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Body norms, body image, and media in a market-integrating indigenous population in Argentina: A mixed-methods investigation

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Abstract

Objective: The aim of this study was to investigate the relationship between media, body norms, and body image among the Qom, a market-integrating indigenous population in Argentina that has historically idealized larger body sizes.

Methods: With men and women ($n = 87$), we measured frequency of media/technology use through a Likert-type questionnaire. Using the Stunkard Figure Rating Scale, we asked participants to select the most healthy and ideal body size for their gender, as well as their own body size. We calculated body dissatisfaction as the difference between ideal and own body size. We conducted semi-structured interviews to describe the role of media in body norms and body image.

Results: Media exposure was not significantly associated with perceptions of the "healthiest" or most "ideal" body sizes, nor body dissatisfaction. Men and women perceived categorically "middle-range" body sizes as both healthy and ideal, differing from a similar study in 2010, where larger bodies were favored. Interviews revealed that: media is not recognized as affecting body norms and body image, but is conceptually associated with cultural loss (Theme 1); a "dual stigma" of fatness and thinness is perpetuated by peers, family, and healthcare providers (Theme 2); and body acceptance is highly valued (Theme 3).

Conclusion: In this context, while some body norms have changed over time, the impact of media on body norms and image may be secondary to influences from individuals' social networks, and may be occluded by norms favoring body acceptance.

1 | INTRODUCTION

Body norms are the sociocultural values that deem certain body sizes as healthy or unhealthy, good or bad, or attractive or unattractive, or in need to be changed (Hardin et al., 2018; McCullough & Hardin, 2013). Historically and cross-culturally, large bodies were valorized as symbols of beauty and health (Brown &

Konner, 1987). For example, fatness in women has been viewed in many cultures as signifying health, beauty, marriageability, and motherhood. In early 20th century Fellahin Egyptian society, heavier women were viewed as better able to provide warmth for children (Ammār, 1954). In traditional Papua New Guinean society, fatness in men was associated with wealth and prosperity, which was embodied by political leaders known as "Big Men" (Strathern, 1971). In late 19th century Europe and the United States, bodies that were "plump" were socially and culturally associated with health, beauty, wealth, and prosperity (Hutson, 2017). While bodies can be described in terms of size and shape, in this paper, we focus on body size, using the terms "fatness," "heaviness" and "largeness" interchangeably.

Along with rising obesity prevalence (Prentice, 2006), industrialization and economic modernization are often accompanied by a growing idealization of thinness, increasing body dissatisfaction, negative body image, and growing perceptions that fatness is representative of poor health, unattractiveness, and laziness (Brewis et al., 2011; Brewis et al., 2018; Brewis & Wutich, 2012). In the 1910s, corresponding with changing lifestyles, economic modernization, and growing skepticism of "overabundance" (Schwartz, 1986), U.S. body norms began to transition from idealizing plump bodies to stigmatizing fatness as medical and social problems that required solving (Hutson, 2017). Changes in body norms also accompany urbanization. For example, among the Bamileke in Cameroon, an ethnic group with high rates of rural–urban migration, bodies that were, by Western biomedical standards, "overweight" were considered normal and healthy, yet women idealized body sizes that were thinner than their own (Cohen et al., 2013). Among both urban Ghanian and Senegalese women, overweight (but not obesity) was widely viewed as the most socially desirable body size (Appiah et al., 2016; Holdsworth et al., 2004), yet urban Senegalese women of higher socioeconomic status preferred thinner body sizes (Holdsworth et al., 2004). Less is known about how body norms and body image are formed in indigenous populations in Latin America, who in recent years have experienced rapid nutritional transitions, economic change, and increasingly higher rates of high body fat (Montenegro & Stephens, 2006).

As body norms change globally, it is important to note that norms designating a "healthy" body sometimes diverge from norms of "ideal" or "attractive" bodies. With the spread of global public health interventions targeting obesity, strict definitions of a healthy body may exist alongside or interact with somewhat different conceptions of which body sizes are "attractive" or "ideal." In an illustrative example, Yates-Doerr's ethnography of highland Guatemala showed that while women were aware of and upheld arbitrary clinical definitions of a healthy body (e.g., a "normal" body mass index [BMI]), there still existed more traditional norms of "attractive" bodies upheld mainly by older women that emphasized fuller figures adorned with elaborate, handmade clothing as the standard of feminine bodily beauty (Yates-Doerr, 2015, p. 85–89). The divergence of healthy and ideal body norms and individual's lived experiences may lead to what some term "psychological ambivalence," or a conflict between what is recognized as the" healthy" standard of body size (e.g., clinical definitions of BMI and the negative evaluation of fatness) and what is felt to be ideal, attractive, beautiful or socially-desirable (Hardin et al., 2018; Maio et al., 2007). In this study, we investigate body norms across these two dimensions -- "healthy" and "ideal."

Body image refers to a mental representation of the size, shape, and form of the body (Slade, 1988). According to the sociocultural model of body image (the "Tri-Partite Model"), large-scale sociocultural factors shape body norms, which are transmitted through sociocultural agents, such as media, peers, and family (Tiggemann, 2012). These ideals are internalized by individuals, such that differences between idealized body sizes and self-perceived body size lead to body dissatisfaction (Tiggemann, 2012 p. 12–18; Thompson et al., 1999). Media exposure is thought to be a key agent of the sociocultural model. With extensively edited imagery, Western media portrays thin bodies as healthy and beautiful, while designating fatness as unhealthy and unattractive (Sepúlveda & Calado, 2012). In addition to older media, such as television, newer social media platforms are peer-based and highly interactive, allowing users to feature idealized versions of themselves. As such, the newer platforms may accelerate or intensify the internalization of thin idealism and negative body image (Cohen & Blaszczynski, 2015; Fardouly & Vartanian, 2016; Perloff, 2014). In line with the sociocultural model, social media use in populations across the U.S. and Europe is linked to body dissatisfaction and preferences for thinness, especially among women (Fardouly & Vartanian, 2016; Hogue & Mills, 2019; Manago et al., 2015; Perloff, 2014; Saiphoo & Vahedi, 2019; Tiggemann, 2014). However, these effect sizes tend to be small.

In populations experiencing economic modernization, media exposure is thought to play a critical role in shaping body norms and negative body image (Fardouly & Vartanian, 2016; Swami, 2015). In a large cross-cultural survey, exposure to global media was associated with preferences for thinner bodies and body dissatisfaction (Swami et al., 2010). In Nicaragua, television

consumption better predicted women's thin idealism than levels of acculturation, food security, education, and income (Boothroyd et al., 2016). After Fiji's national introduction of television in the 1990s, rural Fijian girls adopted thin idealism and demonstrated the beginnings of weight preoccupation, weight control behaviors, and body disparagement (Becker, 2004; Becker et al., 2002, 2005). Participants discussed how they idealized television characters as role models for body size and felt pressured to undergo weight control regimes after viewing advertisements for exercise equipment. In some cases, participants expressed these sentiments without explicitly acknowledging an effect of media (Becker, 2004).

On the other hand, others suggest that media-projected thin idealism is not universally adopted, but instead rejected or sometimes re-interpreted based on cultural context (Anderson-Fye, 2011; Hardin et al., 2018). In urbanizing San Andres, Belize, despite increased exposure to U.S. media, adolescent girls "filtered out" media-portrayed messages of thin idealism through an ethos of body acceptance and preferences for a more full "Coca-Cola" body shape (Anderson-Fye, 2004). Ethnographic work in the Pacific Islands, where fat bodies are traditionally valued, revealed that media exposure was only one of a host of factors influencing body norms (e.g., public health interventions targeting obesity). As a result, body norms encompassed both fat and thin idealism and often contradicted each other (Hardin et al., 2018). While previous studies have investigated effects of older media (e.g., television), little research has examined how contemporary media (e.g., social media) impacts body norms and body image. Research investigating this contemporary media landscape (including both social media and conventional media) is particularly lacking in populations outside of the Western and industrialized world (Perloff, 2014). Both body norms, particularly weight-related stigma, and body image are integral to both metabolic and mental health (Brewis, 2014; Gillen & Markey, 2015; Schwartz & Brownell, 2004). Thus, understanding how contemporary media exposure affects locally held body norms and individually held body image is an important step in developing culturally appropriate interventions addressing the health risks of obesity and body-image-related mental health disturbances in marginalized and economically transitioning populations.

To address this knowledge gap, this mixed-methods study examines the relationships between media exposure, body norms, and body image among the Qom. The Qom are an indigenous population residing in the Gran Chaco region in northern Argentina. Traditionally, the Qom have been semi-nomadic hunter-gatherers (Valeggia & Tola, 1999). However, in the past century, the Qom have transitioned to a more sedentary lifestyle, calorically dense diets, and have experienced significantly higher rates of obesity and metabolic disease, as well as social injustice and discrimination, than in years past (Lagranja et al., 2015; Valeggia et al., 2010). At present, the Qom live in varying levels of acculturation across rural, peri-urban, and urban centers in Argentina, with communities situated in urban and peri-urban centers living more sedentary lifestyles and relying more on government subsidies and short-term labor (Valeggia et al., 2010). Historically, the Qom have preferred heavier bodies as symbols of beauty and health (Valeggia, ethnographic observation).

