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Way2Go! Social marketing for girls' active transportation to school

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ABSTRACT

Active transportation to school (ATS) is a recognized way to increase physical activity (PA). However, girls and young women do not regularly use ATS despite the many documented physical, mental, and community health benefits. Social Marketing (SM) may provide a framework for understanding girls' perspectives of and experience with ATS and inform messages for use in a public health marketing campaign. Focus groups with 79 girls between the ages of 7 and 15 were conducted in Spring 2017 in Victoria, Canada. Transcripts and poster data were initially categorized using the '4Ps' from social marketing (Product, Price, Place and Promotion). Participant groups were segmented into three age categories for designing tailored messaging. Thematic analysis revealed elementary school aged participants identified health and fun while middle school participants valued socializing and helping the environment as reasons for engaging in ATS. For secondary school students, ATS was seen as a way to become more independent. All three highlighted fun and enjoyment as important benefits of ATS, and suggested positive and lighthearted messaging. Segmenting into different audiences highlighted how campaign segmentation would resonate with different audiences based on core values and beliefs. Further segmentation of the audience could result in different core values and beliefs held by diverse groups.

1. Introduction

Despite the strong connection between physical activity (PA) and lifelong health, only 7%–9% of Canadian children and youth participate in 60 min or more of moderate to vigorous PA (MVPA) daily, putting them at risk for developing chronic illnesses such as cardiovascular disease (CVD) and Type II diabetes (Barnes et al., 2016; Patnode et al., 2010; Spurr et al., 2016; Tremblay et al., 2016). Regular exercise is known to have effects on academic and mental health outcomes in children, and positive PA behaviours track into adulthood (Lees and Hopkins, 2013; Malina, 1996).

Research shows that girls do less PA than boys including physically active travel (Davison et al., 2008; Dumith et al., 2011; Pearson et al., 2015; Spurr et al., 2016; Trost et al., 2002). Thus, girls do not benefit as much from the association between active transportation to school (ATS) and PA (Buliung, Flora, & Fusco, 2009; Patnode et al., 2010). ATS includes walking, cycling, skating, as well as taking public transportation to school (Frazer et al., 2015). Girls who use ATS report 4.7 to 40 min more MVPA than non-ATS users (Faulkner et al., 2009). Estimates are that 24–26% of Canadian 5–17-year olds use ATS regularly, but inactive modes of travel have steadily eclipsed active modes since 2000 (Canadian Fitness and Lifestyle Research Institute, 2012;

Mammen et al., 2014; ParticipACTION, 2016).

Along with gender, major determinants of ATS include distance of more than one kilometer from school and age (Panter et al., 2008). Other behavioural change determinants may influence ATS, such as the built environment, weather, family dynamics, modelling, and independent mobility (Bere et al., 2011; De Meester et al., 2013; Mitra and Faulkner, 2012; Pang et al., 2017; Pont et al., 2009). Determinants are sometimes framed by theory with socio-ecological and social cognitive theory (SCT) the most prevalent (Buttazzoni et al., 2018). Two recent reviews have found extremely varied intervention effectiveness (Pang et al., 2017; Villa-González et al., 2018).

Based on this evidence, the Capital Regional District of Vancouver Island (CRD) and the Vancouver Island Regional Health Authority (IH) initiated Way2Go!, a social marketing (SM) project to increase girls' PA through ATS. SM applies commercial marketing techniques to encourage prosocial behaviours or limit risky ones and emphasizes keeping the priority audience at the heart of all marketing activities (Andreasen, 1995; Lee and Kotler, 2011; Naylor et al., 2011). SM has met success in youth health settings, such as curbing alcohol abuse (Sinopoli et al., 2009), smoking cessation (Mintz et al., 1999), safer sex practices (Messer et al., 2011), sunscreen use (Iannacone and Green, 2014), and PA (Cavill and Maibach, 2008). Social marketing has been

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suggested as a way to elicit positive feelings towards ATS in students and their parents (Ginja et al., 2018).

