

MOVING TOWARDS PHYSICAL ACTIVITY EQUALITY: HOW
MESSAGE FRAMING IMPACTS YOUNG ADULT FEMALE
BELIEFS AND INTENTION TO ENGAGE IN MOVEMENT
BEHAVIORS

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Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
Doctor of Philosophy
in the School of Public Health,
Indiana University
May 2020

Accepted by the Graduate Faculty, Indiana University, in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Date: April 27th, 2020

Acknowledgements

I would like to thank the strong female professors that have mentored me at Indiana University.

Dr. Lucia Guerra-Reyes, you taught me how to confidently identify as a researcher. Thank you for leading my dissertation development and believing in me. You have provided a mentoring style I intend to embody for my future mentees. I am grateful to have your support and commitment to my success.

Dr. Carol Kennedy-Armbruster, you advocated for me personally and professionally throughout my entire graduate career. Thank you for sharing your “pracademic” mentality and ultimately shaping my career path.

Dr. Lesa Huber, you exuded unwavering support for me throughout my doctoral program. Thank you for providing a space to grow with your positive encouragement and clear communication.

Dr. Lesa Major, you sparked my initial sense of interest in health communication. Thank you for bringing me into this area and firmly believing in my study. I am so happy I was able to learn from you and gain a strong interdisciplinary perspective in my work.

Dr. Catherine Sherwood-Laughlin, you had a profound impact on my academic and professional development as a young adult female doctoral student. You made the continued time and effort to provide me with opportunities to acquire skills needed to become a successful future faculty member. Thank you for your devotion to my professional and personal development.

I would like to thank a teacher that believed in my abilities well before college, granted me opportunities to be passionate about movement, and to take leadership of my creative ideas.

Leah Owens, thank you for making an impact that will echo.

Echo Dance Company, thank you for a creative outlet and a community to lean on every week.

To each Echo dancer, I am forever grateful for the space to be creative and have balance.

My parents...

Thank you for teaching me at a young age to seek academic success for myself and not for an external award or validation. My motivation for scholarly achievement and growth would not have helped me progress as it has without that very early lesson.

I would like to thank my husband.

Orlando, gracias por estar entusiasmado y abierto a lo que se avecina en el próximo capítulo de nuestra historia. Estoy feliz de que estemos juntos, lado a lado, para tener la positividad que viene con este logro.

Lastly, I would like to thank my grandmother.

Mamu, you laid the foundation in making me a determined individual. Thank you for all that you've done for our family.

Jaclyn Inel Hadfield

MOVING TOWARDS PHYSICAL ACTIVITY EQUALITY: HOW MESSAGE FRAMING
IMPACTS YOUNG ADULT FEMALE BELIEFS AND INTENTION TO ENGAGE IN
MOVEMENT BEHAVIORS

Physical activity is beneficial for overall health, but still women are less active than men worldwide. It is important to understand how message framing may be a tool to improve this physical activity disparity.

This study inserts itself in the overarching inquiry, *why do some and not others engage in physical activity or exercise?* The Reasoned Action Approach and Framing Theory are utilized to explore this inquiry and answer: 1) *What are the young adult female beliefs that influence intention to engage in exercise after viewing four differently framed exercise advertisements?* 2) *Which messaging frame for an exercise advertisement most significantly impacts young adult female intention to engage in exercise behavior?*

Such research is integral in addressing the diverse needs of females to promote physical activity. Findings can then be applied in public health communication to increase female physical activity engagement.

This study utilized a concurrent complimentary mixed-methods design. Cross-sectional survey data was collected from 177 young adult females at a large public Midwestern university. Subjects reported level of intention to engage in advertised exercise behaviors for four differently framed exercise advertisements: communal, agentic, appearance, and well-being. Data was analyzed using a linear mixed model with random effect for subjects. Focus group data was collected from 19 young adult female subjects at the same university. The focus group guide elicited participant beliefs influencing intention to engage in exercise behaviors after viewing the

same advertisements. Data was analyzed with directed content analysis with predetermined coding structures based on belief constructs.

Participants reported more positive beliefs that influence intention with the well-being framed advertisement. More negative beliefs were reported with the appearance framed advertisement. Participants of color believed seeing more representation of diversity in advertisements would make exercising easier. The well-being frame generated significantly more positive intention scores.

These results indicate positive beliefs linked to a well-being frame and diverse imagery in movement advertisements can increase physical activity levels for females through increased intention. Such findings are essential to integrate inclusive communication strategies that promote participation in active lifestyles among women while creating more equitable health statuses as a result.

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Terminology and Definitions

- Physical activity (PA) – Any bodily movement produced by the contraction of skeletal muscles that results in a substantial increase in caloric requirements over resting energy expenditure (American College of Sports Medicine, 2018)
- Exercise – A type of PA consisting of planned, structured, and repetitive bodily movement done to improve and/or maintain one or more components of physical fitness (American College of Sports Medicine, 2018)
- Movement – categorical term that encompasses both PA and exercise behaviors
- Movement inequality – the disparity of both access to engage in PA/exercise and actual levels of PA/exercise engagement
- Messaging – the process of physically getting the message to the population through a medium or media (e.g., print, internet, television) that the target audience will use (Latimer et al., 2010, p. 2)
- Advertisement – type of message that can be conveyed in different mediums and is a form of communication focused on impacting people (Dahlen & Rosengren, 2016)

Chapter 1 - Introduction

Engaging in PA has undeniable benefits for virtually all and is known to promote overall general well-being through disease prevention, improved mood, and reduction in depression and anxiety symptoms (Giacobbi et al., 2005; Hogan et al., 2015; U. S. Department of Health and Human Services, 2018; Warburton & Bredin, 2017). To prevent illness and reap the benefits of a physically active lifestyle American guidelines recommend adults move more and sit less throughout the day; engage in 150-300 minutes of moderate intensity movement, or 75-100 minutes of vigorous intensity movement throughout the week; and engage in muscle strengthening movement for all major muscles twice a week (U.S. Department of Health and Human Services., 2018).

To further understand movement behaviors that help individuals achieve the PA guidelines, The Human Movement Paradigm (Armburster et al., 2019) categorizes movement into separate categories: exercise, PA, or sedentarism. Sedentarism encompasses behaviors requiring 1.5 METs or less while sitting or lying down (Tremblay et al., 2017; U.S. Department of Health and Human Services., 2018). While exercise and PA are often confused to be the same in regards to classifying how one moves their body, they are indeed two different behavioral categories. Exercise is planned structured, and repetitive bodily movement done to improve and/or maintain one or more components of physical fitness (American College of Sports Medicine, 2018). PA is considered to have less structured parameters than exercise and may be an easier form of movement to engage in for less active individuals. Throughout these chapters the term ‘movement’ is utilized at times to refer to both PA and exercise behaviors.

The focus of this study is on both exercise and PA with the understanding that sedentary behaviors should be limited. These two movement categories encompass different behaviors and

are the focus of this study due to their ability to be accounted as modalities to get people moving and living active lifestyles. More specifically, these two movement categories are both behavioral vehicles to help population health by getting more people moving and reaping the benefits of disease prevention and overall health promotion.

Movement Inequalities

Although the health benefits of PA are undeniable, physical inactivity is a growing issue worldwide (Kohl et al., 2012). Less than half of American adults are meeting the recommended movement guidelines that are proven to improve health and prevent disease (U. S. Department of Health and Human Services, 2018). If it is widely known that engaging in a physically active lifestyle is greatly beneficial for one's health, why are the majority of adults not moving more? More specifically, why are women moving less than men? Females in the U.S. and worldwide are less physically active than men (Blackwell & Clarke, 2018; World Health Organization, 2019). A global prevalence difference among men and women PA levels was reported at 6% in 2001 and then up to 8% in 2016 (Guthold et al., 2018). Furthermore, a global study focused on investigating worldwide PA inequality provided evidence that the prevalence of obesity, which is associated with a myriad of negative health risk factors and illnesses, increased more significantly for women compared to men when PA levels decreased (Althoff et al., 2017).

This study and previous literature argues it is not random who does and who does not engage in movement behaviors (Derose et al., 2018; Hawes et al., 2019; Pena-Y-Lillo & Lee, 2019). Rather, there are social, behavioral, and cultural determinants that collectively impact movement behavior engagement. Arguments in this study support Guthold and colleagues' (2018) analysis of worldwide trends of insufficient PA that claimed culture and lack of social

support might be reasons why females are less physically active than men and such barriers must be addressed to help reach movement equality through positive behavioral change efforts.

Female Beliefs Towards Movement

Relevant literature has reported the social, behavioral, or cultural beliefs women have that facilitate or hinder their participation in movement behaviors (Burke & McCarthy, 2011; D'Alonzo & Fischetti, 2008; Downs & Hausenblas, 2005; French et al., 2005; Grubbs & Carter, 2002; Juarbe et al., 2003; Lovell et al., 2010; Meyer et al., 2013; M. Segar et al., 2017). This study is built upon such findings that show belief similarities and differences among female populations.

For example, female university students in the United Kingdom reported perceived barriers to exercise and agreed the most with the beliefs, “exercise is hard work” and “it tires me” as factors that hindered their exercise participation (Lovell et al., 2010). In D'Alonzo and Fischetti's (2008) cultural analysis of Latina and Black college student beliefs towards exercise, Latina students saw vigorous exercise as more difficult to engage in because they viewed it as unfeminine. While both Black and Latina students found it difficult to participate in certain exercise programs due to feeling pressure to conform to white beauty standards that conflicted with their own cultural ideas of beauty. In contrast, another study found white young adult female university students with unhealthy eating behaviors were more likely to be motivated to exercise to get others to like them because they believed exercise would make them more attractive (Meyer et al., 2013).

Other studies have examined the movement related beliefs of adult women outside of college student populations. One study shared specific Mexican immigrant female beliefs that once a woman is married she does not exercise, the husband does not help at home to give

women time to exercise, after a mother gives birth she feels too tired and slow to want to exercise, or that exercise could hurt the uterus (Juarbe et al., 2003). Another study aimed at analyzing PA communication reported adult female beliefs where low active women felt the cost and locations of gyms to be a barrier to moving more, showing they did not perceive movement outside of gym settings as counting towards their overall activity levels (M. Segar et al., 2017). In Segar and colleagues' (2017) study both low and high active women felt guilty about not exercising because they *should* do it to lose weight, which ultimately made exercise stressful and not a fun behavior to do. These women also felt family needs took priority over exercising and it would feel selfish to take time to exercise and be away from their partner's or kids' needs (M. Segar et al., 2017). Such findings show the similarities and differences in beliefs women hold towards movement in various female populations. These differences indicate movement behavior communication will not be successful with a "one size fits all" approach. Applicable communication approaches are warranted due to the diverse needs in addressing different female population belief systems towards engaging in movement behaviors.