The present study focuses on NamQom, a peri-urban, market-integrating Qom community located near the provincial capital city of Formosa, Argentina. As citizens of Argentina, the community members of NamQom have free access to healthcare at the village medical clinic and at the hospital in nearby Formosa. Community members in NamQom engage with both Western biomedical and traditional forms of healing (de Bourmont et al., 2020). The community members of NamQom largely live below the poverty line, and household incomes are reliant on government subsidies and the sale of handmade goods (Valeggia & Tola, 1999). Overweight and obesity are highly prevalent in the community. In 2004, 58% of women and 37% of men were overweight and/or obese by World Health Organization BMI standards (>25 kg/m^2; WHO, 2000). By 2010, these values increased to 76% and 63% (Lagranja et al., 2015). A 2010 cross-sectional study investigating perceptions of body size suggested that older Qom women residing in NamQom perceive overweight bodies as healthy, while younger women perceive thinner bodies as healthy; the study also found that men prefer clinically "normal"-BMI body sizes (Daiy et al., 2019).

We propose the hypothesis that exposure to media influences body image and body norms through internalization of what is portrayed as ideal and/or healthy. We expect that due to extensive market integration in the past decade and the recent global advent of social media platforms (e.g., Facebook, Instagram), perceptions of the healthiest body held by the Qom have shifted to favor thinner bodies since 2010, when previous data were collected (Daiy et al., 2019). We predict that greater media and technology engagement will be associated with perceptions that thin bodies are ideal and healthy, as well as greater body dissatisfaction. We assess how these perceptions differ by age and gender. To further understand the relationship between body size preferences and media use, we employ semi-structured interviews to describe participants' perspectives on media, body norms, and body image.

2 | METHODS

This study was conducted from June to August 2019 among Qom men, women, and adolescents ages 15–70 years in NamQom. We visited the homes of potential participants, explained the study in detail, and gave informational sheets to interested parties. Recruitment was carried out through snowball sampling, where we asked participants if they knew of anyone who would be interested in participating and following-up with potential participants accordingly. The researchers then returned several days to a week later to obtain verbal consent and assent (for participants under 18 years) for study participation, as written consent is not culturally appropriate in this context. This research protocol was approved by the Yale University Ethics Committee (#2000025431).

Data were collected at participants' homes. Using a portable scale and stadiometer, we measured participant height (m) and weight (kg) three times each, then calculated the mean value. We calculated BMI (kg/m^2) and categorized participants' weight status as underweight (<19.99 kg/m^2), "normal" weight (20.00–24.99 kg/m^2), overweight (25–29.99 kg/m^2), and obese (>30.00 kg/m^2) in reference to standards by the World Health Organization (2000). To measure participants' frequency of media exposure, we administered an 18-item Likert-type questionnaire (Cronbach's alpha = 0.70), which asked participants to recall whether they (or a family member) *owned* certain devices and social media accounts, whether they *actively used* these devices and accounts, and, if so, how *frequently* they used them. The 18-item Likert-type questionnaire was piloted in the field with test participants and subsequently modified for cultural appropriateness and content validity. We asked about both social media sites (e.g., Facebook) and devices (e.g., cell phones).

For the purposes of analysis, we later condensed the 18-item questionnaire into a 13-item dataset (Cronbach's alpha = 0.70) representing how frequently the individual participant actively used each site or device. We used the following 7-point scale: "1" or "Not applicable or never," "2" or "With less frequency," "3" or "Every couple of weeks," "4" or "1–2 days per week," "5" or "3–5 days per week," "6" or "Once a day," and "7" or "Many times per day." If a participant did not have access to a media platform/device, or said they never used it, then we categorized the response as "1" or "N/A or Never." Participants who used a social media platform or device, but were unable to recall how frequently they used it (i.e., responded "I don't know"; $n = 3$), were assigned the central value of "4."

Body norms were operationalized as perceptions of the healthiest and most ideal body. We used the Stunkard Image Scale (Stunkard, 2000), which contains 9 silhouettes with different body sizes (Supplementary Figure 1). While previous studies using the Stunkard scale have defined each score as a different BMI category (e.g., Jackson et al., 2014; Maupin & Hruschka, 2014), we report our results in terms of ranges of silhouette numbers, instead of specific BMI categories. The scale was gender-specific, such that men and women were asked to select silhouettes based on their identified gender. The scale has been previously validated in a similar population in rural Guatemala (Maupin & Hruschka, 2014). We asked participants to choose what they perceived as (1) the healthiest body size (HBS) (2) the "ideal" body size (IBS), and (3) their own, or current, body size (CBS). We operationalized the concept of body image quantitatively as body dissatisfaction and calculated body dissatisfaction (BD) as the absolute difference between IBS and CBS.

We conducted and recorded a semi-structured interview with participants in Spanish. Using a pre-defined series of questions, we asked them to elaborate on how they engage with media, their perceptions of their own body size and health, and how they perceived the role of media in influencing body image. We also asked follow-up questions when necessary. The full questionnaire and interview agenda are available in the online supplementary material.

2.1 | Quantitative analyses

A total of 88 individuals participated in this study. Participants with missing data ($n = 1$) were removed from the dataset, leaving a final sample size of $n = 87$ ($n = 23$ men and $n = 64$ women). BD was divided into three groups: IBS < CBS (participants selected smaller ideal body sizes than their current size), IBS > CBS (participants selected larger body sizes than their current size), and IBS = CBS (ideal and current body size were identical). To determine the relationships between age, gender, BMI, and body size preferences and body dissatisfaction (IBS, HBS, BD), we conducted Spearman's rho correlation tests, Chi-Square tests, and t-tests between relevant variables. Age was divided into categories for purposes of comparison (<=20 years, 21–40 years, 41+ years).

To identify the latent variables underlying participants' self-reported media and device usage, we conducted an exploratory factor analysis using the 13-item condensed dataset with frequency of site/device usage, using principal axis factoring, quartimax rotation, and scree plots to extract factors. We determined the main media and technology variables contributing to each factor by retaining variables with a correlation coefficient of >0.4 with the latent factor. We also calculated the mean of factor score for each variable (Factors 1, 2, and 3).

To assess whether media and technology use predicted body size preferences, we ran separate multiple linear regression models with the extracted factors predicting IBS, HBS, and BD, while including age, BMI, and gender as covariates. Lastly, we compared this dataset with Stunkard scale data from 2010, in which we asked participants in this population to choose the "healthiest" body size for their own gender. We compared the responses between the two time points using an unpaired t-test. A one-way analysis of covariance (ANCOVA) was conducted to assess differences between 2010 and 2019 HBS while controlling for age, gender, and BMI. We used SPSS v. 26 to conduct all statistical analyses.

2.2 | Qualitative analyses

All audiotaped interviews were transcribed and translated ($n = 55$; 40 women, 15 men). The sample of 55 interviews was a convenience sample: interviews that we did not record based on participant's requests, audiotaped interviews with poor audio quality (such that the interview responses were not transcribable), and interviews with missing audio files were excluded from analyses ($n = 33$). We employed inductive thematic analysis in examining semi-structured interview transcripts. Using open coding and frequent crosschecking, two researchers developed a preliminary codebook from the first 10 transcripts. The two researchers then coded all interview transcripts with the preliminary codebook. In consultation with a third researcher, the two researchers then created a codebook by collapsing, removing, and grouping categories until saturation was reached. All three researchers identified themes by clustering codes with similar underlying topics, then reviewing potential themes against the dataset. All qualitative data management and coding was completed in NVivo (QSR International, 2020).

3 | RESULTS

3.1 | Quantitative results

Most participants (74%; $n = 64$) were women. The mean overall age was 31.9 (± 1.5) years (Table 1). Most participants had overweight or obesity, with a mean body mass index (BMI) in the upper range of the overweight category (mean BMI [SD]: 29.7 kg/m^2 [6.0]; Table 1). While we measured media use individually, we note that some participants reported sharing certain devices (e.g., televisions) with their family members (Daiy, ethnographic observation). Participants' measured BMI was strongly positively correlated with their selected body size (CBS; Spearman's rho = 0.725; $p = .000$), suggesting that the Stunkard scale has reliability in this population.