The concept of the SM marketing mix can be defined principally by the '4 Ps' (Andreasen, 1995; Lee and Kotler, 2011). Product reflects (1) the underlying values and benefits associated with ATS, (2) the actual activity of ATS (e.g., biking), and (3) the ways in which value is added to enrich the experience of ATS. Price includes instrumental costs which may be endured during ATS (e.g., purchasing helmets) and terminal costs tied to negative emotions (e.g., fear of falling). Place captures distribution channels where ATS can be taken up, including networks and physical spaces. Promotion identifies key messages, delivery modes, and messengers needed to inform about ATS and inspire action (Andreasen, 1995).

The purpose of Way2Go! was to apply a SM lens to identify key campaign elements to encourage ATS in English-speaking children and youth self-identifying as female between the ages of 7–15. We specifically sought to: a) identify the best creative campaign approach using multiple SM techniques and b) add to the qualitative evidence base linking ATS and girls' PA.

2. Methods

2.1. Recruitment and sample

Following ethical approval from the University of Victoria (BC 16-450) and three school districts, school principals and a non-governmental organization were contacted. Participants were recruited directly by the researchers through classroom meetings or by the school or organization administration. In total, 79 youth participated in 13 focus groups in spring 2017, segmented into Elementary (ES, n = 28), Middle (MS, n = 26), and Secondary School (SS, n = 25) aged girls (Table 1). Participants and guardians provided written consent, and pseudonyms were chosen by each participant to protect anonymity.

2.2. Study design and data collection

Way2Go! was a pragmatic qualitative case study consisting of two data collection steps (Creswell, 2007). First, 30 to 60-minute long semi-structured focus groups gathered participants' perspectives of ATS and associated benefits, barriers and determinants. The interview schedule also included questions on what modes of travel were considered socially desirable, and how schools could motivate use of ATS. Second, follow-up focus groups were conducted with three purposively chosen groups, one from each age category, in which participants formed small groups to create posters to attract their cohort to ATS. These groups included individuals that demonstrated an ability to reflect on and communicate their experiences of ATS and were available for follow-up. Visual data such as poster-making represent a departure from semantic stimuli typical to interviews and are appropriate to youth whose nuanced use of language is under-developed (Chadborn et al., 2013).

2.3. Data analysis

Interviews, memos and notes were transcribed *verbatim*, and posters were photographed for analysis (Strauss and Corbin, 1998). Initial open

coding relied on the 4 Ps to collapse and organize data across age groups. We used the Constant Comparative Method to move from categories of patterns to conceptual themes (Boeije, 2002). Following creation of major themes present across all ages, we identified core themes for each segment. During the poster session, participants discussed their work with the researcher to clarify various elements; poster data were analyzed by identifying key text and images on the poster and transcribing the participants' discussion. Our methods were guided by procedures in other school-based research (Chadborn et al., 2013; Naylor et al., 2011; Spurr et al., 2016). Interview and poster data were managed and analyzed using NVivo 11 (QSR International, Melbourne, Australia).

3. Results

The resulting themes are presented according to the 4 P's SM framework (Andreasen, 1995; Lee and Kotler, 2011) (Fig. 1). Illustrative quotes are identified by pseudonym and school code in brackets.

Participants reported walking, biking, taking the bus, or skateboarding as examples of the tangible product of ATS. Regarding the core product, the youngest participants believed that ATS provided PA so that they could "get stronger and do more, harder things" [Kole, ES03]. MS and SS participants equated ATS with **mental health**, noting "fresh air" [Star, MS01; Lulu, SS02] and time away from a screen [Ryan, MS01]. Trails were preferable to roads, being "relaxing and more enjoyable... you feel less tired when you get to school, and more able to work" [Sonya, SS03]. Physical and mental wellness were core values at all age groups, summed up by the phrase, "I really do enjoy the feeling after doing it" [Sara, MS02]. **Curbing climate change** was articulated through the connection between cars and fossil fuels. ES and MS students felt "happy" when they could do something that was "better for nature" and "polar bears" [Gemma, MS02; Fern, ES02].

