



RESEARCH ARTICLE

‘A drop of water in the pool’: information and engagement of linguistic communities around a municipal pesticide bylaw to protect the public’s health

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The Multicultural Yard Health and Environment Project (MYHEP) used Toronto’s Pesticide Bylaw roll-out process to examine how culturally specific perceptions and practices might influence the relevance of municipal public health information and community engagement strategies and the effectiveness of health protection initiatives. In Canada, and particularly in Toronto, such information is needed for governments to effectively engage with increasingly diverse populations. Focus groups and individual interviews were conducted with Spanish- and Cantonese-speaking participants to document opinions about pesticide use and regulation and views on municipal information and engagement strategies. MYHEP participants reported a need for more accessible environmental health messaging. There was confusion over the safety and legality of pesticide products available for sale in Toronto stores. Most participants indicated they were unwilling to make formal complaints about neighbours who were not complying with the bylaw (an important mechanism for enforcement). Results indicate that environmental health communication and engagement strategies need to be more carefully tailored to address local sociocultural and linguistic contexts in order to provide more equitable environmental health protection and promotion for all residents. These findings led Toronto Public Health to adapt its efforts so as to better engage communities regarding environmental health.

Keywords: environmental health; community engagement; risk communication; pesticides; environmental equity; participation

Introduction

Community engagement and participation are understood by policymakers as ways to actively involve citizens and give them more power in environmental

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decision-making processes (Masuda *et al.* 2008). The discourse of community participation is likewise very prominent in relation to policies or programs connected to health (Martin 2008). Active participation is fundamental to health promotion. The World Health Organization (1986) defines health promotion as ‘the process of enabling people to increase control over, and to improve, their health’ (p. 1); this in turn demands that people are intimately engaged in this process of being enabled. Despite important differences among models of health promotion, the idea of ‘empowering’ communities to better their circumstances is a consistent theme in defining health promotion and its goals (Wallerstein 1992, Laverack and Labonte 2000).

However, community engagement should not be seen as a panacea for improving (environmental) health. Some scholars indeed suggest that particular approaches to ‘participation’ may in fact serve to exclude marginalized groups (Boutelier *et al.* 2000). That is, current models of community engagement may make problematic assumptions about what participation ‘should’ look like and expect individuals to conform to a ‘participatory ideal’ that does not take into account the potential for discrimination and cultural difference (Peterson and Lupton 1996, Wakefield and Poland 2005).

By exploring one particular case study – that of municipal pesticide regulation and enforcement and related risk communication in Toronto, Canada – this article contributes to our understanding of environmental health communication and community engagement concerns in the context of a multicultural city. We contend that the failure to effectively engage with diverse groups could further the uneven allocation of environmental risks within communities in subtle but important ways.

Participation and environmental health protection in the context of diversity

In Canada, Toronto is a hub of immigration; over half (52%) of Toronto’s population are immigrants and 41% of residents report a first language other than English or French (City of Toronto 2009). It is a city that largely defines itself by its ethnic and cultural diversity. Yet, it also remains true that many newcomers to Canada – as well as long-standing minority populations – face multiple and intersecting disadvantages, ranging from barriers to accessing public services (James 1998), housing (Hulchanski 1998) and employment (Hiebert 1999), to covert and overt racism (Henry and Tator 2005). Significant obstacles to open communication between minority communities and government also exist. These include language barriers (Tang 1999), cultural norms that limit engagement (in both communities and government – Burayidi 2003) and a lack of mutual trust grounded in a past history of turbulent relations (Chow 2002).