TABLE 1 Descriptive statistics

	N (%)
Gender	
Men	23 (26.4%)
Women	64 (73.6%)
Age	
< = 20 years	18 (20.7%)
21–40 years	44 (50.6%)
41+ years	25 (28.7)
BMI Category (kg/m^2)	
Underweight	8 (2.9%)
Normal	57 (20.9%)
Overweight	85 (31.1%)
Obese	123 (45.1%)
Body dissatisfaction	
Ideal < Current Body Size	56 (52.9%)
Ideal > Current Body Size	20 (23.0%)
No dissatisfaction (IBS = CBS)	21 (24.1%)
Mean (SD)	
Age	31.9 (13.4)
Height (m)	1.6 (0.1)
Weight (kg)	76.8 (17)
BMI (kg/m^2)	29.7 (6.0)
Stunkard Silhouette: HBS	4.1 (1.1)
Stunkard Silhouette: IBS	3.9 (0.9)
Stunkard Silhouette: CBS	4.7 (1.6)

Participants most often used cell phones, television, WhatsApp, and Facebook, and less frequently used other tablets, Snapchat, dating applications, Twitter and Instagram (Figure 1). Exploratory factor analysis yielded three factors: "basic media/device repertoire", including cellphones, WhatsApp, Facebook, Google, and YouTube (Factor 1); "youth-associated" platforms and devices, including tablets, Snapchat, dating applications/websites (Factor 2); and "text and image-based social media," including Twitter and Instagram (Factor 3). The media sites and devices in Factors 2 (tablets, Snapchat, and dating applications) and 3 (Twitter, Instagram) were much less often used than those of Factor 1 (cell phones, Facebook, WhatsApp, Google and YouTube; Supplementary Table 1). There were no statistically significant correlations between gender and Factor 1, 2, or 3 scores (Table 3). However, age was moderately and negatively associated with mean Factor 1 score (Spearman's

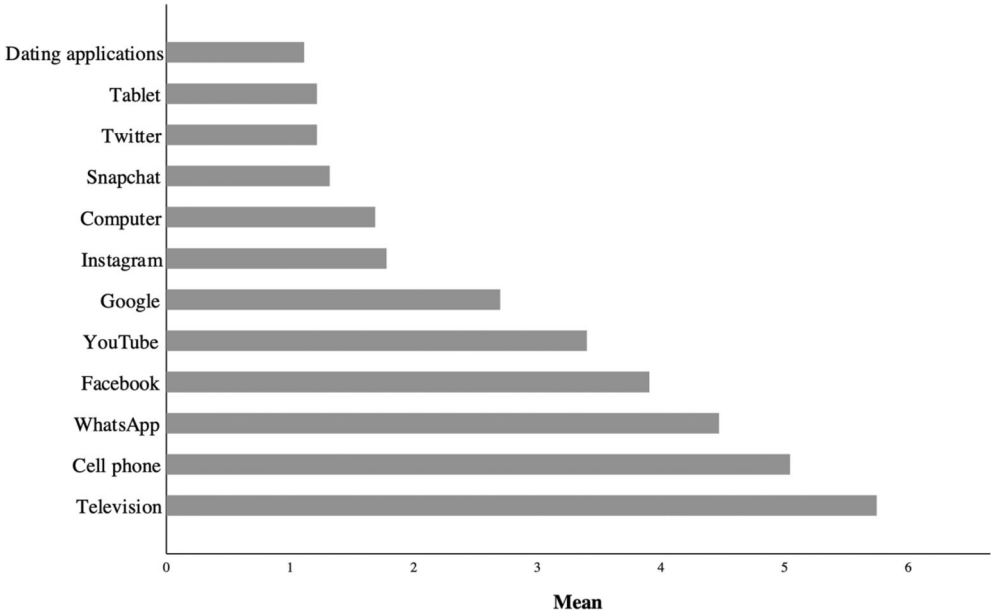

FIGURE 1 Mean frequency of use for media sites and devices (measured on a scale of 1–7)

rho = −0.484; p = .000; Table 3), indicating that the younger participants more frequently used media (particularly, the repertoire of cell phones, WhatsApp, Facebook, Google and YouTube) than older participants.

The analyses indicate that "middle-range" body sizes (Stunkard scores 4–6) are favored as healthy and ideal. Most men (78%) and women (72%) selected "middle-range" body sizes as the healthiest body size (mean HBS [SD] = 4.1 [1.1]; Table 1). A small portion of men (22%) and women (23%) selected a body size at the lower end of the scale (silhouettes 1–3) as the healthiest. In contrast, only 5% of women, and no men selected a heavier body size at the higher end of the scale (silhouettes 7–9) as the healthiest. In terms of ideal body size, 76% of all participants selected "middle-range" body sizes (silhouettes 4–6), while 24% selected leaner (silhouettes 1–3), and no participants chose heavier sizes at the end of the scale (silhouettes 7–9) as ideal (mean IBS [SD] = 3.9 [0.9]); this pattern did not differ appreciably by gender. Approximately half of the participants (52%) selected smaller ideal body sizes than their current size, while fewer participants selected ideal bodies that were either larger (23%) or the same size (25%) as their own (Table 2A). Age, gender, and BMI were not meaningfully associated with HBS or IBS by Spearman's rho correlations (Table 3). There were no statistically significant differences in mean HBS and mean IBS by gender (t-tests; mean difference HBS = − 0.038, p = .883 [95% CI: −0.549, 0.473]; mean difference IBS = −0.103, p = .640 [95% CI: −0.537, 0.332]). Similarly, body dissatisfaction did not differ meaningfully by gender (Pearson Chi-Square = 0.330; p = .848) nor age groups (Pearson Chi-Square = 5.587; p = .061).

TABLE 2A Multiple linear regression predicting IBS

	Unstandardized coefficients			
Model[a]	***B***	***SE***	***t***	***p***
Age	−0.001	0.010	−0.065	.948
Gender	0.095	0.231	0.413	.681
BMI	0.004	0.019	0.229	.819
Factor 1	0.105	0.067	1.565	.122
Factor 2	−0.073	0.140	−0.520	.604
Factor 3	−0.044	0.096	−0.464	.644

[a]Dependent variable: Ideal body size (IBS).

The frequency of media use was not associated with body size preferences according to multiple linear regression models. Media engagement (Factors 1, 2, and 3) was not significantly associated with IBS, HBS, and absolute body dissatisfaction when adjusting for BMI, gender, and age (Tables 2A–2C). Only Factor 1 showed a possibly meaningful association with HBS. However, this association disappeared after adjusting for Factor 2, Factor 3, BMI, gender, and age.

Perceptions of the healthiest body were more strongly associated with thinness in the present study (conducted in 2019), as compared to 2010. The 2010 sample and 2019 sample had similar distributions of BMI (in 2010, mean BMI of 29.5 kg/m^2 [95% CI: 28.8, 30.2 kg/m^2]); in 2019, 29.7 kg/m^2 [95% CI: 28.4, 30.9 kg/m^2]. The 2010 sample was more gender-balanced (51% women and 49% men) than the 2019 sample (74% women and 26% men), and had a slightly older age demographic (2010 mean [SD] = 37.6 [12.9] years; 2019 mean [SD] = 31.8 [13.4]

years in 2019; $p = .000$). Perceptions of the healthiest body differed between 2019 and 2010: participants in the 2019 sample selected a thinner HBS (2010 mean [SD] = 5.121 [1.818]; 2019 mean [SD] = 4.115 [1.050]; mean difference = 1.006 [95% CI: 0.603, 1.409]) as compared to participants in the 2010 sample (Cohen's d = 1.666; $p = .000$; Figure 2). While controlling for age, gender and BMI, there was a small statistically significant effect of Year (2010, 2019) on HBS (F [1, 355] = 40.0; $p = .000$; partial Eta squared = 0.101), indicating that Year explained a small part of the variance in HBS (10.1%), irrespective of the differences in the distributions of age, gender, and BMI between the 2010 and 2019 groups.

TABLE 2B Multiple linear regression predicting HBS

	Unstandardized coefficients			
Model[a]	***B***	***SE***	***t***	***p***
Age	−0.001	0.010	−0.065	.948
Gender	0.095	0.231	0.413	.681
BMI	0.004	0.019	0.229	.819
Factor 1	0.105	0.067	1.565	.122
Factor 2	−0.073	0.140	−0.520	.604
Factor 3	−0.044	0.096	−0.464	.644

[a]Dependent variable: Healthy body size (HBS).

TABLE 2C Multiple linear regression predicting absolute body dissatisfaction (IBS–CBS)

	Unstandardized coefficients			
Model[a]	***B***	***SE***	***t***	***p***
Age	0.012	0.012	1.105	.313
Gender	−0.063	0.296	−0.211	.833
BMI	0.073	0.024	3.054	.003
Factor 1	−0.063	0.86	−0.729	.468
Factor 2	−0.234	0.180	−1.300	.197
Factor 3	0.207	0.123	1.693	.094

[a]Dependent variable: Absolute body dissatisfaction (IBS–CBS).

3.2 | Qualitative results

Three themes emerged from the interviews: media as an agent of cultural loss (Theme 1), a dual stigmatization of fat and thin bodies (Theme 2), and the valuation of body acceptance as a necessary, lifelong process (Theme 3).