Young Adult Females and Movement

After considering these belief similarities and differences among women, it seems reasonable to assume young adult females would be as active as their male counterparts since they customarily do not face the reported barriers of familial or spousal needs and perceived physical change barriers due to pregnancy or childbirth at this stage in their lives. However, in the United States almost 45% of males ages 18-24 met the PA guidelines, while only a little over 20% of females ages 18-24 met the same guidelines (Katzmarzyk et al., 2017). Evidence has shown that female PA participation drastically declined between the transitions from high school to college (Han et al., 2008), which is of specific concern because this young adult phase is

associated with a higher risk for developing unhealthy behaviors, like physical inactivity (M. C. Nelson et al., 2008). There are clearly still factors impacting female movement engagement at this stage of womanhood that must be addressed to close the gendered disparity of physically active lifestyles.

Young Adult Female Movement Engagement and Communication

Since there is clear discrepancy in movement equality among genders this study argues it is important to understand how communication efforts, which encompass social, behavioral and cultural factors, can combat movement inequality among genders. This argument sparks the question, *could the way we communicate movement impact female engagement in PA or exercise behaviors?*

Relevant studies have explored how communication factors influence the way young adult females interpret messages that impact their health behaviors. Aubrey (2010) explored how advice was framed in five of the most popular women's magazine covers and investigated whether appearance (do something to look better) or health message frames (do something to feel better) impacted female body-related self-perceptions among undergraduate females. She found that appearance and health frames were equally present in women's magazine covers, which implied that the reason to do something healthy, like engaging in PA, is not just for better health but appearance is equally as important in motivating female target populations to do such behaviors. However, undergraduate females that interpret messages with appearance frames compared to health frames reported higher body shame (Aubrey, 2010). Additionally, Willis and Knobloch-Westerwick (2014) reviewed the top-selling women's magazine content and found that weight-loss and body shaping exercise advertising and messaging content made up one fifth of magazine content and such aesthetically-based messaging was referenced significantly more

than health focused messaging. Such findings are alarming after understanding females that respond to appearance motives (weight-loss, body shaping, getting beach body ready) for exercise are more likely to experience disturbed eating and body esteem (Fuller-Tyszkiewicz et al., 2018, p.; Furnham et al., 2002; Tiggemann & Williamson, 2000).

Furthermore, females exposed to elite fitness model-based advertisements compared to product-based or no advertisement reported significantly higher levels of social physique anxiety (Sabiston & Chandler, 2010). More specifically, undergraduate females that viewed high level fitness and athletic body types in ads reported increased body dissatisfaction and such ads did not motivate them to engage in more exercise behaviors (Robinson et al., 2017). These findings illuminate communication factors that may contribute to the gap in movement engagement among women and men throughout the lifespan and the need to explore such factors.

Message Framing to Address Movement Inequalities

To successfully balance levels of movement engagement for all, it is important to better understand how to positively influence female intention to engage in movement behaviors by addressing the impact of message framing. Framing is a messaging tactic that takes an aspect of an individual's perceived reality and makes it more important than other aspects in order to promote a topic or evoke an action (Scheufele, 1999). Essentially, a frame is the central organizing idea that is socially constructed and provides meaning to the issue or topic being communicated in a message for the target audience. As Lakoff (2004) shared, "frames are mental structures that shape the way we see the world (p.15)".

Framing and Intention

Framing has the power to influence a woman's intention to perform the specific behavior being communicated. The focus of persuasive messaging revolves around one's intention, which

Fishbein's Reasoned Action Approach (RAA) states is "the single best predictor of whether one will (or will not) perform the behavior in question" (Fishbein, p.836, 2008). Frames are able to have positive impact on intention when they adhere to a woman's belief structure, which is a premise of the RAA that beliefs influence determinants of behavior.

The RAA states that intention is influenced by the determinants of one's attitude, perceived norm, and perceived behavioral control towards a behavior, and these determinants are influenced by one's beliefs. Attitude towards the act is how one perceives doing a behavior to be good or bad for them (Fishbein, 2011). Perceived norm is considered the perceived social pressure one feels to do a behavior (Fishbein, 2011). Perceived behavioral control is how much a person believes they can do a behavior or that they are in control of doing the behavior (Fishbein, 2011). Overall, in a simplified sense a person's intention to do a specific behavior is influenced by how fun (attitude towards the act), popular (perceived norm), and easy (perceived behavioral control) they believe the behavior to be (Jimerson et al., 2004).

With the RAA's determinants of intention alongside the concept of framing, it is important to consider an individual's interpretation of a message is influenced by the preexisting meaning they have given the specific behavior (Scheufele, 1999). Therefore, a woman's preexisting beliefs towards a movement behavior impacts how she interprets the messages, and ultimately her intention to do the behavior being communicated. With this in mind, it must be noted that culture plays a role in shaping female beliefs towards healthy movement behaviors. These cultural lenses are integral for communicating and inclusively promoting physically active behaviors.

Relevance of Framing Within Health Behavior and Communication

Framing is a concept based in the field of communication but of a great value to behavioral health. In order to motivate female populations in a behavioral direction for future adherence of protective health movement behaviors, messages need to be designed to communicate more than what individuals should do (Latimer et al., 2010) and speak to what personally motivates them. Doing so will help create individual meaning and importance of the behavior through connecting with the receiver's personal beliefs. Framing is a messaging tactic that will allow receivers, such as young adult female populations, to understand their "Why" of the behavior through the aspect the frame makes most important.

There is promise when it comes to the intersection of healthy behaviors (i.e. PA and exercise) and communication to further strengthen health messaging among female audiences. Overtime, it has become more obvious that the way individuals interpret media content is not solely internally motivated but also guided by cultural processes (Shoemaker & Reese, 1996; Van Gorp, 2006). With this intersection of understanding, behavioral scientists can continue to build off of communication literature to strengthen messaging with effective frames and noting that "audiences rely on a version of reality built from personal experience, interaction with peers, and interpreted selection from media" (Neuman et al., 1992, p. 120).

Therefore, just as behavioral scientists understand that past experiences, other people, and personal attitudes can shape intention; communication and media scholars understand that the same factors can impact how people interpret messages. The communication strategy of framing has the ability to advance the adherence of positive movement behaviors among specific populations, like young adult females. This can be done through message interpretation that positively influences behavioral intentions for women with consideration to the different needs and beliefs among diverse female populations.

Study Purpose

This dissertation seeks to understand the effects of advertising framing on female beliefs and intention to engage in movement behaviors. This study assesses 1) How four different exercise advertisement framing approaches (communal, agentic, appearance, and well-being) affect young adult women's beliefs and intention to engage in movement behaviors; and 2) Which messaging frame for an exercise advertisement most significantly impacts young adult females intention to engage in such an advertised exercise behavior?

Study Significance

There has been little progress in improving overall American population PA levels over the past several years (U. S. Department of Health and Human Services, 2018) let alone for female population PA levels (Althoff et al., 2017; Blackwell & Clarke, 2018; Guthold et al., 2018; World Health Organization, 2019). The results of this study may provide translational findings to improve population movement levels by better designing movement programs, interventions, and communications designed to increase female movement levels, all the while creating a preventative health habit for half of our world's population.

In a broader sense, the results of this study are also significant to the wider scope of public health by their applicability to areas outside of movement behaviors. There is social and cultural relevance to this relationship between communication and behaviors in regards to health statuses inside and outside of the realm of movement behaviors. This study indicates that individual health perceptions, regardless of what type of behavior is in question, are molded by the way we communicate messages. There is broad appeal with this study to help further interest in investigating how public health can address health inequalities with messaging to break through class and cultural lines among various health behaviors and populations. In general, such

research as this illuminate how communication can echo disparities and what this means for population health improvements for tomorrow.

Chapter 2 – Methodology

A concurrent complimentary mixed-methods design was chosen to give proper representation of the young adult female participant's point of view and understandings (Creswell & Creswell, 2017). Cross-sectional survey data was collected initially following by focus group data concurrently collected throughout the same time span. Concurrently collecting data allowed the findings from the focus group data analysis to compliment findings generated from the cross-sectional data analysis.

The qualitative component of this study was used to recognize female beliefs through discussion that allowed participants to share their beliefs and opinions in their own words. The quantitative component was utilized to determine the message framing strategy that most significantly impacted young adult female intention to engage in movement behaviors. Combining these two methods allowed the quantitative and qualitative studies to take different viewpoints regarding this study's overarching goal of addressing how communication impacts the way women engage in movement behaviors.

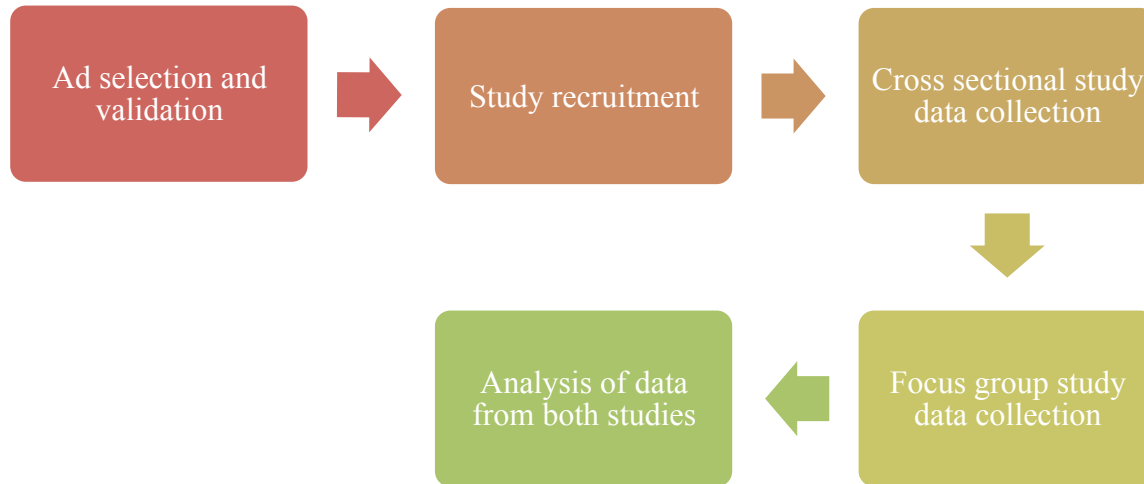
The study was conducted among a sample of undergraduate female students at a Midwestern public university campus. This population was selected because 1- it represents a sizeable portion of the local 18-24 years old female population of the area and 2- because colleges and universities are places where the result of this research can be effectively applied.

Study Process

A pre-study framing validation procedure was conducted prior to data collection in order to identify the advertisement variables for this study. After completing this procedure, participants were recruited for both the focus group and cross-sectional survey studies. The cross-sectional survey study data collection occurred in early April 2019 through early May

2019. The focus groups were also conducted throughout the month of April 2019 following a concurrent mixed-methodology design. Figure 1 visually depicts the study’s overall process.

