



Evaluating the impact of a brief Health at Every Size[®]-informed health promotion activity on body positivity and internalized weight-based oppression



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ABSTRACT

Weight-based oppression, including negative attitudes about body weight, and harassment, stigma, and discrimination based on body weight, is a widespread phenomenon that leads to considerable distress and poor health and wellbeing outcomes. Conversely, body positivity is a multi-faceted concept that encompasses body acceptance, body appreciation, and body love, and adaptive approaches protective of health and wellbeing. The aim of this study was to evaluate the impact of a brief health promotion activity informed by Health at Every Size[®] and critical health promotion principles on body positivity and internalized weight-based oppression in female students at Qatar University. A quasi-experimental mixed methods pre-post evaluation design was used, with quantitative assessment of body positivity and internalized weight-based oppression before the activity, immediately afterwards, and 10 weeks later, and qualitative assessment at the 10-week follow up. Measures used were the Body Appreciation Scale 2, Modified Weight Bias Internalization Scale, Fat Attitudes Assessment Toolkit Size Acceptance and Self Reflection on Body Acceptance subscales, and an open-ended questionnaire. Body acceptance and appreciation increased significantly after the activity. Qualitative results suggest that these improvements were sustained at follow up. Brief Health at Every Size[®] informed health promotion activities show potential to improve health and wellbeing.

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1. Introduction

Societies around the world have a fraught relationship with women's bodies and as a result, women and girls have a fraught relationship with their own bodies (Wolf, 1991). Women and girls are not just passive recipients of societal messages about their bodies, but are actively involved in the uptake, circulation and amplification of implicit and explicit messages about the perceived value of various body shapes, sizes, colours, ages and gender performativity, for example through posts on social media (Cohen, Newton-John, & Slater, 2018). Many of these ideas are rooted in racism and white supremacy (Strings, 2019). Despite women actively engaging in decolonial and other forms of feminist resistance to the treatment of women's bodies as 'terra nullius' (nobody's land) (Mack & Na'Puti, 2019), the negative framing and harmful treatment of women's bodies is still prevalent. Framing women's bodies as problematic can be classified as oppression because it

constitutes unjust systematic harms and is grounded in institutions or individuals (Eller, 2014). Weight-based oppression, including negative thoughts and attitudes about body weight, and exposure to teasing, harassment, stigma, prejudice and discrimination based on body weight (Cameron & Russell, 2016; Wann, 2009), is a widespread phenomenon that disproportionately and unfairly affects women. Weight-based oppression leads to considerable distress and poor health outcomes (Eller, 2014; Latner, Barile, Durso, & O'Brien, 2014; Puhl & Heuer, 2009).

Weight-based oppression is both external and internalized (Wann, 2009). External sources of weight-based oppression include exposure to weight stigmatizing or exclusionary conditions in social, cultural, economic, political, and built environments, and practices such as weight bias and weight-based discrimination, teasing, bullying, and violence (Cameron & Russell, 2016; Wann, 2009). Internalized weight-based oppression arises from exposure to external weight-based oppression and the broader social construction of attitudes, values and beliefs about 'acceptable' and 'unacceptable' body weights which people impose on themselves and others (Davison, Schmalz, Young, & Birch, 2008; Wang, Brownell, & Wadden, 2004; Wann, 2009). Internalized and external

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weight-based oppression are therefore part of the same multidirectional, multilayered ecosystem of oppression that encompasses intrapersonal, interpersonal and institutional actions based on the ideology that fat is inherently unhealthy, bad, undesirable, unattractive, unlovable, unacceptable and a signifier of moral failure and lack of control (GORDA [[@fiercefatfemme](mailto:fiercefatfemme)], 2020).

Weight-based oppression is experienced at all ages, and women experience both internalized and external weight-based oppression at higher rates than men (Pearl & Puhl, 2018). Weight-based oppression, like other forms of oppression, is exacerbated by intersecting axes of marginalization, such that weight-based oppression has a greater impact on women with larger bodies, women of colour, disabled women, trans women, and women with lower levels of socioeconomic resources.

Evidence is mounting of the psychological, behavioral and physiological effects of weight-based oppression (Pearl & Puhl, 2018). Internalized and/or external weight-based oppression has a negative impact on perceived health (Essayli, Murakami, Wilson, & Latner, 2017), health related quality of life (HRQOL) (general, weight-specific, mental and physical HRQOL) (Pearl & Puhl, 2018), negative affect (Essayli et al., 2017; Schvey, Puhl, & Brownell, 2011), positive affect (Pearl & Puhl, 2018), depression (Brewis & Bruening, 2018; Mustillo, Budd, & Hendrix, 2013; Phelan et al., 2015), anxiety (Graham & Edwards, 2013; Griffiths & Page, 2008; Savoy, Almeida, & Boxer, 2012), global self-worth (Davison et al., 2008), self-esteem (Pearl & Puhl, 2018), self-confidence (Griffiths & Page, 2008), sense of mastery (Phelan et al., 2015), low self-compassion and fear of self-compassion (Huellemann & Calogero, 2020), perceived attractiveness (Davison et al., 2008), body image or body dissatisfaction (Essayli et al., 2017; Neumark-Sztainer et al., 2010; Phelan et al., 2015), drive for thinness (Pearl, Dovidio, Puhl, & Brownell, 2015), physical activity self-efficacy or motivation (Graham & Edwards, 2013; Vartanian, Pinkus, & Smyth, 2018), perceived social isolation (Griffiths & Page, 2008), and perceived social support (Phelan et al., 2015).

Behavioural impacts of internalized and/or external weight-based oppression include disordered eating (Davison et al., 2008; Meadows & Higgs, 2020; Neumark-Sztainer et al., 2010), binge eating disorder (Pearl & Puhl, 2018), greater likelihood of using drugs or alcohol to cope with stress (Phelan et al., 2015), increased calorie consumption (Schvey et al., 2011), antisocial behaviour (Savoy et al., 2012), avoidance or lower levels of physical activity (Mensinger & Meadows, 2017; Puhl & Heuer, 2010; Vartanian & Novak, 2011), and avoidance of preventive and treatment health-care services (Mensinger, Tylka, & Calamari, 2018; Puhl & Heuer, 2010).