This article discusses findings from the Multicultural Yard Health and Environment Project (MYHEP), which emerged in part from a desire among environmental health promotion staff of Toronto Public Health (the City of Toronto’s public health department) to understand the perspectives of some of Toronto’s diverse cultural and linguistic groups in order to identify better ways to communicate environmental health information and engage residents in municipal environmental health initiatives. The project used the City of Toronto’s Pesticide Bylaw and the related education and enforcement campaign (Cole *et al.* 2011) as a case study. The bylaw gradually implemented greater restrictions on residential

outdoor pesticide use within Toronto's municipal boundaries. A public complaint–response system was an important method of enforcement (see Toronto Public Health 2007). This case was chosen because of the potentially significant negative health consequences of pesticide exposure (Bassil *et al.* 2007, Sanborn *et al.* 2007) and earlier research suggesting that approaches to lawn and yard care reflect deeply held cultural norms that are socially reinforced (Feagan and Ripmeester 1999, 2001, Jermyn 2005, Hirsch and Baxter 2011). For example, through a survey of 270 Canadian residents each in Halifax, Calgary and London, Hirsch and Baxter (2011) found that although perception of health risk is the best single predictor of differences in municipal pesticide bylaw preferences, social factors such as conflict over chemical pesticides and yard aesthetics (weed free vs. chemical free) are also statistically significant and important predictors (see also Hirsch and Baxter 2009). Furthermore, Toronto Public Health already had some evidence from existing community engagement that different cultures and communities used/saw residential outdoor spaces differently. For example, preferences varied for using outdoor areas for flower gardens, vegetables or lawn; however, the initial Toronto Bylaw information campaigns focused primarily on lawns. These differences and information gaps were a reason we sought to further engage communities through this pilot research.

The MYHEP study aimed to gain insight into how government and public health practitioners might better address environmental health communication and engagement concerns by examining local responses to public health information and outreach. In particular, we sought to examine how specific bylaw enforcement systems were perceived, how they might affect different groups in the city and how effective and equitable they might be in the protection of public health.

Methods

As a one-year project (conducted in 2006), MYHEP gathered qualitative data from members of two of the largest linguistic communities in Toronto: Cantonese and Spanish speakers (City of Toronto 2007). The project was a joint initiative of researchers from two universities and Toronto Public Health, in partnership with community organizations representing Cantonese- and Spanish-speaking communities in Toronto. Toronto Public Health had prior relationships with these organizations through funding partnerships that sought to build capacity for sustained and innovative environmental health education, particularly around the pesticide bylaw, in these communities (Toronto Public Health 2007). Feedback from these partner organizations had identified gaps in the City's approaches to engaging and informing these two communities, prompting the team to focus on these organizations as logical partners for the MYHEP.

During the planning and start-up phases of the project, organizational representatives assisted in reviewing focus group and interview guides as well as organizing and recruiting participants for two focus groups in each community ($n = 21$ in total – see Table 1). Focus groups were carried out first, before individual interviews. Our goal was to have four to eight participants in each focus group – a size that encourages all in the group to participate (Kitzinger 1995, Sim 1998). Organizational representatives advertised the study and recruited eligible focus group participants at their organizations' programs/events; native Spanish or

Table 1. Study participants.

Community	Focus group 1	Focus group 2	In-home interview respondents
Spanish-speaking	5	6	6
Cantonese-speaking	6	4	5

Cantonese speakers who had a garden/outdoor space were eligible to take part in focus groups. A subset of focus group participants was then recruited by the researchers for the follow-up in-home interviews; three additional Spanish speakers were recruited via the researchers' community networks ($n = 11$, five Cantonese and six Spanish speakers). All focus groups and in-home interviews were conducted in the preferred language of participants – almost all in their native language.

Focus group and interview questions included perceptions of community engagement with the City of Toronto, the facilitators and barriers to such engagement, and ways that pesticide reduction should be enacted and enforced. Responses were transcribed and translated into English. The project used grounded theory methodology, wherein researchers analyze their data as it is being collected, allowing their interview questions and theoretical approach to evolve in response to emerging themes in the empirical data (Strauss and Corbin 1998, Charmaz 2006). A question guide was used by the researchers to direct focus group and interview discussions. This guide evolved through the data collection process in response to issues and questions that emerged from early focus groups and interviews. Transcripts were coded using NVivo7 software through an iterative process – team members reviewed and discussed transcripts and together identified key themes. These themes then served as a basis for more focussed, higher level recoding. The quotations included in the following sections were selected to represent typical cases for that theme, unless otherwise noted. Participants are identified by pseudonyms; 'Q' identifies the interviewer/focus group facilitator.