Figure 1. Study Flowchart



Pre-Study Advertisement Variable Selection Process

A pre-study variable selection process was conducted to identify the best images and text to serve as advertisements and represent each of the selected framing strategies. The behavior of attending a group-based exercise (GBE) class was chosen as the movement behavior to be represented in the advertisements for this study. This behavior was chosen because the majority of group exercise participants are female, it is a movement behavior often marketed to female populations, and is a behavior young adult females would be familiar with.

Tailored advertisements were created to represent each frame for a fictitious class titled “Movement Medley-45” following methodology established by Dimmock and colleagues (2013). Advertisements for each frame were created from existing visuals that matched the

frame's premise. These visuals were found through an online search. The goal of this search was to identify a photograph that would accurately represent the premise of its frame while visually depicting female movement behavior. Text was later added to compliment the photograph specific to each frame category. The text was a generic written description of the fictitious group exercise class. The online image search was conducted using Google image search and Pinterest. To select the visuals that best represented each frame different search terms were used specific to the frame's objective. Table 1 exhibits sample search terms used for each framing category. Six photos were identified that best captured each frame category from this search, which totaled 24 advertisements.

Pre-study Framing Validation Process

The ads were validated with a pre-study sample group to accurately identify the one advertisement out of the six selected for each frame category. These subjects completed a survey to identify which of the selected advertisements most accurately captured the identity of the frame. This pre-study procedure was achieved by visiting two undergraduate media communication courses and asking female students if they were interested in providing feedback on new group exercise class advertisements. Interested and willing participants (N=43) then viewed each of the 24 advertisements on a projector screen for thirty seconds. Students were then given 30 seconds to answer three items catered to each framing category for every advertisement. Pre-study data were collected in-person with a paper survey (Supplemental Material 1). Responses were provided on a five-point likert scale to indicate how accurate they believed the advertisement matched the frame's criteria.

SPSS version 25 (IBM, New York) was used to analyze the pre-study validation data. The responses were coded from one to five before conducting a descriptive statistical analysis.

Five indicated a “strongly agree” response and one indicated a “strongly disagree” response. The three items for each advertisement were then averaged to create a total score. The advertisement with the highest mean in each framing category was identified as the best representation for that frame to be utilized in the study. The advertisements identified through this pre-study validation process are depicted in Figures 2-5.

Table 1 Pre-Study Online Search Terminology	
Frame Category	Search Terms
Communal	Exercising with friends, female group exercise, female friends exercising
Agentic	Female fitness goals, female exercising alone, female competitive exercise
Appearance	Sexy female exercise, beautiful women exercising, beautiful body exercise
Well-being	Happy exercise, feel good exercise, females smiling and exercising

Framed Advertisements

Figure 2. Communal Framed Advertisement

MOVEMENT MEDLEY-45



**ENTER THE WELCOMING ENVIRONMENT OF MOVEMENT MEDLEY-45!
THIS CLASS IS GREAT FOR THOSE WHO WANT TO DEVELOP
SUPPORTIVE RELATIONSHIPS AND STRONG BONDS WITH OTHERS.**

Figure 3. Agentic Framed Advertisement

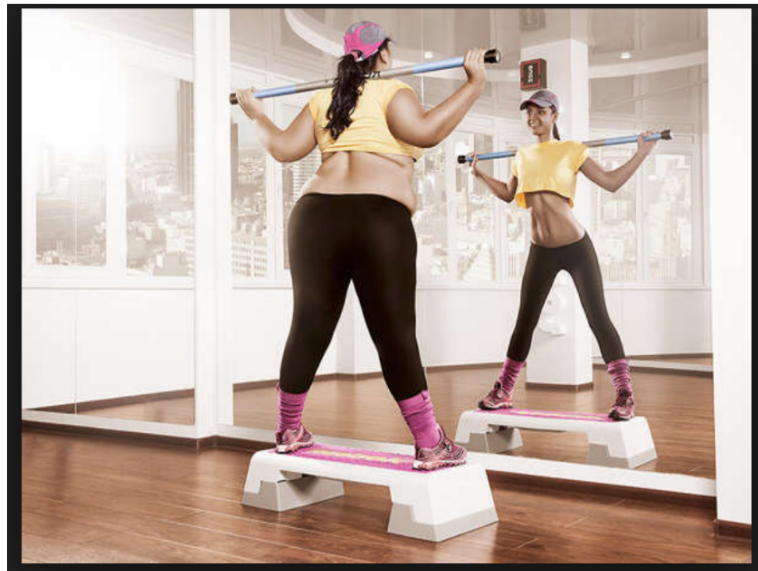
MOVEMENT MEDLEY-45



MOVEMENT MEDLEY-45 IS DESIGNED FOR THOSE WITH HIGH FITNESS GOALS AND WANT TO ACHIEVE THEIR FULL POTENTIAL! THIS CLASS IS FOCUSED ON EXERCISE EXCELLENCE AND IS EFFECTIVE FOR ACHIEVING PERSONAL FITNESS GOALS.

Figure 4. Appearance Framed Advertisement

MOVEMENT MEDLEY-45



MOVEMENT MEDLEY-45 WILL SHAPE YOU INTO THE SEXY SIZE YOU WANT TO ACHIEVE! THIS CLASS IS DESIGNED TO HELP YOU ACHIEVE THE BEAUTIFUL APPEARANCE RESULTS YOU WANT!

Figure 5. Well-being Framed Advertisement

MOVEMENT MEDLEY-45



**MOVEMENT MEDLEY-45 IS A CLASS DESIGNED TO IMPROVE YOUR
OVERALL WELL-BEING THROUGH THE POWER OF MOVEMENT! THIS
CLASS WILL HELP YOU FEEL BETTER OVERALL!**

Focus Group Study

Study design

A focus group study was used consisting of four one-hour long focus groups with 4-6 participants in each group for 19 participants total. The criteria to participate in the study were: identifying as female, being a currently enrolled undergraduate student at the same large Midwestern public university, and being between the ages of 18-24.

Recruitment

Participants were recruited during March and April 2019 at the large Midwestern public university campus. There were two strategies used to achieve this study's purposive sample: contacting leaders of female student organizations on campus and in-class recruiting.

First, leaders of female student organizations on campus were contacted through email. The email communicated an overview of the study and a request to hold a one-hour focus group meeting before, during, or after their organization's weekly meeting time for 4-6 members with free food and drinks provided. The student organizations contacted were selected from a list of the university's diversity, equity, and multicultural affairs supported student organizations to recruit a more diverse group. Second, participation was solicited by visiting the undergraduate classes of colleagues in different departments to help assure students were recruited from different majors and interests.

All students were informed of the length of the focus group, and that they would be viewing female exercise advertisements to share their beliefs relevant to the advertisements for a new type of group exercise class. Students were instructed to email my university email address and confirm the focus group meeting time, location, and to ensure they met the study's criteria.

Focus Groups

Four different focus groups were held at central campus locations. Each focus group discussion lasted approximately one hour. Focus group settings included: a secured group study room in the main student campus library, the central office of the campus Latino Cultural Center, a sorority house study room, and a university department of public health meeting room. Data was collected in each of these settings. The only individual present besides the participants and myself at each of these settings was an assistant to aid with note taking and recording of the focus groups.

Participants were grouped by similar characteristics of race/ethnicity, degree major, or interests to foster an environment where participants might know others and feel more open sharing personal beliefs (M. Segar et al., 2017). For example, one focus group was composed of students in the same sorority organization, another group was made up of Latina students exclusively, and a third was composed of students all in the same non-profit student organization. The fourth group was a combination of characteristics ranging in race, ethnicity and degree majors.

As the leader of these focus groups, it is important to consider I am a white female doctoral candidate with a strong interest in the study's topic and trained in qualitative inquiry. I had an established relationship with at least one participant in each of the focus groups from either connecting with them previously through their academic programs or knowing shared contacts in their student organizations. All students received information and provided individual consent to participate in the study. The participants understood they were viewing four different advertisements for a new group exercise class and they would be asked about their beliefs regarding each advertisement. The participants were not informed at any point that the class was actually conjured. A discussion guide was followed during the entire focus group to begin and

facilitate conversation. Each focus group was recorded on two separate devices and then transcribed. Additional notes were taken by the assistant to support transcription.

Focus Group Guide

The focus group guide was designed utilizing constructs of the RAA to analyze participant beliefs specific to each advertisement regarding group exercise engagement. For that reason, questions were designed around the theory's constructs: attitude towards the act, perceived norms, and perceived behavioral control.

The guide began with prompting participants to share their first name, age, and where they were from to help establish group cohesion and easy talking points. Then a more general question was asked to spark conversation more tailored to the study's topic, *what does group exercise mean to you?* After this initial question, the group was shown the communal advertisement in full screen view on a laptop placed on the middle of the table for all to see. Six questions were asked following the theoretical foundation of this study after a 30 second pause of silence to allow the group to read and interpret the advertisement. The same six questions were asked and the same process of viewing the advertisement took place for the agentic, appearance, and well-being advertisements. Table 2 shows the question asked after participants viewed each advertisement. These questions were designed upon the RAA primary constructs in order to analyze participant beliefs related to their attitudes perceived norms, and perceived behavioral control all in regards towards attending the differently framed GBE classes.

Table 2 Constructs and Focus Group Questions	
<u>Construct</u>	<u>Question</u>
Attitude Towards the Act	1) What are the good things that might happen to female students like you if they go to this class? 2) What are the bad things that might happen to female students like you if they go to this class?
Perceived Norm	3) Who are the people that would approve of female students like you going to this class? 4) Who are the people that would disapprove of female students like you going to this class?
Perceived Behavioral Control	5) What might make it easier for female students like you to make it to this class? 6) What might make it harder for female students like you to make it to this class?

Analysis

A directed content analysis of the theoretical framework was used to identify repeating themes among participants' beliefs regarding each group-based exercise (GBE) class and their relationship with intention. Directed content analysis was used to support the use of theory in the investigation (Hsieh & Shannon, 2005). The RAA theoretical constructs directed systematic evaluation of reported beliefs and guided the initial coding structure to categorize data.

MAXQDA 2018 version 12 (VERBI Software, 2018) was used to analyze and code transcribed data.

Coding

Based on the RAA constructs that guided the analysis the following categories were pre-determined to analyze participant outcome, normative, and control beliefs respectively: 1) the positive and negative outcomes of engaging in the differently framed GBE classes 2) the approvers and disapprovers of engaging in the differently framed GBE classes 3) the factors that make it easier or harder to attend the differently framed GBE classes. Subcategories were then

identified in each of these categories to provide more specific belief structure information (Hsieh & Shannon, 2005). All collected data for each advertisement was analyzed with this coding structure. The data was coded following the outlined process and then coding outcomes were shared with the committee chair advisor to confirm clarity of the data through directed content analysis.