Physiological impacts of internalized and/or external weight-based oppression include risk of dementia (Sutin, Stephan, Robinson, Daly, & Terracciano, 2019), higher blood pressure (Rosenthal et al., 2013; Unger et al., 2017), arteriosclerosis (Udo, Purcell, & Grilo, 2016), type 2 diabetes mellitus (Udo et al., 2016; Wirth, Blake, Hébert, Sui, & Blair, 2014), minor cardiac conditions (Udo et al., 2016), metabolic syndrome (Pearl et al., 2017; Wirth, Blake, Hébert, Sui, & Blair, 2015), allostatic load (lipid/metabolic dysregulation, glucose metabolism and inflammation) (Vadiveloo & Mattei, 2017), impaired glucose metabolism (Tsenkova, Carr, Schoeller, & Ryff, 2010), cortisol and inflammatory markers (Jackson & Steptoe, 2018; Schvey, Puhl, & Brownell, 2014; Sutin, Stephan, Luchetti, & Terracciano, 2014), and oxidative stress (Tomiyama et al., 2014).

In the last decade or so, academic interest has broadened beyond investigating weight-based oppression as a risk factor for poor health, to include the role of positive body image as a health promoting factor. Positive body image is not merely the absence of negative body image (Tylka & Wood-Barcalow, 2015a, 2015b). Rather it is a holistic, multi-faceted concept that is shaped by

social identity, and encompasses a range of constructs including attitudes towards one's own body, such as body acceptance, body appreciation, and body love. It also includes adaptive approaches to investment in appearance, interpretation of information about bodies, rejection of media-promoted appearance 'ideals', and perceptions of body acceptance by others. These adaptive approaches are protective of one's physical and mental health and wellbeing (Tylka & Wood-Barcalow, 2015b).

Positive body image is associated with psychological health and wellbeing (e.g. self-esteem, self-compassion, optimism, and life satisfaction), physiological conditions (e.g. women's sexual functioning), and behaviours related to intuitive eating and physical activity (Tylka & Wood-Barcalow, 2015b). A 2019 systematic review of the effectiveness of programs aiming to promote positive body image in adults found that studies with strong or moderate methodological quality provided evidence that such programs improved body appreciation, body esteem, and functionality satisfaction, particularly for women (Guest et al., 2019).

The Health at Every Size® (HAES®) model offers a humane health promotion approach to reducing weight-based oppression and increasing body positivity (Bacon, 2010; O'Hara & Taylor, 2014; Tylka et al., 2014). (Health at Every Size® and HAES® are registered marks of the Association for Size Diversity and Health, a not for profit professional association, to prevent misappropriation of the terms for non-HAES® oriented products or services (Association for Size Diversity & Health, n.d.-b)). HAES® is a weight-inclusive rather than weight-centred or weight-normative model that focuses on health and wellbeing improvement (O'Hara & Taylor, 2018; Tylka et al., 2014). It rejects the practices of labelling people according to numerically-based categories of weight or body mass index (BMI) and actively trying to reduce people's weight and thereby change their BMI classification. In the social justice-based HAES® approach, weight is sidelined, but not excluded. It cannot be excluded because of the significant role of internalized and external weight-based oppression as health determinants. In other words, in the HAES® approach, weight matters because of the way people are treated based on their weight. Society is not weight neutral, and the negative impact of weight-based oppression on the health and wellbeing of higher weight people must be acknowledged and addressed. The HAES® approach therefore addresses both internalized and external weight-based oppression.

The HAES® approach supports policies, processes and environments that enhance the holistic health and wellbeing of people of all shapes and sizes. It does not claim that people are automatically healthy at any size across the weight spectrum (small, medium or large), but rather that all people deserve to be treated with dignity and respect, and provided with fair access to opportunities and environmental conditions that enhance their health and wellbeing, irrespective of their body weight. This weight-justice approach is consistent with the Right to Health, as articulated in the aspirational Universal Declaration of Human Rights (article 25) (United Nations General Assembly, 1948), the legally binding International Covenant on Economic, Social and Cultural Rights (article 12 and general comment 14) (United Nations General Assembly, 1966a) and International Covenant on Civil and Political Rights (articles 24 and 26) (United Nations General Assembly, 1966b), and subsequent human rights declarations and covenants (O'Hara & Gregg, 2012).

The HAES® approach can be operationalized in the treatment of poor health at the individual level, and in health promotion action at the individual, group, organisation and population levels. At the individual level, the HAES® approach encourages people to reorient their behaviors towards increasing intuitive eating, joyful physical activity and body positivity, reducing internalized weight-based oppression, and building resilience to external weight-based oppression. In addition, the HAES® approach goes beyond the individual level to addressing the social, economic, political, and

environmental determinants of health and wellbeing related to food, physical activity, body positivity and weight-based oppression (O'Hara & Taylor, 2014). As such, the HAES[®] approach is consistent with critical health promotion (O'Hara & Taylor, 2014; Taylor, O'Hara, Talbot, & Verrinder, 2020). Critical health promotion is a social justice approach to health promotion that is underpinned by a system of values and principles that supports the reflective process of explicitly identifying and challenging dominant social structures and discourses that privilege the interests of the powerful and contribute to health and wellbeing inequities. Critical health promotion values include the holistic health paradigm, salutogenic approach, socio-ecological science, focus determined by equity, empowering engagement processes, comprehensive use of evidence and theory, and others (Taylor et al., 2020). The HAES[®] principles adopted by ASDAH in 2013 reflect many of these values (Association for Size Diversity & Health, n.d.-a), including the socio-ecological scientific approach of working at multiple levels. However, due to its origins as an alternative approach to improving the health and wellbeing of individuals, research that is explicitly named as HAES[®]-based has been predominantly focused on the individual level, with the individual person as the unit of analysis. As such, most of the initiatives that have used the HAES[®] approach would be more accurately referred to as HAES[®]-informed, rather than HAES[®]-based, with comprehensive socio-environmental level action absent from many initiatives.

In the past 15 years, several studies have investigated the impact of HAES[®]-informed programs on individuals' health and wellbeing indicators. Two systematic reviews (Bacon & Aphramor, 2011; Clifford et al., 2015) and a subsequent randomized-controlled trial (Mensing, Calogero, Stranges, & Tylka, 2016) demonstrated that the HAES[®]-informed approach was more effective in improving various aspects of physiological, psychological and behavioral factors than usual care or weight loss treatments. Such evidence suggests that the HAES[®]-informed approach is superior to tested alternatives at improving a broad range of individual level health parameters.