3.3 | Theme 1: Media and cultural loss

Many participants described social media platforms, television, and cell phones as powerful tools to connect with friends, family, and the outside world. Cell phones (often purchased at the city of Formosa and refilled with weekly data packages) and popular applications such as Facebook and WhatsApp were used to share public posts and stories, communicate with friends and family, coordinate events such as church gatherings and rugby matches, and to keep in touch with local, national, and global events. Television was used to watch Argentine and international television programming and films. Popular shows and films included *telenovelas* (soap operas) and U.S. action franchises, such as *Fast and Furious*. Photo- or video-

TABLE 3 Spearman's rho correlations between participant characteristics, media and technology use, and body size perceptions

	Age	Gender	BMI	Factor 1	Factor 2	Factor 3	Healthy body size	Ideal body size	Own body size
Age	—	−0.129	**0.495**	**−0.484**	−0.170	**−0.313**	−0.170	−0.031	**0.298**
Gender		—	0.021	−0.085	−0.146	−0.075	−0.038	0.066	0.075
BMI			—	−0.133	−0.125	−0.146	−0.052	0.062	**0.725**
Factor 1				—	**0.266**	**0.433**	**0.216**	0.166	0.038
Factor 2					—	**0.375**	0.131	−0.019	−0.113
Factor 3						—	0.199	0.057	−0.006
Healthy Body Size (HBS)							—	**0.256**	−0.002
Ideal Body Size								—	0.127
Own Body Size									—

The color of each cell responds to the magnitude of the effect size, or the strength of the association between two variables as measured by Spearman's rho. White represents no association (rho < 0.100); light gray represents a small association (0.100–0.290), gray represents a medium-sized association (0.300–0.490) and dark gray represents a large association (rho > = 0.500). Correlations in bold are statistically significant ($p = .05$).

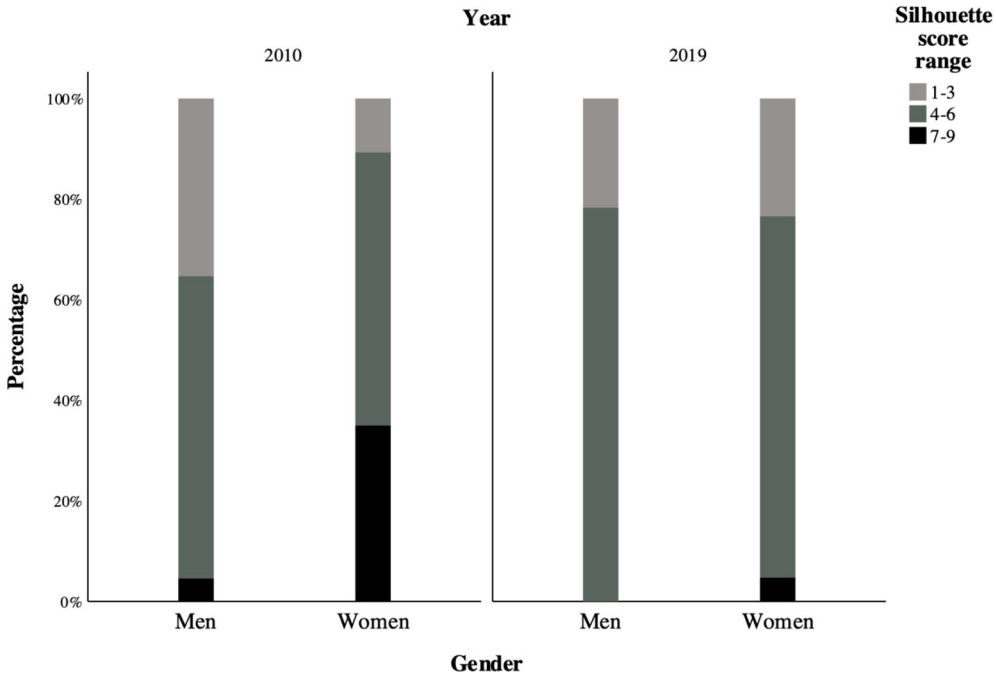

FIGURE 2 Healthy body size (HBS) silhouette score range by gender and year

based applications such as Instagram were less widely used, except for YouTube.

Importantly, participants rarely explicitly or implicitly noted any impact of media on local body norms or how they felt about their body size. Few participants explicitly acknowledged the relationships between media and body image in interviews, even when prompted. However, many participants expressed concerns about how cell phones and television led people to isolate themselves from the wider community. Participants discussed how cell phones and television led to disconnection from friends and family, as people "imprisoned" themselves with their devices:

"For me, it [social media] changes the culture a little bit. It's not like before, where I go there to someone's house... social media occupies them, that's all. My sister never visits us [anymore], she messages us, but she never visits us. She goes to work, she is not there all day, she goes to school, and all that, and then there is no more time to talk to her, and so we only message. Only Sundays are free." (Woman, 51 years).

"My daughter, who has a cell phone, hides things from me, through Facebook, through the computer. [She] calls anyone, but she doesn't tell me."(Woman, 33 years).

"...what made me go crazy was the TV. I didn't go out [...] I imprisoned myself with it." (Man, 26).

For many participants, these negative effects of media related to senses of loss of what participants considered cultural values and identity:

"It depends a lot on which one [which media type], but it is harmful, really harmful. I traveled to those [other Qom] communities in the region, and they have lost their values. When CDs and music videos started being released, there was an incredible change in these [Qom] communities, a lot of bad things. When the CDs started circulating, I visited my home community one time, and I felt an awful slump in my mood" (Man, 49 years).

"Through social media, a lot of customs are lost. Almost nobody talks as much, they almost don't get together as much, that is, they stay alone with those technologies." (Woman, 20 years).

In summary, participants viewed media as having a complex impact on everyday life: while media was seen as a valuable tool for communication with others and the world within and outside NamQom, participants also viewed media as an agent that created feelings of disconnection and distraction. For some participants, these feelings evoked a sense of cultural loss–a loss of community values, togetherness (e.g., long social visits with neighbors), and general cultural identity. Media was not associated, semiotically, with ideas about body size or how people felt about their bodies.

3.4 | Theme 2: Dual stigma

Interviews revealed body norms that were characterized by a dual stigmatization of "excessive" thinness and fatness as indicative of poor health. Thinness was stigmatized as a symbol of ill health and physical weakness. Similarly, individuals with excessive fatness were viewed as having ill health, being weak, "heavy," and lacking

strength to complete daily activities. Participants discussed wishing to or having attempted to lose or gain weight to obtain a size that was neither too thin nor too heavy. Contrary to our hypothesis, participants did not directly attribute these body norms to media sources. Instead, these body norms were sustained and transmitted through various non-media sociocultural agents. Among these agents, peers and family strongly influenced how individuals perceived what was a "good" body size and how they perceived their own bodies. In one interview, a woman described both concerns about other community members' opinions of her body size and her own concerns about her husband's body size:

"I feel good like this. I am good how I am. After, if you get skinny, they start to say that you are sick.

Interviewer: Do you think that the people that are really skinny are skinny because they are sick, or can people be skinny and be healthy?

That they are sick, because you notice the people that are sick. Fat people do not have strength either. See, my husband is fat sometimes. It hurts me how he is." (Woman, 24 years).

Interactions with healthcare workers at the local clinic (located within NamQom) also shape these body norms and stigma. Interactions with healthcare professionals were often accompanied by anti-fat attitudes that were rooted in Western biomedical conceptions that bodily appearance is something to be worked on and "achieved" (Becker, 2004). For example, one participant reported feeling comfortable with her body, but also accepted her doctor's recommendations that revolved around fitting a rigid BMI standard:

Interviewer: "How do you feel about your body?"

"I don't have anything to complain about [laughs]. Nothing more than that the doctor told me to go to the nutritionist. I have to lose weight. The doctor already told me that for my height, I need to have an adequate weight. I am conscious of that." (Woman, 26 years).

In short, interviews revealed that participants believed in the existence of a "right size" that was not consistent with either Western ideals of thinness or a traditional preference for fatness. This perception that there is a "right" body size seemed to exist alongside a dual stigmatization, where people perceived fatness and thinness to be equally unhealthy and "bad." This dual stigma and belief in the "right size" was perpetuated by social relationships, including peers, family, and healthcare workers.

3.5 | Theme 3: Body acceptance

This theme outlines the lifelong process of body acceptance that was discussed by many participants. When asked about how they felt about their body, many participants described feeling or aspiring to a peaceful relationship with one's body size, where the body was not actively liked, disliked, nor ignored in a neutral manner; here, we refer to this as body acceptance. Body acceptance was rooted in the idea that physical bodies were key parts of the whole self, and that learning to love oneself (physical body and all) was a lifelong process that required active work and learning. Pentecostal evangelical Christianity is widely practiced in NamQom, and for many participants, the process of body acceptance was tied to religious beliefs ("the body is a gift from God"). While participants reported that sometimes they felt dissatisfied with their body, the body was a "God-given" gift that should and could be accepted in its entirety:

"God made me like this, and I have to accept how I am." (Woman, 56 years).

Interviewer: "How do you feel about your body size? Do you like it or dislike it?"

"Yes, why wouldn't I like it? [laughs]. Those of us from the church, we are taught like that, to love our body, ourselves, and care for ourselves. See, some don't want to be like that, they want to change." (Man, 41 years).

Participants discussed how they often experienced challenges to their body esteem and body acceptance in their daily life, sometimes-through pressures from teasing and joking from peers and family. These challenges could be overcome by learning over time to accept one's body and actively creating a more positive state of mind. One woman explained that while she sometimes did not like her body size, she acknowledged that body acceptance was a sometimes-wavering process, and felt that she could accept her body with the right mindset.