Results

Understanding pesticides and the bylaw

Within both the focus groups and interviews, there was considerable confusion over the meaning of terms such as 'pesticide' and 'fertilizer'. The following excerpt from one Spanish speaker's focus group discussion illustrates this point:

Q: What's your opinion on pesticides?

María: About fertilizer...

Ana: Fertilizer is different than pesticides. Pesticides are for killing things, for infestations; fertilizer is nutrients for the soil.

Rosa: Like manure and that.

María: Ohhh, OK.

Ana: Like natural fertilizer... pesticides are used for killing things...

Rosa: Like ants...

Ana: For weeds as well. Do you use anything like that?

María: *No*.

Rosa: OK, and what do you think about using it? Is it worrying to you?

María: Well I think . . . in order to be able to farm the land, one prepares the soil, so they use fertilizers to kill everything that's there, so that the land is good and able to produce.

Victoria: So fertilizer and pesticide isn't the same thing?

[All]: No.

Ana: . . . Fertilizer adds more minerals.

Q: Yes – so pesticides are for killing either weeds or insects, like with a spray or a powder.

María: For insects I used it for the ants, so that yes, I do use.

There was particular confusion over products that contain both pesticides *and* fertilizers (e.g. 'Weed & Feed'), and participants did not know that such products would be restricted under the new law: "'Weed and Feed" we use more as a fertilizer – I don't know if it's a pesticide officially' (Andrés – Spanish speaker, male, 40+, interview).

Awareness of the existence of the pesticide bylaw among participants was low overall, with 17 of the 24 participants reporting that they had never heard of it before participating in the study. Knowledge levels about the bylaw varied among those six participants who did know about it – only half had a clear idea of how the bylaw worked and to whom it applied. It should be noted that these results cannot be assumed to be particular to the cultural groups under study; although language and other barriers could play a role here, Cole *et al.* (2011) suggest that confusion about pesticides, their use and the implications of the bylaw is not uncommon in Toronto.

Attitudes towards the pesticide bylaw

Although there was confusion over how pesticides are defined, the majority of participants felt that pesticides were indeed a health concern, and all but one were in favour of or neutral about the bylaw.

Notably, there was misunderstanding about whether a bylaw-restricted product could still be purchased in stores. As this excerpt from a Cantonese focus group illustrates, there was often confusion over this issue:

Li: Those chemicals may not be allowed by the City Government.

Jenny: But they are always sold at stores.

Li: So you think that you can use them on your garden because they are available in stores?

Jenny: Is it ok?

Li: I think that may not be true.

Participants such as Jenny believed that restricted products would no longer be available on the shelves or would be marked as 'dangerous' or restricted, or that if a product was for sale, it was 'safe' (and legal). Only one participant was aware that the municipal government does not have jurisdiction over the *sale* of pesticides (this is the jurisdiction of the provincial government), only over the application of pesticides locally. Once such participants were made aware that many items for sale on store shelves locally would in fact be prohibited for use within the municipality, they were concerned about the apparent policy inconsistencies: 'How does this bylaw exist if the government still allows these products? . . . They shouldn't have the products at all . . . because you have to have the awareness of whether it's good or bad [to know whether to buy it]' (Rosa – Spanish speaker, female, 40+, focus group).

In a similar vein, participants felt they would not be able to distinguish between legal and illegal (or ‘safe’ and ‘bad’) products without additional information about brand names and/or product contents:

If the City sends a list to my house . . . of chemical products, that maybe won’t be useful for me, because the name of a chemical product isn’t exactly what you read on a label. If the City sent a list of all the products [ie. brand/name of product] that contain that chemical product, then that list would help (Andrés – Spanish speaker, male, 40+, interview).

However, Toronto Public Health’s education largely identified active ingredients rather than brand names for both restricted and permitted (i.e. lower risk) pesticide products so that perceptions of product endorsement were not an issue. Because this was a barrier common to all audiences, over time, Toronto Public Health provided lists that made mention of several brand names for given types of pesticides (Toronto Public Health 2008).