The smaller number of studies that have addressed environmental level action have focused on developing and testing the impact of school and university curricula. These studies demonstrated that HAES[®]-informed curriculum initiatives led to improved body image, self-esteem, and eating attitudes in children (Kater, Rohwer, & Londre, 2002; Niide, Davis, Tse, & Harrigan, 2013), intuitive eating, body esteem, anti-fat attitudes, and dieting behaviors in university students (Humphrey, Clifford, & Morris, 2015), and HAES[®]-related knowledge, attitudes, beliefs, and skills in teachers (Shelley, O'Hara, & Gregg, 2010). These studies and other HAES[®]-informed community programs have generally involved group or classroom-based activities implemented over a period of weeks or months. As this format is quite intensive, it precludes widespread adoption in settings that do not have the human or financial resources to implement medium or long-term programs.

In addition to programs that are explicitly HAES[®]-informed, there have been various attempts to develop brief health promotion initiatives to address individual-level components of the approach, without necessarily naming them as HAES[®]-informed. A 2010 systematic review of 16 studies aiming to reduce internalized weight-based oppression found mixed evidence of effectiveness (Danielsdóttir, O'Brien, & Ciao, 2010). Since then the results have been more encouraging. Improvements in factors such as body satisfaction, anti-fat attitudes, implicit and/or explicit weight bias have been demonstrated as a result of professional development workshops for preservice teachers (Russell-Mayhew et al., 2015), three one-hour tutorials for public health students on the genetic and environmental determinants of higher weight (O'Brien, Puhl, Latner, Mir, & Hunter, 2010), a one hour interactive audio-visual presentation (Hilbert, 2016), and a one hour dissonance-based

activity delivered by undergraduate students to high school girls (Halliwell, Jarman, McNamara, Risdon, & Jankowski, 2015). However, even a one hour activity requires significant organisation, resources, and time commitment.

Very brief activities have also seen some evidence of effectiveness. A number of studies focused on female university students have demonstrated improvements in anti-fat attitudes and weight stigma. These programs include spending five minutes thinking about a nostalgic event that involved interacting with a higher weight person (Turner, Wildschut, & Sedikides, 2012) and brief exposure to images of higher weight models (Smirles & Lin, 2018). Not all very brief programs have been successful. In one study, rapid exposure to positive images of higher weight members of the general public and celebrities resulted in a significant increase in anti-fat attitudes (Flint, Hudson, & Lavallee, 2013). These studies all involved images or thoughts about other people.

Studies involving images or thoughts about people themselves have seen some success. Improvements in body satisfaction have been demonstrated in brief programs involving pairing photos of participants with positive stimuli (smiling faces) and other bodies with neutral or negative stimuli (neutral or frowning faces) (Aspen et al., 2015), writing self-compassion letters (Moffitt, Neumann, & Williamson, 2018), writing gratitude statements about one's own body (Geraghty, Wood, & Hyland, 2010; Wolfe & Patterson, 2017), and self-compassion meditation training (Albertson, Neff, & Dill-Shackleford, 2015). These studies provide some guidance for brief health promotion activities to increase body positivity and reduce internalized weight-based oppression as individual-level components of the HAES[®] approach. Addressing these components at the individual level also builds capacity to challenge external weight-based oppression, "and vice versa in a positive feedback loop" (Wann, 2009) (p. xii).

Research on health promotion action to reduce weight-based oppression and enhance body positivity is absent from the Arab region. Given the significant body of evidence demonstrating the relationship between population changes in body weight, weight-based oppression, body dissatisfaction and negative health outcomes, and the health promoting role of body positivity, particularly for girls and women, it is imperative that research studies begin to develop and test health promotion initiatives to address these issues.

The aim of this study was to evaluate the impact of a brief HAES[®]-informed activity on body positivity and internalized weight-based oppression in female students at Qatar University. A comprehensive HAES[®]-based health promotion initiative would require the inclusion of activities to address all of the individual-level and environmental-level components of the HAES[®] principles. However, this was beyond the scope of this research study. As such, the activity is more accurately referred to as a HAES[®]-informed initiative. The activity was designed to explicitly address the individual-level aspects of three of the five HAES[®] principles. It is hoped that improvements in body positivity and internalised weight-based oppression will contribute to building the internal resources required for young women to advocate for structural change to address the systemic determinants of weight-based oppression, consistent with Wann's proposed positive feedback loop (Wann, 2009) (p. xii).

2. Materials and methods

2.1. Development and implementation of the activity

Undergraduate public health students at Qatar University were studying the HAES[®] approach as part of the public health course *Contemporary Health Issues* in Fall semester, 2019. Qatar University is a segregated campus, and the public health degree is only

Table 1
Components of the *Love Your Body* activity and the related HAES® principles.

Love Your Body components	Related HAES® principle
Yay!Scale™	Weight inclusivity Respectful care Health enhancement
Affirmation sticker	Weight inclusivity
Photograph with sticker	Health enhancement
Postcard with photograph and gratitude statements	Health enhancement
Additional ad hoc discussions between participants and student organisers	All principles

available to female students. As such all students in the course were women. As an extra-curriculum activity, a group of students from this class volunteered to plan and implement a brief activity informed by the HAES® approach for other female students at the university. Two other undergraduate public health students not in that class (HA and SE – hereafter referred to as the student researchers) were responsible for developing and implementing the impact evaluation for the activity, in conjunction with the course professor (LOH), as part of a student research project.

The activity, which the student organisers decided to call *Love Your Body*, was implemented in the women's food court at Qatar University in November 2019. The women's food court is in a building that is only accessible to female students, as well as female and male staff and faculty. *Love Your Body* comprised four stations staffed by the student organisers. Student organisers for each station were provided with specific training by the course professor (LOH) to ensure consistency with the HAES® principles (Association for Size Diversity & Health, n.d.-a) and the Red Lotus Critical Health Promotion Model, which includes the values and principles of critical health promotion (Gregg & O'Hara, 2007; Taylor et al., 2020).

The *Love Your Body* activity space was colourfully decorated and attracted many female students. The sole inclusion criterion for participation in the research project was being a female student in any degree program at Qatar University. All students who approached the *Love Your Body* activity were therefore regarded as potential participants. Exclusion criteria for the research project were female or male staff or faculty. No male staff or faculty attended the activity. Female staff or faculty were allowed to participate in the activity but were not included in the research project. Potential participants were informed about the evaluation study by the student researchers and provided with the project information sheet. Those who agreed to participate were asked to sign the consent form and complete the measures before undertaking the *Love Your Body* activity. Those who did not agree to participate in the study proceeded directly to the activity. The components of the *Love Your Body* activity and their relationship to the HAES® principles are summarized in Table 1.