"A lot of times, I've wanted to be more fat like my sisters [...] I want to have a more shapely body, is all [...] I received a lot of bullying, in school that is, they made fun of me. And I felt bad. And now I almost don't care what they say. Sometimes I am fine with my body. The most important thing is what one thinks, that is what I am confirming now." (Woman, 20 years).

In short, participants in this study practiced and valued body acceptance. In some cases, these ideas of body acceptance were rooted in Christian beliefs.

3.6 | Gender and age differences

Few gender- and age-based differences were present based on most of the extracted themes. Men ($n = 15$) and women ($n = 40$), as well as older (over 30 years [$n = 29$]) and younger (under 30 years [$n = 26$]) generations, all held similar perceptions regarding how media and digital technologies resulted in cultural change in NamQom (Theme 1). These demographic groups also similarly

reported on and expressed the stigmatizing ideas of fatness and thinness, and were concerned with achieving the "right" size (Theme 2). However, there were gender- and age-based differences in how body image was shaped, and how body acceptance was approached. Compared to men, women's body image, satisfaction, and desire to lose or gain weight was molded by commentary from peers and family–often friends at school or in the neighborhood, and mothers and sisters–that critiqued women's sizes and shapes, and pressured women to achieve a certain body size. Men, on the other hand, rarely mentioned the pressures of peers and were concerned about their weight when they felt uncomfortable or unable to complete physical activities. In one representative example of women's perceptions, a participant discussed how her mother and sister critiqued her post-childbirth weight gain, which, in combination with her own discomfort, motivated her to manage her weight:

"[...] After she [my daughter] was born, I began to gain weight. I felt that I was very fat, and my mom and sister told me [that]. I began to take care of myself, to have my body be in total movement. I drank water constantly, and I didn't want to eat at times." (Woman, 23 years).

As compared to young people, older adults did not evaluate their body size in terms of community opinions and gossip and were happy to accept their bodies (which they viewed as extensions of themselves) as constructed and given by God. Two examples are shown below:

"I understood that God created me like this. Why would I get sad? One day, I understood that the Creator, created people pretty and ugly." (Woman, 53 years).

I am not thinking that it is what God wants, if I gain weight or do not gain weight. The important thing is that my health is always good. (Woman, 42).

Another older man described how he felt his body size could be subject to judgment by others, but that due to his age, he did not concern himself about this:

"There are times that another person doesn't like you for [the size of] your belly and such, and you cannot take it [the weight] off. I would like to have a good body, to not have the stomach, but now, with my age, what can I do?" (Man, 58 years).

In summary, compared to men, women appeared particularly susceptible to negative body image induced by members of the surrounding community. Older generations were less subject to community pressures to modify their body size.

4 | DISCUSSION

Among the Qom, a market-integrating indigenous population in northern Argentina, media exposure does not seem to be strongly associated with perceptions of the healthiest or most ideal body size, nor body dissatisfaction. Our results contradict the notion that media exposure is a universal influence on body norms and body image (Swami, 2015). We offer potential explanations: peers, family, and healthcare providers may override or connect with the effects of media on changing body norms in this context, and the cultural valuation of body acceptance may protect individuals from media-projected thin idealism. This suggests that media exposure may not directly impact body norms and image, and may be secondary to or even occluded by influences from social relationships, including peers, family, and healthcare providers. Through a mixed-methods design and a focus on a population in transition, this study brings new understanding to the phenomenon of changing body norms and body images within economically transitioning populations.

Body norms changed over time to disfavor extremes in this context: "middle-range" body sizes (silhouettes 4–6) were perceived as ideal and healthy. Healthy body perceptions appear to have shifted quickly–over the course of 9 years–to favor these "middle-range" sizes, while both fatness and thinness were assigned negative connotations. The rapid pace of this body norm shift aligns with findings in other settings. In Samoa, over the course of roughly two decades (1995–2018), one study showed that the range of body sizes considered "normal" had narrowed, with decreased tolerance for extremes; in addition, the percentage of women preferring body sizes smaller than their own perceived size increased considerably over time, from 49% to 83% between the 1995 and 2018 groups (To et al., 2020).

Body norms are embedded within local contexts (Wiley & Cullin, 2020). As such, the widespread preference for "middle-range" sizes, as well as the dual stigma of fatness and thinness observed in this study may be related to NamQom's social, cultural, ecological, and epidemiological context. Body norms have been shown to correlate with nutritional and disease-related ecological factors, including food insecurity and infectious disease burden (Holdsworth et al., 2004; Maupin & Brewis, 2014; Puoane et al., 2010). In NamQom, integration into the market economy and a loss of traditional subsistence practices has led to rising rates of obesity and metabolic syndrome (Lagranja et al., 2015). NamQom has also been subject to pervasive food insecurity, poverty, childhood stunting, and a high prevalence of gastrointestinal and respiratory infections, including tuberculosis (Olmedo et al., 2020; Valeggia & Ellison, 2003; Valeggia & Tola, 1999). The health clinic in NamQom and its geographic location at the center of the community may facilitate frequent contact with healthcare providers

trained in Western biomedical modes of care, resulting in widespread ideas about body size that are rooted in somewhat arbitrary clinical standards of "normal" and "healthy." The existence of over nutrition alongside food insecurity and pathogenic burden, as well as the clinic's presence at the center of the community, may lead to frequent contact with both larger body sizes associated with cardio metabolic risks and thin body sizes associated with illness and food insecurity. As a result, bodies at either extreme are viewed as less healthy and ideal, and even ascribed negative attributes (e.g., "sickliness"), while "middle range" body sizes are viewed as healthy, ideal and the "normal" standard. Similar findings have been observed elsewhere. For example, in a highland Guatemalan community, where over- and undernutrition are equally prevalent, body sizes at either extreme of clinically "normal" bodies are perceived negatively, with more food-insecure individuals holding less negative perceptions of larger bodies (Maupin et al., 2021). Weight-based stigma has powerful effects on mental health, risk of disordered eating, and metabolic disease risk (Brewis, 2014). Moreover, fat-negative stigma has become more prevalent worldwide (Brewis & Wutich, 2012). Food insecurity and other contextual factors have remained relatively consistent in NamQom during the 2010–2019 period (Valeggia, ethnographic observation); thus, it remains unclear whether these factors are primary drivers of the nine-year shift in body norms and whether these factors would necessarily drive additional shifts in norms in the future. These contextual factors may, however, explain other findings, such as the dual stigma of fatness and thinness. Thus, future metabolic health interventions and research in this community and in similar market-integrating contexts should account for the dual-stigmatization of fatness and thinness.

Although interviews reflected mostly negative perceptions about thinness and fatness, body sizes can be ascribed complex meanings beyond singular and dichotomous "positive" and "negative" connotations. For example, among pastors in Samoa, large body size held meanings of desirable wealth and abundance that dynamically interacted with meanings of undesirable illness and corpulence (Hardin, 2015). Additional mixed-methods and ethnographic research is warranted to further contextualize body norms in economically transitioning populations such as NamQom to delineate potentially complex meanings of body size.

While we observed a difference in body norms over 9 years, media exposure was not appreciably associated with body size preferences and body dissatisfaction in this population. This contrasts to research in Western populations, where media exposure has been frequently associated with preferences for thinner bodies, internalization of the thin ideal, and negative body image (Fardouly & Vartanian, 2016; Hogue & Mills, 2019; Manago et al., 2015; Perloff, 2014; Saiphoo & Vahedi, 2019; Tiggemann, 2014; Barkett et al., 2008). Even in ethnographic narratives in Western contexts, media is readily recognized as leading to poor body image (Paquette & Raine, 2004).

We offer two explanations for this finding. First, other sociocultural pressures–specifically peers, family, and healthcare providers–may have more salient impacts on people's ideas about body size. Similarly, media exposure may influence individuals indirectly via social networks, thus "getting in the water" and being transmitted to individuals by peers and family. The Tri-Partite Model posits that in addition to media, peers and family are strong influencers of body norms and body images (Thompson et al., 1999). Although not measured quantitatively in this study, interviews revealed that peers and family member influences shaped participants' ideas about body size. In Western populations, peer- and family-based teasing, encouragement to diet, and other forms of body disparagement are correlated with higher body dissatisfaction, particularly among young women (Kluck, 2010; Menzel et al., 2010). In contrast, in the cultural context of NamQom, peer and family members upheld both thin idealism/fat negativity and fat idealism/thin negativity, possibly reflecting the mosaic of body norms and NamQom's status as a community in transition. Healthcare providers also appeared to influence body norms and body image in this setting. The influence of healthcare providers has been observed in similar contexts. For instance, ethnographic work with Mayan women in Guatemala argues that body norms changed over time not only through "metrification" (the creation of a rigid clinical standard), but also by facilitating notions that emphasize possession and "responsibility" for the body (Yates-Doerr, 2015). In NamQom, clinic-based healthcare providers may impose arbitrary clinical standards of "normal/healthy" body size and a notion of the body as controllable, possibly leading to internalization of thin idealism and resultant body dissatisfaction (Anderson-Fye, 2011, p. 248). Acting together, the effects of peers, family, and healthcare providers may influence body norms and body image independently of or in conjunction with media, leading to body norms that favor clinically "normal" sizes and encompass both Western (fat stigma) and traditional elements (thin stigma).