Sources of information and engagement

Of those participants who were aware of the bylaw, most reported that they had found out about it through word-of-mouth; only one (a fluent English speaker) had learned about it through City information. At focus groups and interviews, participants were given information packages on the bylaw prepared by the City, containing both English and available translated documents; these were printed materials already being disseminated by the City. Although several key documents related to the bylaw and the natural lawn care program were translated into a number of languages (including Chinese and Spanish), the department’s budget for the pesticide education program did not allow for translation of all materials. Participants felt strongly that it was important to have translated information available for it to be accessible for their communities, in particular, recent immigrants. The City’s translated materials were deemed useful overall. However, access to such information was the biggest issue. As this participant explained,

I don’t know how to get to [the information] . . . like sometimes those of us who go to the programs at the community centres, we have access [to the information], if it interests us, but there are people who don’t go to the community centres. So there’s that issue – in what way these people can access the information (Eva – Spanish speaker, female, 35+, interview).

The majority of participants had not seen any of the City materials before their involvement in the project and felt that accessing such information was difficult, as this Spanish speaker’s focus group discussion illustrates:

Q: Have you seen these materials?

All: No.

Alda: This is the first time.

Diana: First time I’ve seen this.

Q: And would you know where to pick up these materials?

Diana: No.

Carolina: In a municipal office, no?

Silvia: But I have an apartment . . .

Alda: Yes, and one doesn’t go to a municipal office much either, right . . .

Silvia: I don’t visit it.

Alda: I don’t think it’s easy to get this information, because I’ve never seen it before.

Most participants were only occasional users of English-language media, and many felt that City partnerships with non-English media outlets, such as local Cantonese and Spanish radio and newspapers, would be more effective to reach their communities:

I think the Chinese media play a very important role here. I've done some consultation before. We did them through community newspapers such as the Mirror. But Chinese [people] don't really read them. If they are advertised in 'Sing Tao' [a very popular Chinese newspaper], it will be more effective (Peter – Cantonese-speaker, male, 40+, focus group).

Toronto Public Health had included outreach through such media outlets as part of the pesticide bylaw information campaign. Participants also noted that information on the Internet often did not reach those less likely to use the Internet, such as those with limited English and seniors, and that the design of the City's website made it difficult to access the material in other languages.

Participants emphasized the need for more direct engagement in partnership with community agencies. As one focus group participant remarked,

I think that what you are doing right now [the focus group], giving us information, doing this would be [a good way for the City to communicate with the community] – going to community centres and informing people, like you're doing, coming and talking to them about these things [natural gardening, pesticides, pesticide regulation]...I think in community centres, because we are always in community centres – especially for immigrants (Alda – Spanish speaker, female, 25+, focus group).

Other focus-group participants likewise stressed that without the chance to discuss and ask questions, the provision of information on the bylaw might be less effective:

Alice: I think there should be regular activities to gather people and discuss. They can talk more about it.

Mei: That's right.

Q: If you just put a pamphlet out there, no one will pay attention to it.

Mei: That's right.

Jane: No one will pick it up.

Q: So you think the most effective way is to sit down face to face and talk about it.

Mei: That's right.

Cecilia: When you don't understand, perhaps someone else can tell you about it.

(Cantonese focus group)

Another participant linked the lack of City informational material in Spanish to a more general critique of approaches to engaging 'ethnic communities'. She explained,

The other thing is that they [City of Toronto] have a massive, consistent, and persistent campaign, that's regular, you know – 'at all times' – because what happens with the majority of campaigns for ethnic communities is that they give, like, a drop of water in the pool, and nothing else, you know. Like, OK – when the money's available, we'll decide to do something, alright, let's go...And you find this pattern in everything – in schools, in City activities, everywhere – that's why it doesn't surprise me that there isn't any [material] in Spanish (Rosa – Spanish speaker, female, 40+, focus group).

In this respondent's view, the lack of available materials (and outreach more generally) was linked to broader inequalities in the distribution of services to ethnic communities within the city.

In addition to community centres, social networks and particularly neighbours were cited as important sources of information on pesticides and gardening practices, especially among Spanish-speaking participants, who on the whole reported being less experienced gardeners and said that they often asked neighbours for advice. Some participants learned about ‘natural’ gardening (i.e. pesticide-free approaches) from their neighbours:

I think that they do everything naturally if they can, because when he [Italian neighbour] has been working outside, I haven’t seen that [he uses any pesticides] . . . the soil is really good; they don’t need to spray things. I only wish I had the number of tomatoes that he picked . . . And he hasn’t sprayed anything on them (Diana – Spanish speaker, female, 60+, interview).