Independence was highlighted by SS participants as a way in which value is added to ATS as an augmented product. A large-font poster was directed at "Mom" to "STOP!" because the child does not "need a ride" (Fig. 2). While experimenting with independence was seen as important for older age groups, **socializing** was important for all segments. "It goes by really fast" [Jocelyn, SS03] and does not feel "lonely" to use ATS with a companion [Lucy, ES01]. One student said she liked getting to her destination with "a little group of people, your squad" [Ella, MS02].

Distance was a significant cost to ATS or any "faraway place" due to increased travel time [Lucy, ES01]. Participants did acknowledge that they could walk many places "if they wanted to" [North, SS05]. Most groups noted that inclement **weather** was a negative associated with ATS. Pepper [MS01] said that "when it's raining, my dad will drive me" to avoid weather she considered "rainy and just gross and cold and stuff." On the other hand, ES posters positively depicted stormy weather, including phrases such as "Walk in the rain, it's fun!" (Fig. 3).

All participants worried about their **safety in traffic** as another major cost. They described the road environment as "scary" with speeding cars "whipping around a corner" [Lily, ES03]. Poor visibility added to their anxiety: "I don't think that cars can see the bike lanes... that makes me scared" [Banana, MS01]. **Strangers** or being alone were equated with fear and worry. Interestingly, a group of recent adolescent

Table 1

Participant breakdown. Participants were segmented by age: Elementary, Middle, and Secondary.

Segment	Age range	Number of focus groups	Number of participants	School district 61	School district 62	School district 63	Other
Elementary	7–10	4	28	1 ^a	1	1	1
Middle	11–13	4	26	1 ^a	0	2	1
Secondary	14–15	5	25	1	1 ^a	2	1
Total	7–15	13	79	3	2	5	3

^a Denotes follow-up focus group.

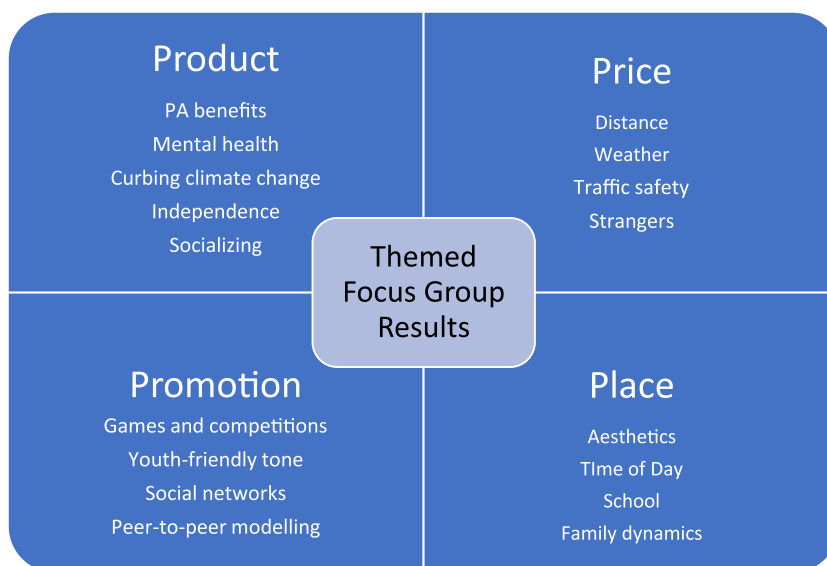


Fig. 1. Main themed results in 4P's framework.

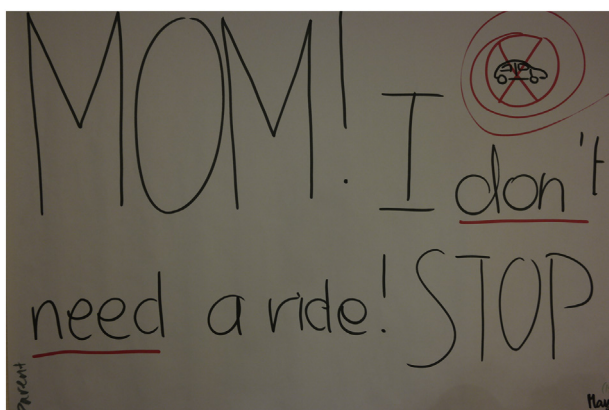


Fig. 2. Poster emphasizing independence from parents and the family vehicle.

newcomers to Canada said that they felt totally safe travelling in Victoria [Lulu, Baro, SS02].