Reporting

Participant quotations were reported to highlight how the subcategories illuminated the three major belief themed categories. Participant race, ethnicity, student organization involvement, academic major, or year in school was used to identify quotations. Identifying quotations in this way demonstrated how certain findings were shared across the majority of participant characteristics and how other findings were particular to certain participant characteristics.

The major themes in the findings are illustrated by the three pre-determined categories and further detailed by the subcategory themes. Minor themes that were diverse and noteworthy were also reported to further clarify findings.

Cross-sectional Study

Study Design

A cross-sectional survey design was used with the study population of young adult females with the sampling frame of undergraduate females. The criteria to participate in the study were: identifying as female, being a currently enrolled undergraduate student at the same large Midwestern public university, and being between the ages of 18-24.

A power analysis was conducted using G*Power version 3.0.10 to determine an appropriate sample size for the study. The analysis determined that a sample of 150 would have

97% power. 177 participants met these criteria and fully participated in the study. The researchers' Institutional Review Board approved the research.

Recruitment

Participants were recruited by in-class visits with a brief presentation about the study in selected undergraduate courses in different departments to solicit participation. Flyers were also posted on campus with information to access the survey online to participate. The online survey link was distributed to applicable student email listserves. Lastly, social media posts were utilized to generate participation among this particular population with a link to the online survey. For those recruited by email, a reminder email was sent one week after the initial request to participants in hopes to increase participation. In all modes of recruitment it was communicated that subjects could participate in the study by completing a brief survey (in-person or online when applicable) about group exercise advertisements and be entered into a drawing to win one of four \$25 gift cards.

Sample

In April 2019, 188 participants were recruited for this study. Four participants did not meet the criteria when completing the online survey and their progression to complete the survey was automatically stopped. Seven participants did not complete the paper survey in its entirety. As a result, these subjects were excluded from the sample. A total of 177 subjects that met the inclusion criteria and completed the survey in its entirety were included in the study.

Data Collection

Data was collected online and in-person during a four-week period. 120 participants were recruited by in-class recruitment and completed a paper survey. During these in-class recruitments, undergraduate female students were able to complete the surveys or take part in an

alternative activity in the class if they chose not to participate. All other participants (N=57) completed the same survey online by accessing a link that connected them to the survey. All participants were presented informed consent information before deciding to participate in both the paper and online versions of the survey.

Survey Instrument

The survey was designed with Qualtrics (Qualtrics, Provo, Utah). Online participants received a link to access the survey. Those completing paper surveys received a printed version of the same survey. The first questions of the survey were used to confirm the participant met the inclusion criteria. Next, participants viewed each advertisement identified through the pre-study validation procedure. After viewing each advertisement participants answered two validated items measuring intention to attend the GBE class specifically being advertised. Lastly, other participant demographic and contextual information was obtained. Both delivery versions of the survey took approximately 5 minutes to complete.

Description of Measures

Two items based on the RAA measured the main outcome variable, intention. The two items had a seven-point scale response. Item one: My attending a class like this is (extremely unlikely --- extremely likely). Item two: I will attend a class like this (strongly disagree --- strongly agree).

The following participant characteristic information was collected: age, race, ethnicity, exercise identity, and group exercise participation.

Race was measured by allowing participants to self-report any of the following categories they would use to describe themselves: American Indian/Alaskan Native, Asian, Black/African American, Native Hawaiian/Pacific Islander, or White. Participants were given the option to not

respond to this question if they preferred. Race was then categorized and measured in three categories (white, non-white, and prefer not to disclose). This was due to the small amount of participants that identified with races other than white. If a participant identified with any of the other race categories they were included in the non-white category.

Ethnicity was measured by participants choosing yes or no to identifying as being Hispanic or Latina.

An item used on the Exercise Identity Scale was used to measure exercise identity (EI). Understanding one's EI is a tool to identify those most likely to engage and sustain a movement program and to identify how important exercise is to one's sense of self (Anderson & Cychosz, 1994). The EI scale is a nine item scale that holds internal consistency and reliability with high scoring on the scale significantly relating to high exercise participation (Anderson & Cychosz, 1994). Since exercise identity was not the main focus of this study and avoiding response fatigue for participants completing the survey, the entire EI Scale was not included. Participants were asked to rate how they agreed or disagreed on a seven-point scale with the following statement measuring exercise role identity: I consider myself an exerciser. EI was included as a characteristic measure to examine how significantly a female's perception of EI impacted her intention score associated with the different frames.

Group exercise participation frequency was measured by participants indicating their average participation rate in group exercise in the past year (0, 1-2 times, 3-5 times, 6-8 times, 9-11 times, 12-14 times, 15 or more times.) This measure was included to illuminate if GBE participation significantly impacted intention score among the sample.

Analysis

Analysis was conducted using SPSS version 25 (IBM, New York). The two RAA items to evaluate intention were averaged to create one value for each participant's response to each of the advertisements. The main analysis used a linear mixed model with random effect for subject, where intention was the dependent variable, the four advertisements were the independent variables, and participant characteristics (age, race, ethnicity, exercise identity, and group exercise participation) were covariates. The model was utilized to identify which advertisement significantly yielded the highest intention score among the sample.

Chapter 3 – Manuscript One

The Message Matters: Exercise Advertisement Frames and Young Adult Female Beliefs

Towards Engaging in Movement Behaviors

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Identified journal source: Sex Roles Journal

Journal's page limit: "The length of a typical regular report is 25 to 40 manuscript pages, including references, tables, or figures, although page limits are not rigidly enforced (especially for qualitative and multi-study papers)."

Abstract

Physical activity is beneficial for overall health, but still women are less active than men worldwide. It is important to understand how message framing may be a tool to improve this physical activity disparity.

This study contributes to the under researched issue of how advertising framing effects on female belief systems play a role in physical activity inequality among genders. The aim of this study is to analyze young adult female beliefs influencing intention to engage in exercise after viewing four differently framed group exercise class advertisements: communal, agentic, appearance, and well-being.

Four focus groups were conducted with 19 undergraduate females in a public Midwestern university. Focus group data was analyzed using a content analysis approach focusing on emergent themes specific to each advertisement.

Participants reported more positive beliefs that influence intention when the advertisement's message was about improving overall well-being. More negative beliefs were reported when the advertisement was focused on enhancing one's appearance. Participants of color believed that seeing more representation of diversity in advertisements would make engaging in exercise easier overall.

Our results indicate that positive beliefs linked to a 'well-being' frame and diverse female imagery in movement advertisements can lead females to increase overall physical activity levels through increased intention to engage in movement behaviors.

Keywords: Physical activity, exercise, message framing, females, exercise beliefs, movement behaviors

Introduction

Improving population physical activity (PA), understood as any bodily movement produced by skeletal muscles requiring energy expenditure (U. S. Department of Health and Human Services, 2018), has been shown to promote overall general well-being through disease prevention, improved mood, and reduction in depression and anxiety symptoms (Giacobbi et al., 2005; Hogan et al., 2015; U. S. Department of Health and Human Services, 2018; Warburton & Bredin, 2017). However, 1 out of 4 adults globally are not sufficiently physically active (World Health Organization, 2019). Lack of PA has been linked to contributing to 6-10% of deaths globally (Lee et al., 2012). To prevent illness and reap the undeniable benefits of a physically active lifestyle American guidelines recommend adults move more and sit less throughout the day; engage in 150-300 minutes of moderate intensity movement, or 75-100 minutes of vigorous intensity movement throughout the week; and engage in muscle strengthening movement for all major muscles twice a week (U.S. Department of Health and Human Services., 2018).

Females are overall more likely to lack PA (Blackwell & Clarke, 2018; World Health Organization, 2019) and also to sustain it over time compared to males (Han et al., 2008). In the United States almost 45% of males ages 18-24 met the PA guidelines, while only a little over 20% of females ages 18-24 met the same guidelines (Katzmarzyk et al., 2017). Studies have shown that female PA participation drastically declined between the transitions from high school to college (Han et al., 2008). Thus this population of post-high school or young adult females 18-24 years old is of specific concern because this young adult phase is associated with a higher risk for developing unhealthy behaviors, like physical inactivity (M. C. Nelson et al., 2008).

Attending a group-based exercise (GBE) class can be an effective solution to improve overall movement levels among young adult females. GBE has been shown to be a more

sustainable behavior to improve overall PA levels than engaging in individual PA/exercise (Firestone et al., 2015; Harden et al., 2015). Messaging in advertisements related to GBE may impact willingness to try and to sustain this activity over time. It is important to better understand how to positively influence female intention to attend GBE by addressing the impact of messaging.

There has been a call to reevaluate messaging tactics and their effectiveness in public health (Fishbein & Cappella, 2006). In the realm of PA, this is especially important since there has been little progress in improving adult PA levels in the United States over the past several years (Kohl et al., 2012; U.S. Department of Health and Human Services, 2018). The focus of persuasive messaging should be on increasing one's intention, which the Reasoned Action Approach (RAA) states is "the single best predictor of whether one will (or will not) perform the behavior in question" (Fishbein, p.836, 2008).

There is indication that persuasive messages that utilize framing tactics have the power to make a positive difference in PA behaviors (Latimer, Brawley, & Bassett, 2010). Framing is the way a message makes one factor, such as weight loss, more important than other factors, such as stress reduction, when viewers interpret the message (Cappella et al., 2018). Scheufele's framing theory states that frames have the power to influence individual thought and behavior (Scheufele, 1999). Frames have this impact when they adhere to a person's existing belief structure, which influences intention.

Studies have identified various beliefs females have about movement behaviors with many reporting benefits such as: "it feels good," "I like to exercise where people look like me," "I will look better," "It is social entertainment," or "it will improve my fitness/performance" (Burke & McCarthy, 2011; D'Alonzo & Fischetti, 2008; Downs & Hausenblas, 2005; French et

al., 2005; Grubbs & Carter, 2002; Juarbe et al., 2003; Lovell et al., 2010). These beliefs are connected to various frames advertisements use to influence behavior. The interpretation of a health behavior message is influenced by the preexisting meaning individuals have towards the specific behavior (Scheufele, 1999). For example, women who do engage in movement behaviors are more likely do so for so-called external motivators like weight-management and appearance significantly more so than men (Tiggemann & Williamson, 2000). External motivating factors for movement engagement are also increasingly linked to negative self-esteem, negative body esteem and negative body satisfaction for females (Strelan et al., 2003). Therefore, it is necessary to understand how gender influences the perception and interpretation of framed health messages especially since gender is underrepresented when analyzing health phenomenon (Bordo, 2004).

Despite the evidence that persuasive message framing has the power to change behavioral beliefs and ultimately positively influence intention (Fishbein & Cappella, 2006; Latimer et al., 2010; T. E. Nelson & Oxley, 1999), there is little research regarding the impact of message framing on young adult female beliefs and intention to engage in exercise behaviors, like attending group exercise classes. Previous studies have examined the following frames and their impact on movement related beliefs or behaviors: communal frames, agentic frames, appearance frames, and well-being frames. However, no current study has examined these four frames together to examine their relationship with young adult female beliefs regarding GBE.