However, neighbourly advice had led other participants to choose products with pesticides:

Well, ‘Weed and Feed’ is what the neighbour recommended. I didn’t know of any other fertilizer, and he recommended that, so I bought it. But no, I don’t know them by brand or anything, that one brand is better than another. ‘Weed and Feed’ because my neighbour said so! (Isabel – Spanish speaker, female, 40+, interview).

Local, hands-on gardening knowledge was thus seen as an important source of information, but one that could discourage or encourage use of pesticides depending on local practices.

Enforcement and complaints

Toronto’s pesticide bylaw enforcement strategy relied on individuals phoning in to complain about their neighbour’s use of pesticides and on inspections by Toronto Public Health. When asked about their willingness to make such a complaint to the City, only one of the 23 participants reported that they would and only under the condition that she would remain anonymous. There were a number of reasons why participants would not make a complaint, particularly surrounding confidentiality. Despite assurances that the complaints process was confidential, participants still felt it was not worth the risk of upsetting neighbourhood relations, because accused parties would know it was someone nearby who complained. Participants had doubts about the City protecting their anonymity effectively:

Me . . . I wouldn’t make a complaint, so as not to create problems with those people [neighbours who were using pesticides] . . . because sometimes they’ll say that it can be an anonymous complaint, but you don’t know to what point they’re really going to protect you (Eva – female, 35+, Spanish-speaking focus group).

One participant saw the enforcement system as fostering gossip and related it to a system of state repression:

They’ve proposed a system which they have little idea about, and prefer a system of ‘gossip’ . . . just having neighbours keep an eye on what’s being done and who’s doing it . . . If the government wants to have gossips, well they should look at a social system like Cuba’s, I mean a repressive system where the police are just waiting for the gossip of other people in order to act. No, I’m not going to do that [make a complaint] (Andrés – Spanish speaker, male, 40+, interview).

Particularly among Cantonese-speaking participants, people reported that they would not complain because they distrusted government, and felt it might get them in trouble, as this Cantonese focus group discussion illustrates,

Q: You don't want to have things to do with the government?

Jenny: That's right. If anything happens the government will go to you. It will be troublesome.

Vivian: That's right.

Jenny: It will be a lot of trouble to me. I will try to avoid it as much as I can.

Vivian: A lot of trouble.

Ju: I will try my best to avoid it [laughs].

Q: I see...

Ju: I don't want to find trouble for myself [laughs].

Q: You may have to go to the authority as a witness...

Jenny: That's right. It will be a lot of trouble.

This general unwillingness to complain raises questions about the effectiveness of bylaw enforcement in communities where residents are not likely to make a complaint.

Discussion

The results described above suggest that, despite the efforts for comprehensive and diverse health promotion strategies on the part of Toronto Public Health, these groups viewed access to information on pesticides and the bylaw as limited. They also suggest that existing efforts to go beyond the mainstream avenues of communication (English-language media, Internet) were not adequate to reach the linguistic communities studied here. This highlights the increasingly recognized importance of culturally relevant and accessible health information (Ahmad *et al.* 2004, Watts *et al.* 2004, Reitmanova and Gustafson 2008) and extends such arguments to the field of environmental health.

Results also suggest that to effectively engage with diverse audiences, municipal government should build on existing community resources, in particular, community-level (ethnocultural and locality based) agencies and informal 'community leaders' to whom others turn for information and advice. Although translating information into other languages was found to be important, study findings indicated that simply extending traditional engagement strategies (e.g. translating web-accessible materials into other languages) does little to restructure opportunities for participation in civic life. These findings support an earlier analysis by Toronto Public Health that showed positive change through environmental health awareness programs is best achieved with intensive interventions using multiple methods and settings (Campbell *et al.* 2000). The MYHEP findings also fostered subsequent additional adaptations to the pesticide education program conducted by the department.