With respect to place, **aesthetics** were frequently discussed as both enabling and discouraging their engagement in ATS. Flowers, trees, animals, and sunrises were memorable natural phenomena on the trip to school, but inadequate road upkeep meant that one student “had to walk into the middle of the road because that was the only part that was getting salted” [Alena, PFG01]. **Time of day** arose in all segments. SS students suggested they would take up ATS if they could sleep in. “I think if school did start later it would encourage walking,” said North [SS05]. **School** was viewed as an opening for ATS-centred events, such as the annual Victoria Walk and Bike To School Week [MS01]. Improved bathrooms and ‘dry-off rooms’ were suggested as places to refresh after ATS, but students acknowledged that shared areas were unappealing if not kept clean, calm, and well stocked [PFG01; SS02]. **Family dynamics** emerged as a complicating factor in the placement of ATS. In families where parents did not live together, participants described two commuting plans: “My parents are divorced. With my dad... we will drive... When I’m at my mom’s I walk” [Nina, ES03].

Concerning promotion, all segments suggested that a **youth-friendly tone** be used because it was felt that parents and teachers “tell you what to do all day long” [James Bond, SS03], and “kids don’t like being told to do something... it’s a fact,” [Alena, PFG01]. A playful, humorous approach was apparent throughout the results. One poster featured a large cupcake, underneath which small letters read: “Just

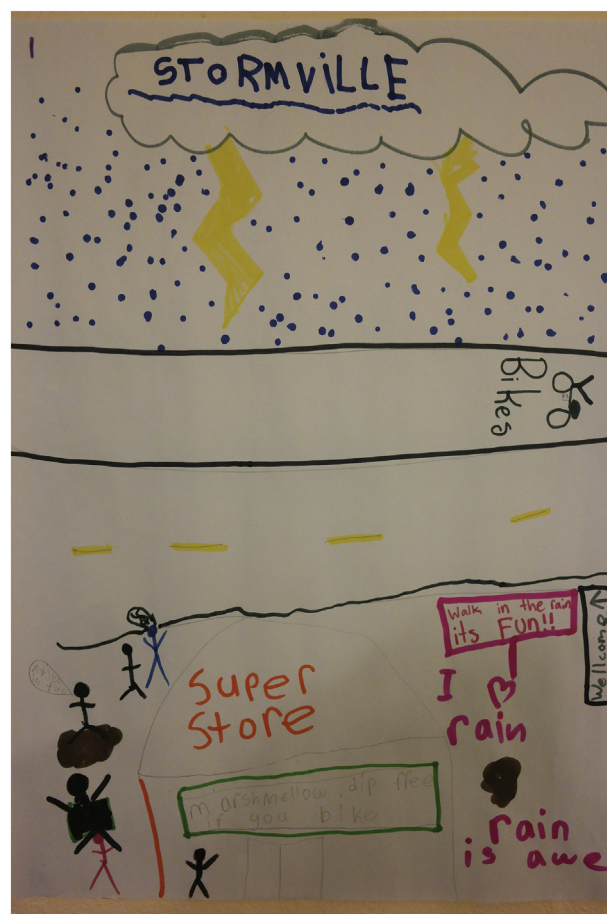


Fig. 3. Detail of ES poster, “Walk in the rain!”

kidding, but you do get 2 free [bite-sized donuts] when you ride your bike!” (Fig. 4). All segments volunteered **games and competitions** as ways to promote ATS. Young students suggested simple games: “On my bike... I try not to hit any sticks or leaves,” said Ally [ES01]. Older students were enthusiastic about events for both adults and children to improve cycling skills [MS01]. Daniela [HS01] suggested offering school credit as incentive. Finally, food prizes were considered



Fig. 4. Middle School poster using incentive.

effective: “If they had... pizza, I would definitely walk” [Grape, SS03].