The first station involved participants stepping on a Yay!Scale™ (Herskowitz, 2012; Wann, n.d.) (Fig. 1), a body weight scale developed by artist and fat liberation activist Marilyn Wann, in which the numbers have been replaced with positive affirmations such as *amazing*, *beautiful*, *glorious*, *wonderful*, and *awesome*. English and Arabic versions of the Yay! Scales™ were custom made by Wann for this activity. The student organisers had collaboratively decided on the terms to be used on the scales so that they would be culturally appropriate. Their final criterion was that the term had to be acceptable to use in the company of their grandparents. The purpose of the Yay!Scale™ station was to disrupt the normative view of the relationship between weight and health. This station

addressed the component of the HAES® principle of *Weight Inclusivity* that is focused on rejecting the idealizing or pathologizing of specific weights (Association for Size Diversity & Health, n.d.-a). When participants came to the scale to be 'Yayed', the student organisers at this station discussed this principle with the young women in a light-hearted but purposeful and deliberate manner. Student organisers at this station also discussed with participants the need to end weight bias and stigma, which is consistent with the HAES® principle of *Respectful Care* (Association for Size Diversity & Health, n.d.-a).

After receiving their Yay results, many participants asked what they 'really' weighed and what BMI category that placed them in. The student organisers used this opportunity to reinforce the rejection of pathologizing of specific weights, and that standard numerical scales do not diagnose health status but do reinforce weight stigma. Consistent with this principle, we deliberately did not collect actual or self-classified weight from the participants. This would have been contradictory to the HAES® principles informing the activity, and the critical health promotion value of doing no (more) harm (Aphramor, 2020, 12 May; Taylor et al., 2020). Issues related to body positivity and weight-based oppression are not limited to higher-weight individuals, and as such, it was deemed not necessary or desirable to collect information on weight.

The other purpose of the Yay!Scale™ was to provide an alternative outcome for a practice steeped in fear and anxiety for many women. To address a general reluctance for the young women to step on a set of scales, particularly in public, the students working on this station were repeatedly required to reinforce that the scales were not standard body weight scales, and that rather than causing them distress (which is what the young women were indicating), the Yay!Scale™ would make them happy and were therefore health promoting. Thus being Yayed also addressed the HAES® principle of *Health Enhancement* by supporting personal practices that improve human wellbeing, including attention to individual emotional needs (Association for Size Diversity & Health, n.d.-a). Many participants, including those who were initially reluctant to step on the scales, requested to be Yayed on both English and Arabic scales as their results were different in each language. They indicated that they wished to double the health promoting benefit of the affirmations.

After being Yayed on the scale, participants proceeded to the second station, where they were given a sticker with the same affirmation/s, such as *I am amazing*, *I am awesome* etc. in Arabic and/or English (Fig. 2), and asked to place it on their chest or somewhere clearly visible. The purpose of the sticker was to reinforce and extend the impact of the positive affirmation from the Yay!Scale™, and to display to other participants a wide variety of 'Yay' results amongst the participants. This addressed the HAES® principle of *Weight Inclusivity* by demonstrating the inherent diversity of body shapes and sizes. Participants happily compared their Yay results and congratulated each other on their different affirmations.

At the third station, participants had their photo taken with the sticker/s clearly visible. Although some Muslim women prefer not to be photographed, most of the participants for this activity chose to do so as they were able to choose whatever pose they wished, and some chose to cover their faces for the photo. Participants were not excluded from the study if they chose not to be photographed. Participants were reminded that the photographs were for them to use as they chose, and that no digital copies of the photographs were being stored. Instant cameras were used specifically to address this ethical and cultural concern. Photos were printed immediately and given to the participants.

Participants then proceeded to the fourth station, where they were given a postcard on which to stick their photo, and write three things they are grateful for about their body (Fig. 3). Participants



Fig. 1. English and Arabic versions of the Yay!Scale™.



Fig. 2. English and Arabic stickers.



Fig. 3. Gratitude postcard.

were encouraged to keep the postcard and place it somewhere visible for them to reflect on whenever they wished. The photograph and postcard activities were designed to address the HAES® principle of *Health Enhancement* by supporting personal practices that improve human wellbeing (Association for Size Diversity & Health, n.d.-a). After completion of the fourth station, participants were requested to complete the evaluation measures again, and reminded that they would be followed up later.

The whole activity required about 10–15 minutes to complete, excluding the completion of the pre- and post-activity evaluation measures. Many participants chose to spend additional time at the activity, comparing and congratulating each other on their Yay!Scale™ results, deciding on their photo poses, thinking carefully about their gratitude statements, encouraging their friends to participate, and engaging in discussion with the student organisers about the HAES® principles, including the two principles that were not the explicit focus of the activity: *Eating for Wellbeing*, and *Life Enhancing Movement*. The length of time spent at the activity and the topics of discussion with each participant were not recorded.

2.2. Evaluation of the activity

A quasi-experimental mixed methods pre-post evaluation design was used to evaluate the impact of the activity, with quantitative assessment of body positivity and internalized weight-based oppression before the *Love Your Body* activity, immediately afterwards, and 10 weeks later. Due to the nature of the activity, and the inability to determine in advance the number of potential participants, or to manipulate the number of participants during the activity, no power analysis was conducted in advance.

The measures were completed by participants in Google Forms on the student researchers' computer tablets at the pre- and post-activity time points. At the 10-week follow up, the Google Forms link to the measures was emailed to participants. All participants gave written informed consent before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Institutional Review Board of Qatar University (approval number 1145-EA/19).

The study was undertaken from the epistemological position of constructivism, which acknowledges that people's experiences are socially constructed, and that the researchers' design of the project, influence on the data collection, and interpretation of the findings are all subject to social construction. Our interest in this research project is a direct result of our personal and professional experiences. LOH is a health promotion academic and practitioner, a HAES® and fat liberation advocate who has been involved in the development of HAES®-informed programs in schools, universities and the community for over 20 years. She has lived experience of external and internalized weight-based oppression, and has actively worked to live by the HAES® principles over that same time. HA and SE are senior undergraduate public health students who became interested in the HAES® approach through interaction and classes with LOH. They also have lived experience of external and internalized weight-based oppression. These experiences shaped this project design, implementation and evaluation, and the interpretation of the results.