This study aims to contribute to the under researched issue of how advertising framing effects on female belief systems play a role in movement engagement inequality among genders. To do so, the study addresses the following research question, *what are the young adult female beliefs that influence intention to engage in group exercise after viewing four differently framed*

group exercise class advertisements? The RAA (Fishbein, 2011) and framing theory (Scheufele, 1999) are utilized to illustrate how different frames positively or negatively impact young adult female beliefs about participating in exercise behaviors, and in turn have bearing over their health.

To identify the most effective frame to change behavior, the belief determinants that influence intention of the specific behavior must be identified. We propose using the RAA to identify these beliefs. The RAA states that intention is influenced by one's attitude, perceived norm, and perceived behavioral control towards a behavior, and these determinants are influenced by one's beliefs towards the behavior. Attitude towards the act is how one perceives doing a behavior to be good or bad for them (Fishbein, 2011). Perceived norm is considered the perceived social pressure one feels to do a behavior (Fishbein, 2011). Perceived behavioral control is how much a person believes they can do a behavior or that they are in control of doing the behavior (Fishbein, 2011). Overall, in a simplified sense a person's intention to do a specific behavior is influenced by how fun (attitude towards the act), popular (perceived norm), and easy (perceived behavioral control) they believe the behavior to be (Jimerson et al., 2004).

Therefore, this study assesses four frames to serve as independent variables and is theoretically grounded upon The RAA and Framing Theory framework. Doing so helps to examine the different young adult females beliefs that influence their intention to engage in exercise behaviors. Methodology such as this may result in translational findings to better design programs, interventions, and health communications to ultimately increase female physical movement behavior levels, all the while creating a preventative health habit for half of our world's population. This will occur through identifying female movement behavior beliefs and

translating them to movement message framing designs to adhere to female population belief structures.

Frames Examined

The four frames (communal, agentic, appearance, and well-being) examined in this study were selected because of their theoretical foundation, presence in relevant previous literature, and applicability to the target population of this study.

Communal and Agentic Frames

Literature based in health communication, sport psychology, social psychology, and media sciences have examined these two constructs with various objectives among studies (Howle et al., 2015, 2017; Infanger & Sczesny, 2015; Moskowitz et al., n.d.; Wojciszke & Abele, 2008). Communal and agentic are theoretical concepts which are considered the “big two” when intellectualizing what generate one’s motives for behavior (Abele & Wojciszke, 2014a). A communal frame is a message that would focus on creating and managing social relationships, while an agentic frame is one that would focus on personal mastery and success of the individual (Abele & Wojciszke, 2014b). These constructs are based on the historical premise of human nature that we face two needs: to gain social acceptance and connection (communion), and to have competency and status (agency) (Bakan, 1966). Since the perceived values and motives relating to communal and agency are fundamental drivers of human behaviors (Abele & Wojciszke, 2014b; Bakan, 1966) it is important to consider how such frames based on these constructs can influence female intention to engage in movement behaviors.

Appearance and Well-being Frames

Literature from journals of health communication, eating disorders, gender studies, and sport psychology have explored either appearance or well-being based concepts in studies

ranging in objectives. (Aubrey, 2010; Berry & Howe, 2005; Sabiston & Chandler, 2010; Willis & Knobloch-Westerwick, 2014). An appearance frame would be a message that focuses on looking better physically, while a well-being frame would be a message that focuses on feeling better overall.

In a culture saturated with fantasized ideal body shapes for health/fitness messaging, it is essential to examine if this communication strategy is helping or hurting female intention to engage in healthy movement behaviors. Recall that framing is making one aspect more important than another in order to evoke action for the intended message. It is alarming that appearance frames then assume appearance to be the most important factor when it has been shown that females who respond to appearance motives for exercise are more likely to experience disturbed eating and body esteem (Furnham et al., 2002; Prichard & Tiggemann, 2008). On the other hand, exercising for intrinsic overall well-being factors is more sustainable and there is less health risk associated with it (Hagger & Chatzisarantis, 2014; Sabiston & Chandler, 2010).

The common and assumed goal of the health/fitness industry is to help people achieve well-being through healthy behaviors. Reflecting this goal through its communication and messaging, such as advertisements is important to the industry. Yet, historically health/wellness promotional media campaigns have been shown to have little impact on exercise behavior change specifically (Cavill, 1998; Hillsdon, 2001), which warrants research regarding how to best serve specific population's movement needs through health communication.

Methods

The study was conducted among female students in a Midwestern public university campus. This population was selected because 1- it represents a sizeable portion of the local 18-

24 female population of the area, and 2- because colleges and universities are places where the result of this research can be effectively applied.

Pre-Study Advertisement Variable Selection Process

To assess the effects of framing on intention to attend GBE tailored advertisements were created to represent each frame for a fictitious class titled “Movement Medley” following methodology established by Dimmock and colleagues (2013). Advertisements for each frame were created from existing visuals that matched the frame’s premise. These visuals were found through an online search. The goal of this search was to identify a photograph that would accurately represent the premise of its frame while visually depicting female movement behavior. Text was later added to compliment the photograph specific to each frame category. The text was a generic written description communicating the fictitious group exercise class. The online image search was conducted using Google image search and Pinterest. To select the visuals that best represented each frame different search terms were used specific to the frame’s objective. Table 1 exhibits sample search terms used for each framing category. The first author selected six photos that best captured each frame category from this search, which totaled 24 advertisements.

Pre-Study Frame Validation Process

To accurately identify the one advertisement out of the six selected for each frame category, the first author validated the ads with a group of pre-study participant females. These students completed a survey to identify which of the selected advertisements most accurately captured the identity of the frame. This pre-study procedure was achieved by visiting two undergraduate media communication courses and asking female students if they were interested in providing feedback on advertising efforts of a new group exercise class. Interested and willing

participants (N=43) then viewed each of the 24 advertisements on the classroom projector screen for thirty seconds. Students were then given 30 seconds to answer three items catered to each framing category for every advertisement. Pre-study data were collected in-person via paper survey (Supplemental Material 1). Responses were provided on a five-point likert scale to indicate how accurate they believed the advertisement matched the frame's criteria.

SPSS version 25 (IBM, New York) was used to analyze the pre-study validation data. The responses were coded from one to five before conducting a descriptive statistical analysis. Five indicated a "strongly agree" response and one indicated a "strongly disagree" response. The three items for each advertisement were then averaged to create a total score. The advertisement with the highest mean in each framing category was identified as the best representation for that frame to be utilized in the study. The advertisements identified through this pre-study validation process are depicted in Figures 2-5.

Study design

A focus group study consisting of four one-hour long focus groups of 4-6 participants on average totaling 19 participants. Participants were restricted to those: identifying as female, being a currently enrolled undergraduate student at the researchers' university, and being between the ages of 18-24.

Recruitment

Participants were recruited during March and April 2019 at the researchers' university campus. There were two strategies used to create this study's convenience sample.

First, leaders of female student organizations on campus were contacted through email. The email communicated an overview of the study and a request to hold a one-hour focus group meeting before, during, or after their organization's weekly meeting time for 4-6 members with

free food and drinks included. The student organizations contacted were selected from a list of the university's diversity, equity, and multicultural affairs supported student organizations to recruit a more diverse group.

Second, the primary investigator solicited participation by visiting the undergraduate classes of colleagues in different departments to help assure students were recruited from different majors and interests.

All students were informed of the length of the focus group, and that they would be viewing female exercise advertisements to share their beliefs relevant to the advertisements for a new type of group exercise class. Students were instructed to email the lead author to confirm the focus group meeting time, location, and to ensure they met the study's criteria.

Focus Groups

Four different focus groups were held at central campus locations. Each focus group discussion lasted approximately one hour. Focus group settings included: a secured group study room in the main student campus library, the central office of the campus Latino Cultural Center, a sorority house study room, and a university department of public health meeting room. Data was collected in each of these settings. The only individual present besides the participants and the lead author at each of these settings was an assistant to aid with note taking and recording of the focus groups.

Participants were grouped by similar characteristics of race/ethnicity, degree major, or interests to foster an environment where participants might know others and feel more open sharing personal beliefs (M. Segar et al., 2017). For example, one focus group was composed of students in the same sorority organization, another group was made up of Latina students exclusively, and a third was composed of students all in the same non-profit student

organization. The fourth group was a combination of characteristics ranging in race, ethnicity and degree majors.

The first author, a white female doctoral candidate with a strong interest in the study's topic and trained in qualitative inquiry, led each focus group. She had an established relationship with at least one participant in each of the focus groups from either connecting with them previously through their academic programs or knowing shared contacts in their student organizations. All students received information and provided individual consent to participate in the study. The participants understood that they were viewing four different advertisements for a new group exercise class and they would be asked about their beliefs regarding each advertisement. The participants were not informed at any point that the class was actually conjured. A discussion guide was followed during the entire focus group to begin and facilitate conversation. Each focus group was recorded on two separate devices and then transcribed. Additional notes were taken by the assistant to support transcription. The researchers' Institutional Review Board approved the research.

Focus Group Guide

The focus group guide was designed utilizing constructs of the RAA to analyze participant beliefs specific to each advertisement regarding group exercise engagement. For that reason, questions were designed around the theory's constructs: attitude towards the act, perceived norms, and perceived behavioral control.

The guide began with prompting participants to share their first name, age, and where they were from to help establish group cohesion and easy talking points. Then a more general question was asked to spark conversation more tailored to the study's topic, *what does group exercise mean to you?* After this initial question, the group was shown the communal

advertisement in full screen view on a laptop placed on the middle of the table for all to see. Six questions were asked following the theoretical foundation of this study after a 30 second pause of silence to allow the group to read and interpret the advertisement. The same six questions were asked and the same process of viewing the advertisement took place for the agentic, appearance, and well-being advertisements. Table 2 shows the question asked after participants viewed each advertisement. These questions were designed upon the RAA primary constructs in order to analyze participant beliefs related to their attitudes, perceived norms, and perceived behavioral control all in regards towards attending the differently framed GBE classes.

Analysis

A directed content analysis of the theoretical framework was used to identify repeating themes among participants' beliefs regarding each GBE class and their relationship with intention. Directed content analysis was used to support the use of theory in our investigation (Hsieh & Shannon, 2005). The RAA theoretical constructs directed systematic evaluation of reported beliefs and guided the initial coding structure to categorize data. MAXQDA 2018 version 12 (VERBI Software, 2018) was used to analyze and code transcribed data.

Coding

Based on the RAA constructs that guided analysis the following categories were pre-determined to analyze participant outcome, normative, and control beliefs respectively: 1) the positive and bad outcomes of engaging in the differently framed GBE classes 2) the approvers and disapprovers of engaging in the differently framed GBE classes 3) the factors that make it easier or harder to attend the differently framed GBE classes. Subcategories were then identified in each of these categories to provide more specific belief structure information (Hsieh & Shannon, 2005). All collected data for each advertisement was analyzed with this coding

structure. The lead author coded the data following the outlined process and then shared coding outcomes with the other researchers to confirm clarity of the data through directed content analysis.