Social networks featured in discussions with MS and SS students, but it was acknowledged that campaign content would be difficult to popularize or make “viral” [Jen, SS05]. Participants of all ages thought – and many social marketers would agree – that **peer-to-peer** promotion or **modelling** would effectively promote ATS (Andreasen, 1995). Older youth were considered better messengers than parents or teachers [Sonya, SS03]. One participant noted the role of parents: “Monkey see, monkey do. We learn off our parents. If they ride a bike more, we ride a bike more” [Suze, MS01].

4. Discussion

The association between ATS and PA has motivated public health professionals and local decision makers to address the low level of ATS among girls. We applied the SM principles of audience segmentation and the marketing mix to guide a ‘real world’ SM campaign to contribute to the literature on ATS, covering a number of SM benchmark criteria for this complex intervention (Andreasen, 1995). Importantly, we found that detecting and engaging with the core values held by different segments of the priority audience can build sound campaign messaging. These results are discussed in the context of the literature following, arranged in the 4 P’s framework for clarity.

4.1. Product

Our study found that participants valued ATS because of the opportunity to run, jump, skate, and otherwise get the heart pumping, especially for the youngest students. Our MS participants further suggested that friends may help them deal with negative costs of ATS such

as poor weather (Mitra and Faulkner, 2012). This resonated with what we learned from the quantitative literature on ATS from Panter et al. (2008) and qualitative data of Simons et al. (2014) respectively. The connection between ATS and environmental impact has been addressed in a recent study using poster voice (Chadborn et al., 2013). Environmental concerns did not resound with all older girls in our study as a core value, suggesting that climate change and ATS is a message best crafted for ES and MS. Participants in Secondary School suggested that independence was a more important value to their segment.

4.2. Price

Distance or time spent in commute are commonly found to be the most powerful instrumental costs to ATS (Berrigan and Troiano, 2002; McDonald et al., 2009; Panter et al., 2008). This is consistent with our findings, though our sample differed by also connecting mindfulness to an active commute. While the actual effect of weather may be a less powerful determinant of ATS than distance (Mitra and Faulkner, 2012), our respondents reported that bad weather often resulted in their parents driving them to school.

Efforts to enhance ATS must address traffic and safety costs, particularly to empower girls (Panter et al., 2008). De Meester et al. (2013) notes broader safety concerns are important to girls, who are less likely to travel unaccompanied compared to boys. Increasing the benefits for girls may require recognizing that they experience more negative consequences from ATS than boys, including strategies like an annual travel award for girls presented by a respected female community member or girl-focused organization (Lee and Kotler, 2011).

4.3. Place

Our study supported previous literature suggesting that ATS would be easier if trail and bike path networks were improved and routes were beautified with art (Lee and Kotler, 2011; Panter et al., 2008). Another suggested strategy addressed competition by making driving less convenient through removing parking spaces (Lee and Kotler, 2011). This also supports local programs to encourage parents to drop students off a short walking distance from school, rather than driving door-to-door (Active and Safe Routes to School, 2015).

A SM place strategy, such as extending hours available for students to do ATS, could take the form of pushing back school start times to accommodate longer commutes (Lee and Kotler, 2011). This may align with research on adolescent sleep, a body of literature which we did not extensively review for the present study.

4.4. Promotion

ATS interventions to increase girls’ overall PA have shown small effects, with multicomponent, school-based schemes the most effective (Pearson et al., 2015). There is little in the literature on incentivizing ATS for girls, though our participants frequently suggested extrinsic motivators such as parties, food, and school credits were universally popular as persuasive communication strategies.

Past SM campaigns targeting youth have found success when rooted in messaging tailored to different segments while avoiding pejorative language (Cavill and Maibach, 2008; Mintz et al., 1999). Mintz et al. (1999) found similar values and a desire for a non-authoritative message tone in an anti-tobacco campaign. Recognizable language and concepts from the lives of the priority audience was similarly successful in addressing binge drinking (Sinopoli et al., 2009). Way2Go! participants suggested that peer-to-peer promotions, including social media, were preferable to authority figure promotion. Our findings strongly supported those in the literature, with participants emphasizing fun, light-hearted messages to encourage ATS.