Furthermore, participant comments make clear that the complaint-based enforcement system of Toronto's pesticide bylaw may not provide much protection, particularly in situations where residents are sceptical about the benefits of engaging with government in this way. Among study participants, the risks of neighbourhood conflict were seen to outweigh the risks of pesticide exposure. Hirsch and Baxter (2009, 2011) similarly found that residents in Halifax and Calgary, Canada, are

reticent to complain about both their neighbours' use of pesticides or conversely excessive weeds – all in the name of sustaining neighbourhood peace. Furthermore, Hirsch and Baxter found that this issue is unlikely to be entirely resolved through a pesticide ban, as some Halifax residents admitted to ongoing use of pesticides on their lawn despite having a local bylaw forbidding their use. Such concerns about social cohesion, and lack of trust in government, raise questions about the effectiveness of complaint-based enforcement strategies more generally; at the same time, cultural norms that work against government collaboration could exacerbate uneven landscapes of enforcement.

Study results related to the availability of restricted products also raise important questions about who has the responsibility to protect public health. As was noted by participants, pesticide information was difficult to come by and tended to be misunderstood. At the same time, participants expressed a desire for regulation that would protect their health and were troubled that they would be expected to identify products that were dangerous without state intervention (e.g. through prohibition or clear labelling). Placing the onus for 'good' decision making on individual consumers, rather than grounding choices in regulatory frameworks that actively seek to reduce harm, has been critiqued as 'a neoliberal anti-politics that devolves regulatory responsibility to consumers' (Guthman 2007, p. 264). Policies that emphasize individual responsibility – seen in relation to a wide range of diet and lifestyle 'choices' that affect exposure to contaminants – have been observed to result in victim-blaming, while failing to substantively reduce harm among those who are most vulnerable (Peterson and Lupton 1996, Guthman and DePuis 2006, Mansfield 2011).

This research adds to existing critiques by illustrating how environmental regulation that extends these logics of consumer choice can leave particular communities at greater risk of exposure to pesticides. That is, policy interventions that presuppose a particular kind of informed consumer/citizen and create a regulatory framework on that basis – for example, by banning the application, but not the sale, of some widely available products and relying on educational campaigns to bridge the gap and by developing an enforcement model that relies on a particular type of engaged citizenship to be effective – could reinforce existing racial inequalities in health in Canada (Ornstein 2000, Halwani 2002).

Conclusion: linking research with practice

It is important to note that within Toronto, the MYHEP findings were able to provide support for subsequent improvements to the City's outreach to multicultural communities in this and other contexts. Toronto Public Health continued to partner with community agencies to fund community-based pesticide education programs, and was less prescriptive about the method in which information was conveyed, to allow communities to disseminate information in the most culturally appropriate manner. Capacity for inspectors to conduct regular, proactive surveillance and interact directly with homeowners and businesses, along with conducting complaint investigations, was increased. Furthermore, as a result of ongoing pressure from municipalities and local activist groups, the Ontario Cosmetic Pesticides Ban Act came into force in April 2009, banning the sale of many commonly used pesticides. Although issues with enforcement may still exist under this new model, the provincial

government's entry into more substantive pesticide regulation has generally been seen as a positive development for public health. Indeed, this article suggests that more stringent regulation, such as the provincial ban, combined with effective enforcement, may be of higher importance for protecting public health than information-led regulation that depends on 'good' individual consumer decision making. This is particularly relevant in the context of diverse population settings such as that existing in Toronto, where placing the responsibility for the protection of health on consumer choices and relying on outreach/education that may not bridge the gap of language and other barriers may create an inequitable landscape of protection.

Although this article indicates that traditional bylaw information campaigns and complaint-based enforcement systems could have the unintended effect of creating health inequalities, it is also important to recognize that the combined efforts of practitioners, researchers and activists to identify factors that lead to poor health and health inequality – and to work to change them – are centrally important, as the various policy changes in relation to pesticides attest. This work requires a proactive, sustained and intentional approach from environmental and public health practitioners. Policy frameworks, outreach and engagement strategies, and systems of enforcement must work *with* diverse communities to take difference more meaningfully into account in order to ensure equitable environmental health protection and promotion for all.

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