Reporting

Participant quotations were reported to highlight how the subcategories illuminated the three major belief themed categories. Participant race, ethnicity, student organization involvement, academic major, or year in school was used to identify quotations. Identifying quotations in this way demonstrates how certain findings were shared across the majority of participant characteristics and how other findings were particular to certain participants. The major themes in the findings are illustrated by the pre-determined categories and further detailed by the subcategory themes. Minor themes that were diverse and noteworthy were also reported to further clarify findings.

Results

Out of the total nineteen participants, thirteen identified as white, five identified as Latina, and one identified as African American. All participants were between the ages of 18-22 and currently enrolled full-time students at the same large Midwestern university.

The results are categorized per advertisement by the pre-determined coding categories: 1) the positive and negative outcomes of engaging in the differently frame GBE classes 2) the approvers and disapprovers of females engaging in the differently framed GBE classes 3) the factors that make it easier or harder to attend the differently frame GBE classes. These categories organize the findings of participant beliefs specific to each advertisement with accompanying coded subcategories to further highlight beliefs specific to each advertisement.

The Positive and Negative Outcomes of Engaging in Group-Based Exercise

Communal Framed Advertisement

The communal advertisement yielded the following positive outcome subcategories: 1) improved social health, 2) improved sense of self, and 3) increased PA levels. Comparatively, two negative outcomes were reported, 1) feeling negative emotions and 2) decreased PA.

More specifically, some participants believed negative emotions could happen from attending this type of class due to negative social exclusion.

"I don't know... if it's like a more cliquy class, then you just kind of excluded..." – African American sophomore

"If you're a person of color, you might not feel like you fit in." – Latina freshman

Agentic Framed Advertisement

The agentic advertisement generated positive outcomes of 1) improved sense of self, 2) improved physical health, and 3) improved social health. Three negative outcomes were found 1) negative sense of self, 2) decrease in PA, and 3) negative emotions.

There was a shared belief that a class focused on exercise agency could damage confidence and make participants feel less capable resulting in a negative sense of self and a decrease in PA.

"If you're in the class and when you start to see everyone doing that and it's harder for you to do this type of one arm push up, you might start to feel less confident." – white freshman student

Appearance Framed Advertisement

The appearance advertisement generated positive outcomes of 1) improved physical health due to "getting into shape" and 2) improved sense of self from improving physical

appearance or feeling like they are achieving aesthetic goals. The negative outcomes found were: 1) having a negative body image, 2) decrease in PA, and 3) experiencing negative emotions.

There were strong opinions that going to an appearance-based class would result in having a negative body image.

"It could give a wrong idea of beauty standard. Because of the picture she's, I guess you could take it as her seeing her goal in the mirror, but then the reverse is her seeing that her body, like herself is not good enough and this, the image reflected in the mirror is good and ideal." – African American sophomore student

"You can't get down to the smallest size ass. Also just feeling like your body shape isn't sexy. What is, that?..... it's advertising a sexy body. But all bodies are sexy. Let's, let's celebrate that. Let's not try to make everyone a stick." – Latina freshman student

Some also felt that they would experience a decrease in PA from losing motivation to continue being active from this class or stopping attendance due to not achieving a desirable size. Others shared that feeling negative emotions would be a negative outcome from this class because they would feel embarrassed going to the “fat class,” or simply not feeling good about themselves or “sexy.”

Well-being Framed Advertisement

The well-being advertisement produced the positive outcome beliefs of 1) improved physical health, 2) improved social health, and 3) improved emotional health.

Participants believed that this class would improve physical health by increasing their energy, helping them sleep better, helping with better focus, and feeling better physically as well as overall. Participants felt improved social health could happen from attending this class because they could make friends and feel a sense of community. Additionally, participants

believed that improved emotional health could be a positive outcome because this class “would be a lot of fun”, they would feel happier, would enjoy themselves, have a good time, and have better mental health from attending this class.

“It just looks like a lot of fun. Everyone's smiling.... and it doesn't look like it's hard.” – white senior student

Only one possible negative outcome was found, 1) experiencing negative emotions. This belief was conditional in that participants reported they could experience negativity attending this type of class if their expectations were not met.

"I'd say the only negative I could think about... I've gone to a workout class before where it's way too easy... if the class didn't even like get your heart rate up you feel like you wasted your time." – Latina senior student.

The Approvers and Disapprovers of Engaging in Group-Based Exercise

Communal Framed Advertisement

Participants believed 1) females - some specifically mentioned older women, 2) family, 3) friends, and 4) health & wellness advocates/professionals would approve of them attending a communal-based GBE class. On the other hand, 1) fitness/exercise identifiers and 2) males were reported as people that would disapprove of participants attending a communal-based GBE class.

"I even feel like parents that don't necessarily approve of group exercise or see it as a legitimate form of exercise would approve of this." - Latina student in Latina student organization

"I feel like our own peers, they would see it as a form of meeting new people and also exercising and being better for yourself and having other people be there for you to push you." – white sorority member

Furthermore, one participant elaborated that men and “fit people” would disapprove of females attending a communal type class because a class like this may not be seen as legitimate exercise to “exercise people.”

Agentic Framed Advertisement

Participants shared that “people really geared towards fitness”, “bodybuilders”, and “people who like INSANITY¹ or go to Orange Theory²” would approve of females attending and agentic-based GBE class.

Some participants believed males would approve of them attending this class. When elaborating why they believed men would be ‘approvers’ it was shared, “it seems harder.... I guess more challenging and I feel like men and women always compare what they’re doing and this seems more strengthening because she's doing a one handed push up, which is what men tend to focus on. And women like cardio.” – African American sophomore.

Some believed that people identifying as non-exercisers, not very active, or advanced exercisers would disapprove of females attending an agentic type of class. The belief was rationalized by thinking this type of class would not be attended by “non-exercising types of people.” Others felt that their friends would disapprove of them attending this class because it seems too competitive and that is not a popular characteristic among their friend group.

¹ INSANITY is a branded fitness class based on high-intensity interval training. The class is available on DVD, youtube, and other streaming outlets where viewers will find the founder instructing shirtless and letting it know that INSANITY “is the hardest workout ever (Shaun T Fitness, n.d.)”

² Orange Theory is a group workout class held exclusively in Orange Theory branded gyms where participants track their heart rate and performance with interactive wearable fitness technology (Orange Theory Fitness, n.d.).

Comparatively, most believed males would disapprove of them attending this class because this class doesn't fit the stereotype of what women do in fitness.

“I could see guys disapproving of this.... I like to go to yoga. I feel like that's kind of stereotypical so guys might think, oh girls shouldn't be going to this type of fitness class.” – white senior student

Appearance Framed Advertisement

Some participants felt that “fitness people” would approve of females attending an appearance-oriented class. They detailed this generalization to a particular person, Jillian Michaels from the Biggest Loser TV show, considered an American fitness icon, and most frequently seen online in abdominal revealing shirts (Jillian Michaels, n.d.). There was another shared belief that males would approve of them attending this class.

“Definitely men... because that's the kind of body type in the mirror that's over sexualized in the media and things like that.” - African American sophomore

"I feel like guys.... like all ages but not good guys [would approve]" - White freshman student

Some felt that particularly men in fraternities would approve of females attending an appearance focused GBE class. One participant elaborated on her particular belief that these particular males would be approvers.

"A lot of hazing issues that have been going down in the fraternities has a lot to do with the women in the sororities that the fraternity affiliates themselves with... the majority of the people in those fraternities are Caucasian and I have never come across a non-white male that has acted and viewed women the way that white fraternity males do.... specifically when they

haze based on female's body, or getting them to do something to a female body... I don't know what it is.... So yeah they would approve." - white health/fitness major sorority member

Sorority member participants believed only a specific group of females would approve of them attending an appearance-based class, female sorority affiliates.

“Especially ones that haze for body image...because there are sororities that haze the girls for how they look and so they would have to join this class because they want you to look like that.... some log your hours of exercise.”– white sorority member

“I have seen certain sorority members buy Miralax in bulk were I work every week.... And they are all super skinny... they might approve of going to this class.” – white sorority member

The most interesting response came from one participant who strongly believed everyone would approve of her attending this class because the messaging of this class is embedded in American culture.

"I feel like everybody for this [class] would approve.... probably just because I feel like our society tends to care so much about appearance, especially in the United States.... it's become kind of every day.... There are ads that are trying to get us to change our look, whether it's makeup or clothes or fitness and things like that. So it's something that's always on the minds of people and we kind of over sexualize women, especially with different ads and things.... just the saying ‘shape into your sexy size’ and then you'll have a beautiful appearance.... I feel like that's a goal for the majority of especially young women.” - African American sophomore

On the other hand, participants believed that females like them would disapprove of women attending an appearance focused GBE class, particularly curvy women and women that

promote body positivity. Others believed that people that exercise for overall health, like body positive people, and not just “to be a certain size” would disapprove of them attending this class.

Well-being Framed Advertisement

Participants identified 1) everybody, 2) family, 3) health & wellness advocates/professionals, 4) females, and 5) friends as people that would approve of them attending a well-being framed GBE class. Some believed their moms specifically would be family members that approve of them going to this type of class because their moms would be happy seeing them do a class like the one in the well-being framed ad.

"You can see a variety of people... everyone's smiling and having fun. And then you see a range in body types as well.... diversity and race.... diversity in body types." – African American sophomore

"I honestly feel like anyone in undergrad that's a woman would be supportive of somebody going through this just because it's not like designated to any specific form of exercise." – white health/fitness specialist major sorority member

In contrast, participants reported 1) fitness/exercise identifiers and 2) males as those that would disapprove of them attending a well-being oriented GBE class.

The types of people reported as fitness/exercise identifiers were: “hardcore workout people”, “people that do cross fit”, “my weightlifting teacher”, and “bodybuilders.” Additionally, participants felt that males would disapprove of them attending this class because this type of class is not traditionally viewed as “real exercise.”

"I think someone that might be more of a hardcore workout person, they might just be like, oh that's kind of like a BS class." – white senior student

Factors That Make it Easier or Harder to Engage in Group-Based Exercise

Communal Framed Advertisement

Participants believed 1) having a friend to go with, 2) applicable and visible marketing materials, 3) representation, 4) being free to attend, 5) at convenient class time and location would make it easy to attend a communal-based GBE class. Majority of the factors shared that would make it harder to attend this same type of class were opposites of those that would make it easier.