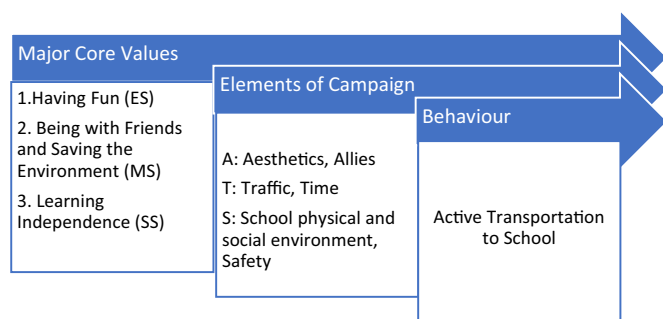


Fig. 5. Ways forward for SM campaign messaging.

4.5. Differences by school level

One of the basic tenets of SM is to identify the ‘core values’ of the priority audience to ensure campaign messaging resonates with their motivation (Sinopoli et al., 2009). We identified major core values of having fun, socializing and saving the environment, and learning independence to describe each age segment. Although there were similarities between groups, they were weighted differently highlighting the most salient elements by audience segment. The youngest participants valued having fun during ATS above all; the middle school girls valued both an environmental message as well as socializing; and the oldest participants valued learning independence through ATS.

Based on our findings we devised an easy-to-remember acronym, “A-T-S”, to minimize the price associated with active travel in the places where the behaviour can be taken up Combined with segmented core values this can facilitate behaviour change (Fig. 5). This abbreviation is meant to remind upstream influencers, like policy makers and city planners, as well as teachers and parents of what is important to girls ATS. Campaign planners and policy makers can use this tool to jumpstart the creation of a positive and fun ‘marketing mix’ so that the audience associates the desired behaviour with their core values and beliefs (Andreasen, 1995; Cavill and Maibach, 2008).

4.6. Limitations

To our knowledge this is the first study to undertake formative SM research in girls’ ATS but there were limitations. We trained a practical lens on the study, one not focused on the theories available to explain ATS and inform an intervention. Based on our data we suggest that social ecological theory, theory of planned behaviour, and social learning theory, may be particularly relevant. With ATS habits differing across age groups (Panter et al., 2008), we chose this demographic determinant of travel habits as one way to ‘segment’ the audience. Additionally, no data on socio-economic status, level of PA or other physical factors were collected. Limitations associated with focus group methodology may also have impacted the findings, such as potential response and recall bias, as well as in-group dynamics affecting the consensus of the group (Andreasen, 1995). Further, poster data were only collected from three groups. Finally, there was potential selection bias, with four of 13 groups (31%) recruited from physical education (PE) or leadership classes and who may have had more appreciation for PA programs than their peers.

5. Conclusion

A public health campaign to increase girls’ ATS is an important investment because ATS is mostly free, easy to adopt, and can take place during much of the year (Panter et al., 2008). Regional health authority efforts to increase this may benefit from studies such as ours that use a range of social marketing techniques to understand this complex health behaviour (Andreasen, 1995; Barnes et al., 2016; Iannacone and Green,

2014). Segmenting for age and identifying the 4P’s are instrumental to increasing ATS, and to creating age-appropriate public health messages (Lee and Kotler, 2011; Panter et al., 2008).

A social marketing campaign targeting ATS builds on lessons learned in other youth health promotion campaigns by engaging the target population (Cavill and Maibach, 2008; Naylor et al., 2011; Sinopoli et al., 2009). Future ATS research and health promotion efforts should include perspectives from upstream audiences influential in girls’ lives (Lee and Kotler, 2011). The perspectives of diverse audience segments are also needed. Evaluating the success of targeted campaigns could augment future behaviour change efforts in this population, contributing to longer term health and wellness outcomes.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pmedr.2019.100828>.

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