2.3. Measures

Outcomes of interest were body positivity and internalized weight-based oppression. Body appreciation, one of the components of body positivity, was assessed using the Body Appreciation Scale 2 (BAS-2) (Tylka & Wood-Barcalow, 2015a) and two subscales from the Fat Attitudes Assessment Toolkit (Cain, 2019).

2.3.1. Body appreciation

The BAS-2 includes 10 items such as 'I respect my body', 'I take a positive attitude towards my body' and 'I am attentive to my body's needs.' The response scale includes five options from 'never' (= 1) through to 'always' (= 5). Scores are averaged with a higher average score indicating greater body positivity (Cronbach's α pre-activity = .895, post-activity = .927, follow-up = .833). Due to an administration error, the item 'I am comfortable in my body' was mistakenly omitted from the questionnaire.

2.3.2. Size acceptance and body acceptance

The FAAT includes a number of subscales that can be used as stand-alone instruments (Cain, 2019). Although many of the subscales would have been useful, we were mindful of the context in which the instruments were being administered, and decided to select only two of the subscales in order to reduce the time burden on participants. The Size Acceptance subscale (FAAT-SA) and Self-Reflection on Body Acceptance subscale (FAAT-SR) were selected to complement the BAS-2. The FAAT-SA represents popular ideas from the Size Acceptance movement, and includes six items such as 'We should celebrate all bodies', 'Size acceptance is an important social movement', and 'We need more positive images of fat people in the media.' The FAAT-SR focuses on participants' acceptance of their own bodies and their body weight, and includes four items such as 'I feel happy about my weight', 'I do not feel defined by my body weight', and 'My self-esteem is not impacted by my body weight.' The response scales for both subscales includes seven response options from 'strongly disagree' (= 1) through to 'strongly agree' (= 7). Scores are averaged for each subscale with higher average scores indicating greater size acceptance and self-reflection on body acceptance (Cronbach's α for size acceptance pre-activity = .755, post-activity = .878, follow-up = .876, and for self-reflection on body acceptance pre-activity = .738, post-activity = .607, follow-up = .822).

2.3.3. Internalized weight-based oppression

Internalized weight-based oppression was assessed using the 11 item Modified Weight Bias Internalization Scale (M-WBIS) (Pearl & Puhl, 2014). The instrument includes items such as 'I feel anxious about my weight because of what people might think of me', 'I hate myself for my weight', and 'My weight is a major way that I judge my value as a person.' The response scale includes seven response options from 'strongly disagree' (= 1) through to 'strongly agree' (= 7). Two positively worded items are reverse scored. Scores are averaged with a higher score indicating greater internalized weight bias (Cronbach's α pre-activity = .878, post-activity = .932, follow-up = .642).

The four instruments were administered online prior to and immediately after the activity, and 10 weeks later. Demographic information was collected at the pre-activity time point only.

2.3.4. Open-ended questionnaire

In addition to the four instruments, an open-ended online questionnaire was used for more in-depth exploration of the impact of the *Love Your Body* activity on participants at the 10-week follow up. Items in the questionnaire related to participants' perceptions of the activity and the effect it had on them (Table 2).

2.3.5. Instrument face validation

All instruments were translated into Arabic by the student researchers, and pilot tested with the student organisers, all of whom are native Arabic speakers. This was followed by a group cognitive interview with the student organisers to discuss the interpretation of the instruments and the translations. Amendments to enhance the quality of the translations were made as a result of

Table 2
Items in the open-ended questionnaire.

The <i>Love Your Body</i> activity included stepping on a Yay Scale, receiving a sticker with the Yay Scale affirmation, taking a photo, placing the photo on a postcard, and writing statements of gratitude about your body beside the photo. How did you feel about the <i>Love Your Body</i> activity?
What did you like about it?
Why did you like that part?
Was there anything you didn't like about the activity? If yes, what was it and how did it make you feel?
Where did you put your postcard after the event?
Was it easily visible to you?
How often did you look at the postcard? What did you feel when you looked at it?
How often did you read the gratitude statements? What did you feel when you read them?
Did you notice any changes or differences in your feelings towards your body since the event? If yes, please describe these further.
Do you have any other comments you'd like to make about the impact of the activity on your feelings about your body?

this process. No amendments were made to the English language versions of the instruments.

2.4. Data analysis

For quantitative data analysis, we used one-way repeated measures ANOVA tests to compare means between the three different time points, with the Bonferroni correction for multiple comparisons. Post-hoc pairwise comparison tests using the Bonferroni correction were used to determine the nature of the differences in means across the three time points. Statistical Package for the Social Sciences (SPSS) version 26 was used to analyze the data.

Content analysis was used to analyze the responses to the open-ended questionnaire. A three phase process consisting of preparation, organizing and reporting was used (Elo & Kyngäs, 2008). In the preparation phase, all of the researchers read and re-read all of the responses separately to familiarise themselves with the data. In the organizing phase, to address the aim of the study to evaluate the impact of the activity on body positivity and internalized weight-based oppression, two of the researchers (HA and SE) coded responses based on the apriori concepts of body acceptance, self and size acceptance, and internalized weight-oppression, thus mirroring the constructs in the quantitative analysis to enable triangulation of results. We also coded responses according to whether participants indicated these impacts had occurring during and/or immediately after the activity, and how these were sustained or changed over time, again to enable triangulation of results. LOH reviewed all of the coded data and provided additional coding. Any disagreements in coding were resolved through discussion and agreement. We then examined the coded data to identify patterns and connections.

3. Results

3.1. Quantitative results

A total of 38 female undergraduate and masters students completed at least one of the measures at the pre-activity, post-activity or 10-week follow up times. Socio-demographic characteristics of the participants are presented in Table 3. Summary data for the outcome variables at each time point, and the time effect and pairwise comparisons across the three time points are presented in Table 4. There was a decline in the number of participants that completed each measure at the pre-activity stage, from 38 participants completing the BAS-2, to 32 completing the M-WBIS. This reflects the order of the measures in the questionnaire, with the highest completion rate for the measure presented first and the

Table 3
Sociodemographic characteristics of participants.