One elaborated on her belief that more representation would make it easier to attend the GBE class, "I think it's always easier to work out if I see people of all fitness levels doing it, not just like super fit people doing it.... and sometimes I feel like I get self conscious if I'm not super fit and everyone around me is super fit." – Latina freshman student

Agentic Framed Advertisement

Participants believed that, 1) representation and 2) positive class environmental factors would make it easier for participants to attend an agentic type of class. Latina students in particular felt it would be easier to attend this class if there were people that looked like them in the class since they did not relate with the white thin female in the advertisement. Participants also reported actual class environmental factors that would make it easier to attend an agentic class: having a motivating instructor, an all female class, a female instructor, knowing that different levels of the movements would be offered in class, a welcoming instructor, and "if there was a part of the class that would teach you the skills you need to do the movements."

Factors that would make it harder to attend an agentic framed class were found to be: 1) lack of exercise experience, 2) distant class location, 3) inconvenient class time, and 4) negative class environment factors such as: if the class content was more advanced than their current

physical fitness level, if it was a “really fast-paced,” having men in the class, if the “coach is intimidating”, or if the “other females in the class have 6-pack abs”.

"It would make it harder to go if men are in the class, cause I feel like if it's a high intensity workout.... I get more subconscious when I'm sweating." – Latina freshman

“If it was really fast paced when you were there and you kind of felt like right as you start to understand what you were doing, you moved onto the next thing." – Latina senior

Appearance Framed Advertisement

Participants reported the following as factors that would make it easier to attend a class focused on improving one’s physical appearance 1) no men in the class, 2) personal goals matching class objective, 3) representation, 4) being a female undergraduate freshman

"Not having the pressure of having men there [would make it easier] because I feel like with men, or in workout classes when it's both sexes, I feel like there's more pressure to be pretty or to look a certain way.... and then it kind of takes away from the focus of why you're there. And so I think if you don't have that pressure then it feels more like a welcoming space for everyone." – white freshman student

“If you want to get a spring break body that would make it easier...” – white sorority member

"If you see a variety of women going to this class with different body types, it probably makes it feel more inclusive." – African American sophomore

"When you come in your freshman year, a lot of girls are worried about the freshman 15" – white sorority member.

The factors that participants felt would make it harder to attend an appearance based class were: 1) being overweight, 2) feeling judged, and 3) goals not matching the class objective

"If you were a heavier set woman or heavier than the girl in the picture, I would feel like, oh it's too hard for me" – white sorority member

"I feel like you always hear about people making fun of someone who may be bigger at the gym and trying to get healthier, and they get ridiculed even though they're making the effort to make that change, which can put them off in the future." – Latina senior

"It is hard to go to something like this if you already like how you look." – White senior health/fitness specialist major sorority student

Well-being Framed Advertisement

Participants referenced 1) positive environmental class factors that would make it easier to attend a class focused on improving their overall well-being. These factors were having good music in the class, positive people in the class, and having a relaxing ending to the class.

Additionally, participants felt that 2) convenient class time, such as a mid-day time for this class would make it easier to attend because, "it seems like it is a good energy boost." Some also felt that 3) having a friend to go with would make it easier to attend this type of class. Factors that would make it harder to attend a well-being class were: 1) distant class location, 2) inconvenient class time, and 3) if personal goals do not match class objective. More specifically they felt that if a female undergraduate student had aesthetic-based goals or had a high fitness level it would make it harder to attend this type of class geared towards improving overall well-being.

Discussion

To our knowledge, this study is the first to utilize framing theory alongside the conceptualization of the RAA to examine female movement beliefs with the aim to improve movement engagement inequality. Furthermore, there is promise in the intersection of health

behavior theory and communication theory in PA research to strengthen movement messaging among female populations by focusing on their specific belief systems.

The discussion is organized around the three major coded categories with illumination of salient subcategories reported within these categories. The discussion identifies outcomes that could best improve movement messaging to increase female movement engagement as well as future research implications.

The Positive and Negative Outcomes of Engaging in Group-Based Exercise

The RAA indicates that more perceived good outcomes than bad outcomes generates a more positive attitude towards the behavior to positively influence intention (Fishbein, 2011). Therefore, the results indicate that young adult females hold a more favorable attitude towards attending a GBE class when the advertisement is framed around well-being and improving their overall health and lives. This finding matches research suggesting exercise marketing is most successful in persuading the viewer to be active when the message is focused on how PA and exercise can improve one's life by making them feel better overall (M. L. Segar et al., 2011a).

Negative Body Image

The appearance advertisement generated the possible negative outcome belief of experiencing negative body image by attending such an aesthetically focused class. This response was not present in any other advertisement. Such a finding indicates that an appearance focused GBE class compared to the others would most likely result in negative body image for young adult females. To elaborate further, Lowe (2003) researched American college women and body image during the period of 1875-1930 and noted body image was at that time and still remains today a socially constructed idea and differs among cultural groups within the United States and internationally. Interestingly, more than one hundred years ago negative body image

was found to negatively impact an undergraduate female's health and academic success (Lowe, 2003). Still today studies show that negative body image negatively impacts health and also decreases PA engagement across the lifespan (Kopcakova et al., 2014; Schuler et al., 2004). Our results show young adult females believe they would experience negative body image from a GBE class advertisement with an appearance frame. The literature supports that health messaging efforts must utilize tactics to prevent negative body image among this population for overall positive health.

Improved Emotional Health

The well-being advertisement was the only variable that generated the positive outcome of improved emotional health. Evidence indicates that even when positive or negative life events are controlled for, there has been a positive correlation between PA and improved mood among the undergraduate population (Giacobbi et al., 2005). Other research indicates that college students are at an all time high of experiencing mood disturbances with anxiety or depression and campuses health centers are most commonly referring students with these symptoms for treatment (Kirsch et al., 2015). Thus, it is important to understand the style of movement that a young adult female believes will improve her mood and emotional health. Doing so may combat the prevalence of decreased mental and emotional health she may encounter on and off campus during her young adulthood. Results indicate young adult females believe a GBE class advertised with a well-being frame will improve their emotional health, which is reason for movement messaging efforts to honor this belief to support positive movement engagement for this female population.

Decreased PA

All variables but the well-being advertisement resulted in participants reporting a perceived negative outcome of decreased PA levels. Such a response is the exact opposite objective that health professionals want female populations to experience after viewing promotional movement messaging. The rationale of reporting decreased PA levels as a possible negative outcome came from the overarching idea that participants would lose motivation to keep attending the class due to boredom or embarrassment. This finding is in line with evidence that when one exercises for external factors, such as making oneself more attractive or physically stronger for others, they are less likely to sustain exercise (Ingledeew & Sullivan, 2002) and consequentially at greater risk for disordered eating (Furnham et al., 2002; Tiggemann & Williamson, 2000). Hence, young adult females believe they wouldn't sustain PA attending GBE advertised with communal, agentic, or appearance type frames. Yet, a well-being frame did not yield such a belief showing it to be the most suitable framing strategy to encourage sustainable movement among this population.

The Approvers and Disapprovers of Young Adult Females Attending Group-Based Exercise

The RAA implies that perceived norm, or what makes a behavior popular, is based on the beliefs an individual has about what important social referents/groups think (Fishbein, 2011).

Family

Participants believed their families and friends would approve of them attending all but the appearance-based GBE class. In fact, they believed their family and friends would disapprove of them attending the appearance-based class. The belief of having family support to engage in PA is important after considering evidence that showed a significant positive correlation with overall female PA when females of any race reported having family support to exercise (Treiber et al., 1991). Such a finding supports previous evidence that demonstrates

having family support is a positive determinant of intention to engage in PA and an appearance framed GBE advertisement does not garner this important support among the females in this study.

The “Fit People” and Exercisers

People that identified as being a “fitness person” or an “exerciser” were listed as types of people that would approve of young adult females attending the agentic-based or appearance-based GBE class. These beliefs point out the concern of popular acceptance among females that fitness professionals or “exercise people” would support efforts for weight loss and altering aesthetics through movement behaviors among the vulnerable population of young adult females. Even more concerning is that participants believed these same social referents would disapprove of them attending a well-being or communal based GBE. The well-being frame is shown to be a strong predictor for young adult female intention to attend a GBE class in that this population favors this messaging and therefore is more likely to engage in GBE.

The fact that this population believes groups of people that identify as a “fitness or exercise person” would disapprove of them attending a well-being class is note-worthy. Although a female may have higher intention to attend a well-being framed GBE class as a way to engage in movement, they will most likely be around fitness/exercise people in GBE environments. Consequently, this may alter young adult female intention to continue GBE behaviors since there is belief that these “fit” people disapprove of them being there. This finding supplements evidence of females that exercise in traditional fitness facilities with large mirrors, viewing fit female body types to compare with, or the male gaze compared to exercising outside of traditional fitness facilities without those characteristics reported significantly higher levels of

self-objectification, which is a risk factor for experiencing body shame and a decrease in mind-body or self-awareness (Prichard & Tiggemann, 2005).

Everybody

The most interesting social referent reported was “everybody.” Participants felt that everybody would approve of them attending a well-being class. On the other hand, one participant shared that everybody would approve of her attending an appearance-based class. For the well-being class, participants believed virtually everybody would approve of them attending because the class does not appear to do any harm or have a negative connotation. However, for the appearance class it was believed that everybody would approve of females attending such a class because “our society tends to care so much about appearance... and we over sexualize women.” This belief causes concern to know that a young college female student might attend a GBE class that is rooted in changing her aesthetically because everybody cares about what she should look like and it is normal to over sexualize women. Evidence shows that exercising for appearance related motivation places females at significantly higher risks of negative health outcomes associated with disordered eating and body dissatisfaction (Fuller-Tyszkiewicz et al., 2018; Furnham et al., 2002; Tiggemann & Williamson, 2000). Such evidence furthers the claim that an appearance frame be avoided when communicating movement behaviors among female populations. The culmination of these specific findings also support an argument that media enforces an appearance driven culture (Aubrey, 2010), which movement messaging initiatives for female populations must address.

Males

Interestingly, participants were split in reporting males as social referents that would both disapprove and approve of them attending an agent-based class. Those that believed males

would disapprove of them attending an agentic type of class rationalized males might not think it appropriate for females to attend a class that is geared towards building exercise skill and physical strength. On the other hand, the belief that males would approve of them attending this type of class was rationalized by men giving them respect to be able to do such “masculine” types of tasks.

Participant beliefs such as these are rooted in gender and the concept that PA and exercise behaviors are in fact dichotomized by gender. Historical evidence sheds light on how movement has come to an unequal division through females considering the male opinion that in turn influences female PA intention. Lowe (2003) accounted how college females in the early twentieth century “showed two loves: all things sport and physical activity. Engaging in what were deemed life-giving activities, students proudly displayed their physical agility and athletic skills” (p. 30). Now, in today’s world participants in this study are unsure of approval among their male counterparts to showcase their physical fitness by engaging in exercise behaviors. Yet, these participants understand males would approve of them showcasing such physicality when it is to enhance their physical appearance. The finding that males would approve of females attending an appearance oriented class, especially male students in fraternities echoes historical evidence of fraternity male students being most vocal in their objections to female students engaging in what they view as “masculine” behaviors (Lowe, 2003) such as exercise.