It is also possible that media influences perceptions of the body in this context, but does so indirectly through individuals' social relationships. This has been reported in previous research: among adolescent girls in Fiji, television exposure influenced girls' ideas about their bodies not only directly, but also by influencing their peers and

family, who in turn reinforced thin-idealism and habits of weight management. In this way, media exposure may influence ideas about body size more indirectly by circulating through individuals' social networks. The NamQom community has likely experienced increases in device and media use in the 2010–2019 time period that have been observed at the national level; for example, in Argentina, adult smartphone ownership increased by 17%, while adult social media use increased by 6% between 2015 and 2017 alone (Pew Research Center, 2018). A growing presence of media and digital technologies in the community and the effects on social networks may have partly driven the nine-year shift in healthy body norms and may continue to drive shifts in the future. Research in similar contexts could incorporate standardized measurements of peer- and family-related pressure on body perceptions to further illuminate how media shapes individuals' ideas about the body indirectly through social networks (e.g., friend and family dimensions of the Perceived Sociocultural Pressure Scale, [Stice et al., 1996]).

Second, it is possible that the cultural valuation of body acceptance may have protected individuals against media-projected thin idealism. While many participants expressed dissatisfaction with their bodies, the value of body acceptance was pervasive. This was characterized by beliefs that the body is "*a gift from God*" and should be accepted with time. Because low self-esteem renders individuals more susceptible to thin ideal internalization and body dissatisfaction (Perloff, 2014; Stice et al., 1994; Thompson et al., 1999), a mindset of positive body image may protect individuals against media-projected thin idealism. Research in other contexts supports this idea: in San Andres, Belize, adolescent girls navigated Western thin idealism brought by transnational media with a protective form of body acceptance, defined by the phrase "*never leave yourself*"(Anderson-Fye, 2004). A qualitative description of body acceptance in Canadian Aboriginal youth found that body acceptance and body pride were tied to cultural identity, being healthy and taking care of oneself, and "*being thankful for being Native*" (McHugh et al., 2014). Although not as well-understood as negative body image, body acceptance and other aspects of positive body image have been shown to be key preventative measures against eating disorders (Shaw et al., 2009) and can help improve metabolic health (Zanon et al., 2016). Additional qualitative research should focus on the relationships between body acceptance, body image, and body norms within populations undergoing sociocultural and economic change.

Lastly, while we did not observe meaningful relationships between media exposure and body norms and image, interviews revealed that media acted, more generally, as an acculturative agent that changed the way the community interacted, and that resulted in feelings of cultural loss. Acculturation refers to changes in beliefs, values, identity, or behaviors that are found in minority culture individuals (e.g., indigenous), resulting from extended contact with majority culture individuals (Fox et al., 2017). Acculturative stress, or the stress resulting from moving between cultures (Berry et al., 1998), has been associated (albeit in complex, non-monotonic ways) with body image concerns, eating disorder symptomology, and body dissatisfaction in immigrant populations in the U.S. and industrializing populations (Ayala et al., 2007; Becker et al., 2007; Joiner & Kashubeck, 1996; Sussman et al., 2007; Warren & Rios, 2013). Previous literature documents how within indigenous communities in North America, feelings of cultural loss result from daily reminders, including reservation living, a loss of language and traditional family structure, and a loss of traditional practices (Cromer et al., 2018; Whitbeck et al., 2004). As in many indigenous populations worldwide, since the mid-20th century, the Qom have experienced disruptions to traditional lifestyles; loss of territory; and forced assimilation into non-indigenous cultural, political, social, and economic sectors (Valeggia & Tola, 1999). Combined with the widespread use of media in NamQom, these historical and ongoing experiences may partly underlie how many participants viewed the use of cell phones and social media platforms as another encroachment on tradition and community life, such as by leaving everyone distracted by their devices and replacing cherished social visits with instant messaging. According to this study's participants, media also held a positive role in the NamQom community, with platforms like WhatsApp and Facebook used as tools to communicate with friends, family, and other indigenous communities in the Gran Chaco region. Although less is known about how media and body image interact with indigeneity, ethnographic work with indigenous communities in southwestern Amazonia and Canada illuminated how social media platforms can be used as tools of community resilience, political activism, and cultural preservation (Molyneaux et al., 2014; Virtanen, 2015). Future research conducted in collaboration with indigenous communities could further explore how feelings of cultural loss relate to media engagement and perceptions of the body, as well as how media is utilized to positively influence body image.

4.1 | Gender and age differences

Gender and age are thought to be strong determinants of the internalization of body size norms and body image,

with women and younger generations more often susceptible to media-driven internalization of the thin ideal and body dissatisfaction (Esnaola et al., 2010; Sepúlveda & Calado, 2012). While body size norms differed by gender and age in 2010, with older women perceiving categorically overweight bodies as healthiest (Daiy et al., 2019), in this group, we found no statistical differences between genders and ages. Despite this, the qualitative interviews suggested that body norms and body image were internalized differently based on gender. That Qom women internalized commentary from peers and family–and managed their weight accordingly–aligns with research in Western contexts, where women are more in-tune to body norms projected by their local social networks than men (Phares et al., 2004; Stanford & McCabe, 2002). We also found that compared to younger people, older generations (men and women alike) more readily internalized the value of body acceptance. This finding contrasts with that of Western contexts: for example, research in the U.S. and Canada indicates that while men become more accepting of their bodies with age, women persistently hold negative body image, body dissatisfaction, and engage with weight management behaviors (Marshall, 2014; Paquette & Raine, 2004). Future health interventions should account for the susceptibility of younger generations and women to negative body image.

5 | LIMITATIONS

This study has limitations that warrant addressing. First, the fact that our sample was not gender-balanced and biased towards women may have affected our results. Although we attempted to recruit equivalent numbers of men and women, men were often away from the home for work and in general, women were more interested in participating than men, both of which biased our gender distribution. The reluctance by men to participate may be related to gender norms, as both researchers conducting the interviews were women. Second, this study does not account for the fact that men's body norms and body image often exist along different physical dimensions than women's, such as muscularity. Third, our finding of no statistical association between frequency of media exposure and body perceptions/body dissatisfaction may be the result of our small sample size. Fourth, the researchers who performed data collection were both outsiders to the community and non-indigenous (except for co-author PA); this may have shaped how participants responded to interview questions. Fifth, the functionality of various social media platforms may play a role in relationships between media exposure and body norms and image in this population. Appearance-focused use of social media, such as viewing photos on Instagram, is associated with body image disturbance, while more general media use has smaller or negligible effects on body image (Cohen et al., 2017; Saiphoo & Vahedi, 2019). Although our factor analysis differentiated types of media consumption, assessing the effect of social media functionality was not a central hypothesis of our study, and thus, this study may not have captured the differential impact of separate media platforms on body image; future research could attempt to address this question.

6 | CONCLUSION

Through a mixed-methods approach, this study examined the relationship between media, body image, and body norms in a market-integrating population in Argentina. We found that the Qom adhere to both Western and traditional body norms that includes preferences for "middle range" body sizes on a silhouette scale and dual thin-fat stigma, possibly reflecting the community's market-integrating status. Media exposure did not predict body size perceptions and body dissatisfaction in this context, a finding that we attribute to the greater influence of peers, family, healthcare providers, and the cultural valuation of body acceptance. In all, our results suggest that media exposure may be a less salient influence on body norms and body image in populations undergoing sociocultural and economic transitions, and that other factors, such as family, peer, and healthcare provider influences, may play a larger role.

AUTHOR CONTRIBUTIONS

K. Daiy: Conceptualization (lead), Methodology (equal), Formal Analysis (equal), Investigation (equal), Project Administration (lead), Writing – Original Draft Preparation (lead), Writing -- Review & Editing (equal), Funding Acquisition (equal). **T. Frieson:** Investigation (equal), Methodology (equal), Data Curation (equal), Writing – Review & Editing (equal). **I. Barnes:** Formal Analysis (equal), Data Curation (equal). **L. Palacio-Londono:** Formal Analysis (equal), Data Curation (equal). **S. Olmedo:** Methodology (equal), Investigation (supporting), Validation (equal), Writing – Review & Editing (supporting). **P. Aranda:** Methodology (equal), Validation (equal), Investigation (equal). **F. Cirigliano:** Methodology (equal), Validation (equal), Investigation (equal). **C. Valeggia:** Supervision (lead), Funding Acquisition (equal), Writing – Review & Editing (equal).

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DATA AVAILABILITY STATEMENT

Research data are not shared.

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REFERENCES

Ammār, Ḥ. (1954). *Growing up in an Egyptian village: Silwa, Province of Aswan*. Routledge & Paul.

