupied by the public thoroughfare by the furniture of the bars for the consumption of alcohol (terraces, barrels, etc ...). For example, controlling if the terraces are taking up more space than they have permission to in the public thoroughfare, or being more restrictive with what they can occupy under current law.



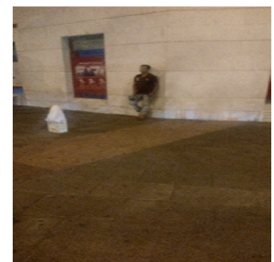
6. Have greater police control at peak hours in specific/conflictive places (for example at bars closing hours) to avoid noise and the accumulation of rubbish associated with alcohol consumption.



7. Provide health education related to alcohol in educational centres, to teach students to consume alcohol in a respectful manner towards others.



8. Control illegal sales on the street and/or in shops, increasing surveillance (for example with undercover police, or security guards specialized in alcohol).



9. Promote alternative leisure programs to reduce alcohol consumption (for example, more cultural offer).



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Table 2 (continued)

10. Apply alcohol consumption regulations on public roads with more vigilance and sanctions.



containers in which alcohol is consumed display brands and colourful designs that draw the attention of passersby, not only inside the store but also when the container is left in the street as litter (silent salesman). This part of alcohol exposure is not normalized, and it is perceived as negative. Alcohol consumption in the street is connected with littering, noise and conflict with local residents. As a result, this kind of exposure is linked to deprivation of the areas affected and thus perceived as “a problem that needs solving” when making recommendations. It should be noted that recommendations against street drinking and alcohol-related littering were also carried out in HID, although they were rare in this district. This indicates that exposure to signs of consumption is perceived as extremely negative (associated with deprivation) even when exposure is low.

Previous studies have described that the social conditions of the area modify the distribution of the elements associated with alcohol environment. The unequal distribution of alcohol availability, the amount of promotion, and the presence of signs of alcohol consumption promotes different beliefs around alcohol consumption. A prior study reveals that residents from Villaverde (LID) described the signs of alcohol consumption as a fundamental part of their environment. On the other hand, residents from Chamberí (HID) described alcohol consumption at the street as an activity carried out by people from outside the neighbourhood, with discourses strongly linked to loneliness and ostracism (Molina-de la Fuente et al., 2021). These conditions may promote the different approaches found in our results.

The recommendations differ in their approaches depending on the socio-economic status (SES) of the neighbourhood. In Villaverde, the district characterized as LID, the recommendations aim to prevent problems before they appear, whereas residents of Chamberí (HID) promote more recommendations focused on the increase of control and law enforcement. Villaverde’s capability for pre-emptive analysis and engagement to fend off oncoming problems for the residents may be explained by this LID’s long history of activism and involvement in community networks. A previous study (Pastor et al., 2020) identified differences in the makeup of urban environments that may result in differences in the recommendations selected. Thus, greater exposure to signs of consumption was detected in LID. This may be linked to the fact that this is a residential area, where on-premise drinking is less prevalent and there is more off-premise street drinking. The negative effects of this aspect of the alcohol environment, which were described above, encourage recommendations in relation to correcting this problem. In HID, a high degree of exposure to advertising was identified. This large prevalence of advertising may be linked to the district’s high density of alcohol consumption establishments, which stems from its own nature as a renowned strategic leisure destination for young people in Madrid. Accordingly, the focus was more on controlling advertising and providing healthier leisure activities free of alcohol.

This SES inequality approach can help understand how these elements of the urban alcohol environment may affect consumption by individual population groups, and even provide insight into the harm

alcohol paradox, whereby people of low SES tend to experience greater alcohol-related harm than those of high SES. It is clear that substantial variability in alcohol-related harms between different SES groups cannot be explained by drinking patterns alone. This means that contextual, social and cultural factors must be taken into account, all of which have an influence on how the problem is viewed and, therefore, on the prioritization of recommendations. As Krieger suggests, poverty is not an element of confusion in epidemiological research, but rather “many of the exposures epidemiologists are interested in coexist and are jointly embodied – not because they are causally connected, per se, but because they are entangled by the ways people actually live in their societal context, replete with constraints as well as possibilities” (Krieger, 2007). A deep look of this issue should be addressed in future studies.

Our findings show that, according to Villaverde and Chamberí residents, recommendations to improve their alcohol environment focus on a variety of levels, from the very specific (e.g. helping alcoholics), to the comprehensive (e.g. implementing legislation and/or public policies), and everything in between, such as improving the environment (free use of sports centres and school playgrounds) and social mobilization (recommendations on education and awareness). This is connected with the eco-social approach in population health promotion, recognizing the interactions between the ecological and social determinants of health (Hancock, 2015). It has profound implications for the practice of public health, as the more levels are targeted by interventions, the more effective and efficient they will be.

Our project had several weaknesses worth acknowledging. The primary limitation of the study is external validity. These specific recommendations may not be applicable to other districts, as aspects including local context, social norms and culture, must all be taken into account. However, the process through which they were obtained can be generalized and replicated to produce recommendations in other contexts. Thus, recommendation generated by participants should be taken into account by stakeholders at a local level to implement suitable interventions according to the needs and priorities in each district. In fact, participants in the LID had the opportunity to meet with stakeholders in their district to discuss their recommendations. However, this meeting has not been possible yet in the HID. We are in process of generating a report for stakeholders including all the recommendations proposed by participants. On a methodological level, both the logical framework approach and the nominal group approach seem valid processes for identifying and prioritizing recommendations, as previous papers have shown (Díez et al., 2018; Jain et al., 2020). In addition, use of two districts was a strength as allowed for the identification of issues related to alcohol according across the SES ladder.

5. Conclusion

Our study addressed the process to prioritize policy recommendations on alcohol consumption prevention in LID and HID of Madrid. The study used a participatory approach analyzing the perceptions and experiences of residents in both districts. The findings show that community involvement and a citizen science approach are valuable tools for developing suitable place-based interventions to improve the alcohol environment. In the framework used by Den Broeder (Den Broeder et al., 2018), citizen science can inform local policy-makers about residents’ perceptions and views, and provide access to lay knowledge. Residents may thus be enabled to address residents’ concerns and empowered to strike a balance between such concerns and other priorities, including health. This approach requires a shift in focus in the way science and public health interventions are developed, from “projects for the people” to “projects by the people” (King et al., 2016). We believe the effort and commitment shown by these two communities, which is embodied in their recommendations, should be reflected in the solutions proposed for their districts by local politicians, to ultimately improve their alcohol environments.

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Ethical approval

We conducted this study in accordance with the Declaration of Helsinki, and received ethical approval by the Ethics Committee of the Universidad de Alcalá (CEI/HU/2017/09).

Author contributions

M.S.V and X.S. conceive the original idea. M.S.V, A.P., I.M., P.C., and X.S. conducted the Photovoice sessions. M.S.V. and A.P. conducted the Nominal Group Technique. M.S.V. and A.P. reviewed the scores of the Nominal Group Technique and prepared and interpreted the results obtained by the participants. M.S.V. and X.S. drafted the manuscript. All authors contributed substantially to the manuscript review and approved its final version. M.S.V. and X.S. are the guarantors.

Declaration of competing interest

None.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.healthplace.2023.103131>.

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