Sociodemographic characteristic	Total (N = 38)
Age	
Mean (SD)	20.13 (2.49)
Range	17–27
Nationality	
Qatari	12 (31.6 %)
Non-Qatari Arabs	18 (47.4 %)
Asian	6 (15.8 %)
African	2 (5.3 %)
Marital status	
Married	1 (2.6 %)
Never married	36 (94.7 %)
Do not wish to disclose	1 (2.6 %)
Degree level	
Diploma	9 (25 %)
Bachelor's degree	26 (72.2 %)
Masters	1 (2.8 %)
College year	
First year	14 (36.8 %)
Second year	7 (18.4 %)
Third year	11 (28.9 %)
Fourth year	4 (10.5 %)
Fifth year or above	2 (5.3 %)
Economic status	
Financially challenged	2 (5.3 %)
Financially stable	17 (44.7 %)
Financially comfortable	17 (44.7 %)
Wealthy	2 (5.3 %)

lowest for the final measure. Participants were on a break from classes and were eager to get to the activity, which resulted in some participants not completing all measures. This pattern was also noted in the post-activity completion rate, which was lower than the pre-activity rate, with only 24 participants starting the questionnaire and 19 completing it. The lower number of participants for the post-activity questionnaire may have resulted from the nature of the activity, whereby participants had already experienced the fun activity, and were reluctant to use more of their break time completing the questionnaire again. In contrast, the follow-up questionnaire was administered online, and participants were able to complete it at their leisure, with no time constraints posed by having to get to class. As a result, there was no drop-off in the number of participants completing items across the four measures.

There was a high number of missing values within each scale, reducing the number of complete responses across the three time points to between 9 and 11 depending on the scale. Despite this, in pairwise comparisons, body appreciation and self-reflection on body acceptance both had significant improvements with strong effect sizes from pre-activity to post-activity time points and no significant change from post-activity to the 10-week follow up, indicating a sustained effect over time. There was no significant time effect for size acceptance or weight bias internalization.

3.2. Results from open-ended questionnaire

Thirteen participants completed the open-ended questionnaire administered at the 10-week follow up. Responses provided insight into participants' perceptions of the activity, and the nature of its impact on them during the activity, immediately after the activity, and in the 10-week period since the activity.

3.2.1. Impact during the activity

Participants felt that the activity was fun and creative and gave them a sense of happiness and positivity. One participant recalled, "I look at the picture that was taken of me and I remember how great the experience was." The activity also had a social impact with participants commenting on how it brought people together, increased

Table 4
Scores for body appreciation, size acceptance, self-reflection on body acceptance, and weight bias internalization at pre-activity, post-activity and 10-week follow up time points, and time effect and pairwise comparisons across the three time points.

Measure	Mean (SD) for full sample	F(degrees of freedom) for time effect	p-value for time effect	partial η^2 for time effect	Mean difference pre-activity to post-activity for pairwise comparison (95 % CI)	p-value for mean difference pre-activity to post-activity	Mean difference post-activity to follow up for pairwise comparison (95 % CI)	p-value for mean difference post-activity to follow up
Body Appreciation								
(scale 1–5)								
Pre-activity (<i>n</i> = 38)	3.82 (0.71)	7.046(2,9)	.014	.61	0.596 (0.16–1.03)	.008	–0.424 (–1.236–0.388)	.494
Post-activity (<i>n</i> = 24)	4.39 (0.65)							
10-week follow-up (<i>n</i> = 30)	4.17 (0.54)							
Size Acceptance								
(scale 1–7)								
Pre-activity (<i>n</i> = 34)	5.69 (1.15)	1.679(2,9)	.240	.272	0.545 (–0.266–1.356)	.247	–0.409(–1.814–0.996)	1.000
Post-activity (<i>n</i> = 21)	5.8 (1.54)							
10-week follow-up (<i>n</i> = 30)	5.82 (1.21)							
Self-reflection on Body								
Acceptance								
(scale 1–7)								
Pre-activity (<i>n</i> = 36)	4.71 (1.55)	16.717(2,9)	.001	.788	0.977 (0.489–1.465)	.001	–0.091 (–1.045–0.863)	1.000
Post-activity (<i>n</i> = 21)	5.31 (1.48)							
10-week follow-up (<i>n</i> = 30)	5.63 (1.28)							
Weight Bias								
Internalization (scale								
1–7)								
Pre-activity (<i>n</i> = 32)	2.92 (1.32)	2.438(2,7)	.157	.411	–0.273 (–0.957–0.411)	.790	0.475 (–0.212–1.161)	.212
Post-activity (<i>n</i> = 19)	2.86 (1.61)							
10-week follow-up (<i>n</i> = 30)	2.62 (0.78)							

their sense of belonging and connection with other young women students, and gave them a feeling of joy from seeing other young women benefiting from the activity. One participant commented, “I loved it when I saw other students enjoying the event.” Participants highlighted that the activity was important and much needed because young women are subjected to strong negative messaging about their bodies.

3.2.2. Immediate impact on body positivity and internalized weight-based oppression

Participants reflected on the impact of the activity as a whole, as well as specific components of the activity. Overall, the activity provoked participants to reflect on the concept of accepting their bodies and being grateful for their capabilities. The Yay!Scale™ created a sense of excitement and happiness, with one participant commenting, “I was very excited to see what word I would get. This made everyone feel good instead of worrying about their weight.” The Yay!Scale™ was considered to be impactful because as one participant noted, “it proved that your weight does not determine who you are,” and another commented, “For the first time I did not care about the numbers on the scale. This made me realize that numbers will never define me or measure how beautiful I am.” Beyond feeling good in the moment, the activity also provoked intentions to take action, with one participant noting “It also made me reflect on what exactly do I like about my body, and this reflection made me realize that I don't appreciate my body enough and I needed to do something about it.”

3.2.3. Sustained impact on body positivity and internalized weight-based oppression

Participants reported that the activity resulted in sustained positive impact on their beliefs, attitudes and practices related to body positivity and rejection of internalized weight-based oppression, with a predominant focus on body positivity. Participants noted that since the activity, their self-confidence and feelings of gratitude and appreciation for their body had increased. The postcard with the photo and gratitude statements were perceived to have contributed strongly to these impacts. Participants kept their postcards in different places such as their handbag, car, closet, home office, diary, book or memory box. Some participants looked at the postcard daily and others from time to time, but most participants read the gratitude statements many times. Participants felt that looking at the postcard more often boosted their self-love and appreciation, positivity, happiness, and gratitude to their bodies. Reflecting on the gratitude statements prompted participants to think about other things that they are grateful to their body for.

Enhanced gratitude focused on both functionality and pleasure. One participant shared, “I used to look at my body as an appearance and a measure of how beautiful and attractive I am. After the activity, I look at my body as my source of strength. I became very grateful for my body for allowing me to live in it, for giving me the strength to cope with life, for allowing me to do the things that I love and that make me happy.” Another participant commented, “I now appreciate my body more than ever, and I thank god for giving me this body. I now love every single detail about my body and cherish it because I now consider all these imperfections to be beautiful parts of who I am, parts that I will refuse to change.”