Anderson-Fye, E. P. (2004). A "Coca-Cola" shape: Cultural change, body image, and eating disorders in San Andrés, Belize. *Culture, Medicine and Psychiatry*, *28*(4), 561–595. https://doi.org/10.1007/s11013-004-1068-4

Anderson-Fye, E. P. (2011). Body images in non-Western cultures. In *Body image: A handbook of theory, research and clinical practice* (2nd ed., pp. 244–272). The Guilford Press.

Appiah, C. A., Otoo, G. E., & Steiner-Asiedu, M. (2016). Preferred body size in urban Ghanaian women: Implication on the overweight/obesity problem. *Pan African Medical Journal*, *23*. https://doi.org/10.11604/pamj.2016.23.239.7883

Ayala, G. X., Mickens, L., Galindo, P., & Elder, J. P. (2007). Acculturation and body image perception among Latino youth. *Ethnicity and Health*, *12*(1), 21–41. https://doi.org/10.1080/13557850600824294

Becker, A. E. (2004, December). Television, disordered eating, and young women in Fiji: Negotiating body image and identity during rapid social change. *Culture, Medicine and Psychiatry*, *28*, 533–559. https://doi.org/10.1007/s11013-004-1067-5

Becker, A. E., Burwell, R. A., Gilman, S. E., Herzog, D. B., & Hamburg, P. (2002). Eating behaviors and attitudes following prolonged exposure to television among ethnic Fijian adolescent girls. *British Journal of Psychiatry*, *180*(June), 509–514. https://doi.org/10.1192/bjp.180.6.509

Becker, A. E., Fay, K., Gilman, S. E., & Striegel-Moore, R. (2007). Facets of acculturation and their diverse relations to body shape concern in Fiji. *International Journal of Eating Disorders*, *40*(1), 42–50.

Becker, A. E., Gilman, S. E., & Burwell, R. A. (2005). Changes in prevalence of overweight and in body image among Fijian women between 1989 and 1998. *Obesity Research*, *13*(1), 110–117. https://doi.org/10.1038/oby.2005.14

Berry, J. W., Balls Organista, P., Chun, K. M., & Marin, G. (1998). Readings in ethnic psychology.

Boothroyd, L. G., Jucker, J. L., Thornborrow, T., Jamieson, M. A., Burt, D. M., Barton, R. A., … Tovee, M. J. (2016). Television exposure predicts body size ideals in rural Nicaragua. *British Journal of Psychology*, *107*, 752–767. https://doi.org/10.1111/bjop.12184

Brewis, A., SturtzSreetharan, C., & Wutich, A. (2018). Obesity stigma as a globalizing health challenge. *Globalization and Health*, *14*(1), 20.

Brewis, A. A. (2014). Stigma and the perpetuation of obesity. *Social Science and Medicine*, *118*(C), 152–158. https://doi.org/10.1016/j.socscimed.2014.08.003

Brewis, A. A., & Wutich, A. (2012). Explicit versus implicit fat-stigma. *American Journal of Human Biology*, *24*(3), 332–338. https://doi.org/10.1002/ajhb.22233

Brewis, A. A., Wutich, A., Falletta-Cowden, A., & Rodriguez-Soto, I. (2011). Body norms and fat stigma in global perspective. *Current Anthropology.*, *52*, 269–276. https://doi.org/10.1086/659309

Brown, P. J., & Konner, M. (1987). *An anthropological perspective on obesity*. Annals of the New York Academy of Sciences.

Cohen, E., Boetsch, G., Palstra, F. P., & Pasquet, P. (2013). Social valorisation of stoutness as a determinant of obesity in the context of nutritional transition in Cameroon: The Bamiléké case. *Social Science and Medicine*, *96*, 24–32. https://doi.org/10.1016/j.socscimed.2013.07.004

Cohen, R., & Blaszczynski, A. (2015). Comparative effects of Facebook and conventional media on body image dissatisfaction. *Journal of Eating Disorders*, *3*(1). https://doi.org/10.1186/s40337-015-0061-3

Cohen, R., Newton-John, T., & Slater, A. (2017). The relationship between Facebook and Instagram appearance-focused activities and body image concerns in young women. *Body Image*, *23*, 183–187. https://doi.org/10.1016/j.bodyim.2017.10.002

Cromer, L. D. M., Gray, M. E., Vasquez, L., & Freyd, J. J. (2018). The relationship of acculturation to historical loss awareness, institutional betrayal, and the intergenerational transmission of trauma in the American Indian experience. *Journal of Cross-Cultural Psychology*, *49*(1), 99–114. https://doi.org/10.1177/0022022117738749

Daiy, K., Arslanian, K., Lagranja, E. S., & Valeggia, C. R. (2019). Perceptions of the healthiest body in a market-integrating indigenous population in Argentina: Fat idealization and gendered generational differences. *American Journal of Human Biology.*, *32*, e23382. https://doi.org/10.1002/ajhb.23382

de Bourmont, S., Olmedo, S., Rodríguez, P., & Valeggia, C. (2020). Therapeutic itineraries of Qom mothers in a peri-urban community of Formosa. *Archivos Argentinos de Pediatria*, *118*(4), 228–229. https://doi.org/10.5546/aap.2020.eng.228

Esnaola, I., Rodríguez, A., & Goñi, A. (2010). Body dissatisfaction and perceived sociocultural pressures: Gender and age differences. *Salud Mental*, *33*(1), 21–29.

Fardouly, J., & Vartanian, L. R. (2016). Social media and body image concerns: Current research and future directions. *Current Opinion in Psychology*, *9*, 1–5. https://doi.org/10.1016/j.copsyc.2015.09.005

Fox, M., Thayer, Z. M., & Wadhwa, P. D. (2017). Acculturation and health: The moderating role of sociocultural context. *American Anthropologist*, *119*(3), 405–421. https://doi.org/10.1111/aman.12867

Gillen, M. M., & Markey, C. N. (2015). Body image and mental health. *Encyclopedia of Mental Health*, *2*, 187–192.

Hardin, J. (2015). Christianity, fat talk, and Samoan pastors: Rethinking the fat-positive-fat-stigma framework. *Fat Studies*, *4*(2), 178–196. https://doi.org/10.1080/21604851.2015.1015924

Hardin, J., McLennan, A. K., & Brewis, A. (2018). Body size, body norms, and some unintended consequences of obesity intervention in the Pacific islands. *Annals of Human Biology*, *45*(3), 285–294. https://doi.org/10.1080/03014460.2018.1459838

Hogue, J. V., & Mills, J. S. (2019). The effects of active social media engagement with peers on body image in young women. *Body Image*, *28*, 1–5. https://doi.org/10.1016/j.bodyim.2018.11.002

Holdsworth, M., Gartner, A., Landais, E., Maire, B., & Delpeuch, F. (2004). Perceptions of healthy and desirable body size in urban Senegalese women. *International Journal of Obesity*, *28*(12), 1561–1568. https://doi.org/10.1038/sj.ijo.0802739

Hutson, D. J. (2017). Plump or corpulent? Lean or gaunt? Historical categories of bodily health in nineteenth-century thought. *Social Science History*, *41*(2), 283–303. https://doi.org/10.1017/ssh.2017.4

International, Q. S. R. (2020). NVivo 10 [computer software]. Available.

Jackson, K. L., Janssen, I., Appelhans, B. M., Kazlauskaite, R., Karavolos, K., Dugan, S. A., … Kravitz, H. M. (2014). Body image satisfaction and depression in midlife women: The study of Women's Health Across the Nation (SWAN). *Archives of Women's Mental Health*, *17*(3), 177–187. https://doi.org/10.1007/s00737-014-0416-9

Joiner, G. W., & Kashubeck, S. (1996). Acculturation, body image, self-esteem, and eating-disorder symptomatology in adolescent Mexican American women. *Psychology of Women Quarterly*, *20*(3), 419–435. https://doi.org/10.1111/j.1471-6402.1996.tb00309.x

Kluck, A. S. (2010). Family influence on disordered eating: The role of body image dissatisfaction. *Body Image*, *7*(1), 8–14. https://doi.org/10.1016/j.bodyim.2009.09.009

Lagranja, E. S., Phojanakong, P., Navarro, A., & Valeggia, C. R. (2015). Indigenous populations in transition: An evaluation of metabolic syndrome and its associated factors among the Toba of northern Argentina. *Annals of Human Biology*, *42*(1), 84–90. https://doi.org/10.3109/03014460.2014.932008

Maio, G. R., Haddock, G. G., & Jarman, H. L. (2007). Social psychological factors in tackling obesity. *Obesity Reviews*, *8*(1), 123–125. https://doi.org/10.1111/j.1467-789X.2007.00330.x

Manago, A. M., Monique Ward, L., Lemm, K. M., Reed, L., & Seabrook, R. (2015). Facebook involvement, objectified body consciousness, body shame, and sexual assertiveness in college women and men. *Sex Roles*, *72*(1), 1–14. https://doi.org/10.1007/s11199-014-0441-1

Marshall, C. (2014). Body image and body work among older women: A review. *Ethnicity and Inequalities in Health and Social Care*, *7*(4), 198–210. https://doi.org/10.1108/EIHSC-11-2013-0042

Maupin, J. N., & Brewis, A. (2014). Food insecurity and body norms among rural Guatemalan schoolchildren. *American Anthropologist*, *116*, 332–337. https://doi.org/10.1111/aman.12098

Maupin, J. N., Hackman, J., & Brewis, A. (2021). Body norms and normative bodies in Highland Guatemala. *American Journal of Human Biology*, *5*(June), 1–13. https://doi.org/10.1002/ajhb.23639

Maupin, J. N., & Hruschka, D. J. (2014). Assessing the accuracy of two proxy measures for BMI in a semi-rural, low-resource setting in Guatemala. *BMC Public Health*, *14*(1), 1–7. https://doi.org/10.1186/1471-2458-14-973

McCullough, M. B., & Hardin, J. A. (2013). Reconstructing Obesity: The Meaning of Measures and the Measure of Meanings. Bergahn Books.