These more positive attitudes towards their bodies translated into health promoting self-care practices; “I appreciate my body a lot more. Every inch of fat, every stretch mark, every wrinkle, every scar, every blemish, and every hair on my skin is a part of who I am. I now love and cherish every single detail about my body. And most importantly, I became more eager to maintain its health and make it stronger.” Another participant commented specifically on her new behaviours; “I now listen to my body and what it needs, I feed it whatever it craves, I give it the rest it needs, and I train

it as hard as I can. I used to have a bad relationship not only with my body image but also with food. Now, I am no longer scared of eating to satiety and I no longer under-fuel my body. Also, I used to refuse to lift weights or do any type of strength training because I was too scared of becoming ‘bulky’ and putting on extra muscle weight because I used to think that being skinny is the only way I can feel attractive.” Beyond the impact on themselves, some participants also expressed the hope that the activity be extended to the broader community, where young women are exposed to negative and harmful weight-based oppression on a regular basis.

4. Discussion

The purpose of this study was to evaluate the impact of brief health promotion activity informed by the Health at Every Size® approach (O'Hara & Taylor, 2014) on body positivity and internalized weight-based oppression among Qatar University female students. The four stations of the activity were designed to address individual-level aspects of the HAES® principles (Association for Size Diversity & Health, n.d.-a), particularly *Weight Inclusivity*, *Health Enhancement*, and *Respectful Care*. Ad hoc discussions with participants also addressed the principles of *Eating for Wellbeing* and *Life Enhancing Movement*.

The health promotion activity was planned and implemented by a group of female university students, for activation with their peers at university. This collaborative process of working with people most impacted by issues, rather than ‘intervening’ with their lives, is a core principle of critical health promotion (Gregg & O'Hara, 2007; Taylor et al., 2020). From a process perspective, having students lead the planning, implementation and evaluation processes provided an opportunity for the young women impacted by these issues to be engaged in a health promotion activity for their peers that is evidence-based and beneficial – two of the core values of critical health promotion (Gregg & O'Hara, 2007; Taylor et al., 2020). The focus of the *Love Your Body* activity was on challenging preconceived notions about body weight and building gratitude and appreciation for all bodies in a fun, social setting. The holistic health paradigm encompassing aspects of physical, mental and social health and wellbeing and the salutogenic approach focusing on health and wellbeing creation rather than a reductionist biomedical approach focusing on disease risk reduction are also core principles of critical health promotion (Gregg & O'Hara, 2007; Taylor et al., 2020).

Despite its relative brevity, the HAES®-informed activity led to significant increases in body appreciation and self-reflection on body acceptance immediately after the activity, and no significant reductions at the 10-week follow up, indicating possible sustained benefits over time. Analysis of the qualitative responses from the 10-week follow up indicated similar improvements in body positivity beliefs, attitudes and practices, but also reductions in internalized weight-based oppression, particularly with respect to body dissatisfaction. It is possible that the 13 participants who self-selected to respond to the open-ended questions were those that experienced the largest impact from the activity. Further research is required with a larger sample to determine if these effects are demonstrated both quantitatively and qualitatively in a larger proportion of participants.

The stations within the activity were each purposefully designed to disrupt internalized weight-based oppression and enhance body positivity, in alignment with the HAES® principles. The aim of the Yay!Scale™ station was to confront internalized weight-based oppression by overtly challenging the ideas that numerical scales provide an ‘objective’ measurement of a health indicator, and that the number produced by the scale is an indicator of a person's value or worth. The Yay!Scale™ replaces these hegemonic ideas by offering an alternative use for a scale, and an alternative out-

come. Although the word terms on the English and Arabic versions of the Yay!Scale™ were derived by the students based on terms they like to use and hear as compliments, and not from a systematic study (apart from having to pass the grandparent test), they were allocated to the participant via a piece of technology traditionally associated with providing 'objective' numerical results.

As such, the impact of the activity was more meaningful than if the same terms had been given to the participant via a more 'subjective' or non-technological method, such as drawing a compliment from a pack of cards or spinning a wheel. A compliment given in this way would have been seen as purely random, and not specifically relevant to the participant. The relative position of the word terms on the Yay!Scale™ has no meaning, yet participants were fully invested in finding out their exact result, discussing this with others, and even being Yayed on the other scale so that they could 'officially' have two 'objective' results.

In our study there was no statistically significant impact of the activity on internalized weight-based oppression, although there was a trend downwards immediately after the activity. At the 10-week follow up, numerous participants mentioned that being Yayed on the scales had caused them to deeply question the value of the number on the scale and challenge its relationship to their self-worth. No other studies to date have specifically evaluated the impact of the Yay!Scale™, however anecdotal reports of activities using the Yay!Scale™ echo the results of this study in disrupting hegemonic beliefs about the merit of numerical scales and their 'objective' results (Herskowitz, 2012).

A small number of studies have investigated the impact of very brief activities on aspects of internalized weight-based oppression. One study that had some similar aspects to the *Love Your Body* activity involved exposing women in a conditioning activity to photos of themselves paired with smiling faces, and photos of other women paired with neutral or frowning faces. This conditioning was conducted for five minutes a week over a four-week period, and resulted in immediate and sustained reductions in body dissatisfaction (Aspen et al., 2015). In our study, we provided the compliment sticker to the participants and asked them to take a photo with the sticker visible in the photo. The photo was then stuck to the postcard and participants were asked to put the postcard in a place where it could be viewed regularly. As such, the photo of the participant was paired with the positive term on the sticker, and the participant was repeatedly exposed to this for as long as they kept the postcards. In addition, the gratitude statements were included with the photo and the positive term. As such, the idea was for participants to be repeatedly exposed to the paired image of themselves and the positive term together with things they are grateful to their body for.

The activity as a whole increased body appreciation and self-reflection on body acceptance at the post-activity point which appeared to be sustained at the 10-week follow up. This was consistent with the qualitative results that suggested the enhancements in positive attitudes towards participants' own bodies were sustained over time. These findings were consistent with those in the conditioning study that repeatedly exposed participants to paired images of themselves with smiley faces (Aspen et al., 2015).

Writing gratitude statements about one's body has been demonstrated to be effective at increasing body positivity. Our findings were consistent with such studies, despite their far longer two-week time frame, compared to our 10-minute activity. In studies with British adults (Geraghty et al., 2010) and American college students (Wolfe & Patterson, 2017), writing gratitude statements led to improvements in body esteem and appearance satisfaction (elements of body positivity), and reduction in body dissatisfaction (an element of internalized weight-based oppression). The sustained impact of our very brief activity on self-reflection on body acceptance was undoubtedly due in part to the ongoing exposure to the

gratitude statements, in conjunction with the photo which included the sticker.

Young women around the world are bombarded with negative messages about their bodies, and young Arabic women are no different. Although the full extent of weight-based oppression has not been studied in this region, numerous studies have demonstrated that rates of internalized weight oppression and disordered eating in the Arab region are as high or higher than in countries in the global north (Fatima & Ahmad, 2018; O'Hara, Tahboub-Schulte, & Thomas, 2016; Qutteina, Nasrallah, Kimmel, & Khaled, 2019; Saleh, Salameh, Yhya, & Sweileh, 2018). The HAES® approach provides a framework for health promotion initiatives to address these issues at the individual, group, organisation or population level.

Operationalizing the HAES® approach in a small-scale health promotion initiative such as the *Love Your Body* activity does not address the systemic structural determinants of health and well-being, and this is a major limitation of working at this scale with individuals. We have critiqued approaches that acknowledge (or not) the structural nature of weight-based oppression yet operate at the level of the individual, and indeed, we could be subjected to the same critique. However, this activity was designed and implemented by and for young women to explicitly address the individual-level aspects of three of the five HAES® principles, with ad hoc opportunity to address the remaining two principles. *Love Your Body* was a HAES®-informed activity based on a theoretical model that challenges social constructions of body weight as problematic and women's bodies as objectified and necessarily performative. It was also developed in alignment with the values and principles of critical health promotion. These solid theoretical foundations contributed to its effectiveness at enhancing body appreciation and body acceptance. It is hoped that improvements in these factors will help build the capacity of young women to advocate for structural change to address the systemic determinants of weight-based oppression. Body acceptance and appreciation may be required foundations for young women to voice their objections to societal structures that attempt to strip them of such internal resources.

The study had a number of limitations. Firstly, the quasi-experimental design and lack of a control or comparison group does not allow for a definitive causal relationship to be established between the activity and improvements in body positivity. The lack of a comparison group also meant we could not control for the good-participant demand characteristic (Nichols & Maner, 2008), where participants answered the post-activity questions based on what they thought we wanted to hear. In addition, the significant improvements in body positivity demonstrated in this study were potentially due to response bias, in that participants who had the most positive experiences may have been more likely to complete the follow-up questionnaires. This may also explain the differences between the qualitative and quantitative results related to body dissatisfaction. The quantitative results showed no improvements in weight bias internalization; however, the participants reported in the qualitative responses that their body dissatisfaction had significantly reduced. It is possible that the 13 participants who self-selected to complete the open-ended questions at the 10-week follow up were those that perceived the most improvements in body dissatisfaction.

The second limitation relates to the sample size, attrition and power of the study. The sample consisted of 38 participants at baseline, 24 at post-activity time point, and 30 participants at the 10-week follow-up. Although there was some attrition from baseline to post-activity, and from baseline to follow-up, the sample may still have been large enough to provide statistical power to detect changes in all measures of body positivity and internalized weight based oppression. However, there was a high number of missing values for each of the measures, particularly at the post-

activity time point. This resulted in a relatively low number of complete cases (between 9 and 11) for each measure that could be used in the time effect and pairwise comparison statistical analyses. The study was therefore likely to be underpowered to detect statistically significant changes in each of the measures.

Thirdly, the nature of the activity varied between participants, with some participants staying around and engaging in discussions with the student volunteers about body positivity and weight-based oppression. Some of these discussions related to the individual level concepts addressed in the activity, and some related to the social construction of the value of different body shapes and sizes. We did not record the time that participants spent at the activity nor which participants engaged in what type of conversations. As such, we did not control for this factor, which in essence became an additional component of the activity. Future studies should attempt to standardize this element of the activity and/or note the length and content of these additional discussions.

A fourth limitation relates to the instruments used. As noted in the research design section, one of the items was omitted from the BAS-2 due to an administrative error. This error may have influenced the results for this scale. All instruments were translated from English to Arabic by the student researchers, pilot tested with the student organisers, and discussed in a group cognitive interview with the student organisers. However, the Arabic versions of the scales were not validated using psychometric testing. Further research to validate the Arabic versions of these instruments is recommended. Due to these limitations, the results should be interpreted with caution.

Strengths of the study relate to the enacting of core values and principles of critical health promotion (Taylor, O'Hara, & Barnes, 2014, 2020). The activity was planned and implemented by a group of young female students from the same demographic group as the priority group that the activity focused on. Working collaboratively with the priority group is a fundamental value in critical health promotion (Taylor et al., 2014, 2020) and enacting this value helped ensure that the activity was responsive to the needs of the priority group, and was socially and culturally appropriate. The activity and the evaluation strategy addressed body positivity as a health promoting or salutogenic asset, and did not take a deficit approach by focusing solely on weight-based oppression as a health risk factor. This responds to the critical health promotion value of a salutogenic approach (Taylor et al., 2014, 2020). The activity was designed carefully to avoid the use of stigmatizing language, images or actions related to body weight. This reflects the critical health promotion value of non-maleficence or do no (more) harm (Aphramor, 2020, 12 May; Taylor et al., 2014, 2020).

4.1. Conclusion

The study provides the first insights into the effects of a brief health promotion activity focused on increasing body positivity and reducing internalized weight-based oppression in Qatar. The Health at Every Size®-informed activity had a positive effect on the body positivity of the young women participating in the study. The activity is relatively simple and as such could feasibly be rolled out to settings such as schools, workplaces, healthcare settings, and other universities as a peer-led health promotion activity to improve holistic health and wellbeing. Research should focus on larger scale implementation and appropriately powered impact and outcome evaluation of the activity.

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CRedit authorship contribution statement

Lily O'Hara: Conceptualization, Methodology, Funding acquisition, Validation, Formal analysis, Project administration, Resources, Writing - original draft, Writing - review & editing. **Hanaa Ahmed:** Investigation, Formal analysis, Writing - original draft, Writing - review & editing. **Sana Elashie:** Investigation, Formal analysis, Writing - original draft, Writing - review & editing.

Declaration of Competing Interest

The authors report no declarations of interest.

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