McHugh, T. L. F., Coppola, A. M., & Sabiston, C. M. (2014). "I'm thankful for being Native and my body is part of that": The body pride experiences of young aboriginal women in Canada. *Body Image*, *11*(3), 318–327. https://doi.org/10.1016/j.bodyim.2014.05.004

Menzel, J. E., Schaefer, L. M., Burke, N. L., Mayhew, L. L., Brannick, M. T., & Thompson, J. K. (2010). Appearance-related teasing, body dissatisfaction, and disordered eating: A meta-analysis. *Body Image*, *7*(4), 261–270.

Molyneaux, H., O'Donnell, S., Kakekaspan, C., Walmark, B., Budka, P., & Gibson, K. (2014). Social media in remote First Nation communities. *Canadian Journal of Communication*, *39*(2), 275–288. https://doi.org/10.22230/cjc.2014v39n2a2619

Montenegro, R. A., & Stephens, C. (2006). Indigenous health in Latin America and the Caribbean. *Lancet*, *367*(9525), 1859–1869. https://doi.org/10.1016/S0140-6736(06)68808-9

Olmedo, S. I., Dolores Roman, M., Berra, S., & Valeggia, C. R. (2020). Food intake and the significance of feeding in Qom children of northern Argentina. *Current Developments in Nutrition*, *10*, 1–8. https://doi.org/10.1093/cdn/nzaa158

Paquette, M. C., & Raine, K. (2004). Sociocultural context of women's body image. *Social Science and Medicine*, *59*(5), 1047–1058. https://doi.org/10.1016/j.socscimed.2003.12.016

Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex Roles*, *71*(11–12), 363–377. https://doi.org/10.1007/s11199-014-0384-6

Pew Research Center (2018). Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones.

Phares, V., Steinberg, A. R., & Thompson, J. K. (2004). Gender differences in peer and parental influences: Body image disturbance, self-worth, and psychological functioning in preadolescent children. *Journal of Youth and Adolescence*, *33*(5), 421–429. https://doi.org/10.1023/B:JOYO.0000037634.18749.20

Prentice, A. M. (2006). The emerging epidemic of obesity in developing countries. *International Journal of Epidemiology*, *35*, 93–99. https://doi.org/10.1093/ije/dyi272

Puoane, T., Tsolekile, L., & Steyn, N. (2010). Perceptions about body image and sizes among black African girls living in Cape Town. *Ethnicity & Disease*, *20*, 29–34.

Saiphoo, A. N., & Vahedi, Z. (2019). A meta-analytic review of the relationship between social media use and body image disturbance. *Computers in Human Behavior*, *101*(2018), 259–275. https://doi.org/10.1016/j.chb.2019.07.028

Schwartz, H. (1986). Never Satisfied: A Cultural History of Diets, Fantasies, and Fat [Internet]. Free Press.

Schwartz, M. B., & Brownell, K. D. (2004). Obesity and body image. *Body Image*, *1*(1), 43–56. https://doi.org/10.1016/S1740-1445(03)00007-X

Sepúlveda, A., & Calado, M. (2012). Westernization: The role of mass media on body image and eating disorders. In *Relevant topics in eating disorders*. InTechOpen. https://doi.org/10.5772/31307

Shaw, H., Stice, E., & Becker, C. B. (2009). Preventing eating disorders. *Child and Adolescent Psychiatric Clinics*, *18*(1), 199–207. https://doi.org/10.1016/j.chc.2008.07.012

Slade, P. D. (1988). Body image in anorexia nervosa. *The British Journal of Psychiatry*, *153*(S2), 20–22.

Stanford, J. N., & McCabe, M. P. (2002). Body image ideal among males and females: Sociocultural influences and focus on different body parts. *Journal of Health Psychology*, *7*(6), 675–684. https://doi.org/10.1177/1359105302007006871

Stice, E., Schupak-Neuberg, E., Shaw, H. E., & Stein, R. I. (1994). Relation of media exposure to eating disorder symptomatology: An examination of mediating mechanisms. *Journal of*

Abnormal Psychology, *103*, 836–840. https://doi.org/10.1037/0021-843X.103.4.836

Stice, E., Nemeroff, C., & Shaw, H. E. (1996). Test of the dual pathway model of bulimia nervosa: Evidence for dietary restraint and affect regulation mechanisms. *Journal of Social and Clinical Psychology*, *15*(3), 340–363. https://doi.org/10.1521/jscp.1996.15.3.340

Strathern, A. (1971). *The rope of Moka: Big-men and ceremonial exchange in mount*. CUP Archive.

Stunkard, A. (2000). Old and new scales for the assessment of body image. *Perceptual and Motor Skills*, *90*(3), 930. https://doi.org/10.2466/pms.2000.90.3.930

Sussman, N. M., Truong, N., & Lim, J. (2007). Who experiences "America the beautiful"?: Ethnicity moderating the effect of acculturation on body image and risks for eating disorders among immigrant women. *International Journal of Intercultural Relations*, *31*(1), 29–49. https://doi.org/10.1016/j.ijintrel.2006.03.003

Swami, V. (2015). Cultural influences on body size ideals: Unpacking the impact of Westernization and modernization. *European Psychologist*, *20*(1), 44–51. https://doi.org/10.1027/1016-9040/a000150

Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., … Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin*, *36*(3), 309–325. https://doi.org/10.1177/0146167209359702

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. American Psychological Association.

Tiggemann, M. (2012). Sociocultural perspectives on body image.

Tiggemann, M. (2014). The status of media effects on body image research: Commentary on articles in the themed issue on body image and media. *Media Psychology*, *17*(2), 127–133. https://doi.org/10.1080/15213269.2014.891822

To, S. B., Brewis, A. A., Pomer, A., Naseri, T., Reupena, M. S., McGarvey, S. T., & Hawley, N. L. (2020). Changing body norms in the context of increasing body size: Samoa in 1995 and 2018. *American Journal of Human Biology*, *32*(5), 1–5. https://doi.org/10.1002/ajhb.23395

Valeggia, C. R., Burke, K. M., & Fernandez-Duque, E. (2010). Nutritional status and socioeconomic change among Toba and Wichí populations of the Argentinean Chaco. *Economics and Human Biology.*, *8*, 100–110. https://doi.org/10.1016/j.ehb.2009.11.001

Valeggia, C. R., & Ellison, P. T. (2003). Lactational amenorrhea in well-nourished Toba women of Formosa, Argentina. *Journal of Biosocial Science*, *36*(5), 573–595. https://doi.org/10.1017/s0021932003006382

Valeggia, C. R., & Tola, F. (1999). Argentine Toba. *Ember*, *2*, 564–572.

Virtanen, P. K. (2015). Indigenous social media practices in southwestern Amazonia. *AlterNative: An International Journal of Indigenous Peoples*, *11*(4), 350–362. https://doi.org/10.1177/117718011501100403

Warren, C. S., & Rios, R. M. (2013). The relationships among acculturation, acculturative stress, endorsement of Western media, social comparison, and body image in Hispanic male college students. *Psychology of Men and Masculinity*, *14*(2), 192–201. https://doi.org/10.1037/a0028505

Whitbeck, L. B., Adams, G. W., Hoyt, D. R., & Chen, X. (2004). Conceptualizing and measuring historical trauma among American Indian people. *American Journal of Community Psychology*, *33*(3–4), 119–130. https://doi.org/10.1023/B:AJCP.0000027000.77357.31

World Health Organization (WHO). (2000). Obesity: Preventing and managing the global epidemic: report of a WHO consultation. *World Health Organization Technical Report Series, 894*.

Wiley, A. S., & Cullin, J. M. (2020). Biological normalcy. *Evolution, Medicine and Public Health*, *2020*(1), 1. https://doi.org/10.1093/emph/eoz035

Yates-Doerr, E. (2015). The Weight of Obesity: Hunger and Global Health in Postwar Guatemala. University of California Press.

Zanon, A., Tomassoni, R., Gargano, M., & Granai, M. G. (2016). Body image and health behaviors: Is there a relationship between lifestyles and positive body image? *Clinica Terapeutica*, *167*(3), 63–69. https://doi.org/10.7417/CT.2016.1935

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