Even more, participants believed males would also disapprove of them attending well-being and communal based GBE because they may not view these classes as credible or “real exercise.” It appears that sense of community and feeling good overall are not messages that would garner the approval of males for females to attend GBE. The cause of this lack of approval, whether actual or solely a belief, is rooted in social and gender norms along with the

historical connotation of group exercise being a free form of movement only for females and not taken seriously by male counterparts in or outside of the fitness industry. Why would males disapprove of females engaging in a class that would build their social community and health or make them feel better holistically? Or better yet, why would females believe males would disapprove of them attending such classes? Such questions can be foundational in future research to further explore the gender dynamics of different movement behaviors.

It is clear the way movement behaviors have been gender classified may be negatively impacting female intention to engage in such behaviors when considering the worldwide PA level differences among men and women (World Health Organization, 2019). Moreover, large-scale worldwide PA data has investigated PA inequality among men and women and reported women in countries with higher PA inequality having a significant increased risk for obesity compared to men (Althoff et al., 2017). Our findings of male opinion impacting female beliefs regarding movement behaviors supports evidence of global gendered movement engagement inequality and displays such beliefs must be addressed in movement messaging to bridge this inequality.

What Makes it Easier and Harder to Engage in Group-Based Exercise

To recall, an individual's perceived behavioral control, or how easy it is to do a behavior, is influenced by the things they believe will be a barrier or facilitator to actually do the behavior (Fishbein, 2011).

Translational Class Factors

Participants shared similar beliefs regarding things they believed would make it easier or harder to attend the four differently framed GBE class. These beliefs are interesting to note how they can translate into aiding the structure and environments for movement behaviors and norms.

For example, the majority shared beliefs regarding the specific GBE class advertisements that can be applied to GBE programming as a whole. The concept of convenient class time/location, instructor characteristics, or other listed class environmental factors are beliefs that are transferable between each of the advertisements.

These translational beliefs are important for public health and fitness professionals that aim to increase young adult female movement levels through GBE or other movement-based programming. Professionals can incorporate these beliefs in order to help make it easier for women to participate in movement behaviors. This study did not focus on the actual GBE class experience itself, rather it is focused on the messaging that helps influence females to walk through the door and attend the class. Public health messaging would suggest that the GBE experience itself is positive and accurately meets the needs and message of the advertisement, which our findings suggest should be focused on well-being.

Messaging is very important to help populations actually perform healthy behaviors and to help shape cultural norms through the wording we use regarding healthy movement behaviors (Evans & Hastings, 2008). However, future research must focus on the actual experiences females have in exercise environments. Doing so, will assure these environments where females are learning to move their bodies also positively meets beliefs to increase and sustain their intentions regarding movement.

Representation

Most important to note is the belief that seeing or feeling there was more representation in the GBE class and the advertisement itself was a facilitating factor. Participants felt that if they saw people that looked like them, or saw a range of different bodies in the class it would make it easier to attend. It is important to note that these females who shared this belief are women of

color. Acknowledging the importance of this belief is integral in furthering the understanding and needs of female inclusivity in exercise, whether that is body type or skin color. In addition, participants shared positive beliefs regarding the diversity present in the well-being framed ad, showing an increased intention to engage in this type of GBE compared to the other frames.

Our findings imply movement based messaging to include representation of diverse female groups to help make it easier to engage in such behaviors that positively influence female health. After extensive searches of exercise advertisements of women during this study, it is concerning to witness the lack of diversity present. The standardized shape and race most prevalent of females in exercise advertisements in this search was that of white females of the “ideal” western female body figure or unattainably fit physique. The movement messaging tactic of focusing on the stereotypically thin and fit female is clearly not helping make it easier for females, let alone females of color or different body shapes, to engage in the exercise behaviors that are advertised, and in fact can have negative health consequences (Simpson & Mazzeo, 2017).

Lack of Exercise Experience

Participants also felt that having a lack of exercise experience would make it harder to attend an agentic-based class specifically. This raises another concern with the marketing/messaging tactics used in fitness industry to promote movement. Alongside the lack of representation in exercise advertisements there is a plethora of advertisements focused on elite training, high skills fitness, or visually focused on the unattainable form of the fitness model’s body parts. Evidence shows that advertising such as this is hurting females in that women exposed to elite fitness model-based advertisements compared to product-based or no advertisement reported significantly higher levels of social physique anxiety (Sabiston &

Chandler, 2010). These findings support the importance to represent diverse female bodies and physical fitness skill levels in exercise advertisements in order to improve female intention to engage in movement behaviors.

Conclusion

This study suggests that movement advertisements adhere to female beliefs and include a framing focus of overall well-being enhancement with a diverse range of females visually represented. Doing so may help positively influence female movement behaviors and bridge the gap of movement engagement inequality.

In order to move females in a behavioral direction for future adherence of protective health movement behaviors, messages designed to communicate more than what they should do (Latimer et al., 2010) and speak to their personal beliefs is imperative. The beliefs a woman holds are a result of her culture, which influence how she interprets messaging and how she makes choices (Deci & Ryan, 2000; Fishbein, 2011; Van Gorp, 2006). This study shows important discovery of young adult female beliefs regarding their engagement in GBE behaviors and how communal, agentic, appearance, and well-being framed GBE advertisements impact these beliefs.

Focusing on the impact of specific framing tactics that positively influence young adult female beliefs and ultimately intentions to engage in movement behaviors will help stakeholders create more effective messages to improve movement levels by adhering to female beliefs that are rooted in culture. The insights of this study support the claim that females can alter the cultural meanings of movement (Gimlin, 2002) and what it means to them to equalize PA levels through increased movement in their lives. Nonetheless, movement messaging efforts ought to apply female belief structures to create equal PA and exercise opportunities for all. To do so, it is

suggested that 1) diverse female representation be included in advertising regarding movement behaviors and 2) the movement message framing be focused on improving overall well-being above all, rather than a female's appearance, skill level, or relationship building, to most strongly influence her intention to engage in movement behaviors.

Funding

Not applicable

Conflicts of interest/Competing interests

Not applicable

Availability of data and material

Not applicable

Code availability

MAXQDA 2018 version 12 (VERBI Software, 2018)

Authors' contributions

Not Applicable

Tables for Manuscript One

Table 1 Pre-Study Online Search Terminology	
Frame Category	Search Terms
Communal	Exercising with friends, female group exercise, female friends exercising
Agentic	Female fitness goals, female exercising alone, female competitive exercise
Appearance	Sexy female exercise, beautiful women exercising, beautiful body exercise
Well-being	Happy exercise, feel good exercise, females smiling and exercising

Table 2 Constructs and Focus Group Questions	
Construct	Question
Attitude Towards the Act	1) What are the good things that might happen to female students like you if they go to this class? 2) What are the bad things that might happen to female students like you if they go to this class?
Perceived Norm	3) Who are the people that would approve of female students like you going to this class? 4) Who are the people that would disapprove of female students like you going to this class?
Perceived Behavioral Control	5) What might make it easier for female students like you to make it to this class? 6) What might make it harder for female students like you to make it to this class?

Chapter 4 – Manuscript Two

Framing Well: How Advertising Framing Impacts Young Adult Female Intention to Engage in

Exercise Behaviors

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Intended Journal: Health Communication Journal

Page limit: 25 pages (not including references, figures, tables)

Abstract

The benefits of physical activity are well known, yet females are less physically active than men overall. To examine how to increase female physical activity levels, this study investigated the effect of four advertising frames (communal, agentic, appearance, and well-being) on young adult females' intention to attend group exercise classes. 177 undergraduate females reported their level of intention to attend group exercise for each of the differently framed advertisements. A linear mixed model with random effect for subject analysis found a well-being frame generated significantly more positive intention scores while an appearance frame resulted in significantly more negative intention scores to engage in group exercise. The results indicate the importance of using well-being frames and avoiding appearance-based frames in communication designed to increase young adult female intention to engage in physical activity.

Keywords:

Physical activity, group exercise, movement behaviors, framing, female intention to exercise, well-being

Introduction

Improving population physical activity (PA) levels reduces the risk of many preventable chronic diseases. The health benefits are undeniable (Warburton & Bredin, 2017). Engaging in PA behaviors has been shown to promote overall general well-being through disease prevention, improved mood, and reduction in depression and anxiety symptoms (Giacobbi, Hausenblas, & Frye, 2005; Hogan, Catalino, Mata, & Fredrickson, 2015; U.S. Department of Health and Human Services, 2018). Even though the health benefits of PA are well established, 1 out of 4 adults globally are not sufficiently physically active (World Health Organization, 2019). Striking evidence has also shown that 6-10% of deaths globally have been a result of physical inactivity (Lee et al., 2012). To prevent illness and reap the undeniable benefits of a physically active lifestyle, American guidelines recommend adults move more and sit less throughout the day. Specifically, adults are encouraged to, engage in 150-300 minutes of moderate intensity movement, or 75-100 minutes of vigorous intensity movement throughout the week, along with engaging in muscle strengthening movement for all major muscles twice a week (U.S. Department of Health and Human Services., 2018). Less than half of American adults are meeting these PA recommendations (U. S. Department of Health and Human Services, 2018).

Lack of PA is more common among females than males in the United States (Blackwell & Clarke, 2018) and worldwide (World Health Organization, 2019). In the United States almost 45% of males ages 18-24 met the PA guidelines, while only a little over 20% of females ages 18-24 met the these guidelines (Katzmarzyk et al., 2017). A focus on improving frequency of PA among females is essential. Young adult females between the ages of 18-24 are of particular interest, as this developmental phase has been associated with a higher risk for developing unhealthy behaviors, including physical inactivity (M. C. Nelson et al., 2008).

Attending a group-based exercise (GBE) class can improve overall movement levels among young adult females. GBE has been shown to be a more sustainable behavior to improve overall PA levels than engaging in individual PA/exercise (Firestone et al., 2015; Harden et al., 2015). Advertisement messaging related to GBE may impact willingness to try and to sustain this movement behavior over time. It is important to understand how to positively influence female intention to attend GBE by addressing the impact of messaging.

It is also essential to understand how to positively influence female intention to attend specific movement behaviors (like GBE) with forms of messaging. There has been a call to reevaluate messaging tactics and their effectiveness in public health (Fishbein & Cappella, 2006). In the realm of PA, this is especially important since there has been little progress in improving adult PA levels over the past several years (Kohl et al., 2012; U.S. Department of Health and Human Services, 2018). The focus of persuasive messaging needs to focus on increasing one's intention, which The Reasoned Action Approach (RAA) states is "the single best predictor of whether one will (or will not) perform the behavior in question" (Fishbein, p.836, 2008).

Persuasive messages that utilize framing tactics have the power to make a positive difference in movement intention and behaviors (Latimer, Brawley, & Bassett, 2010). Framing is the way a message makes one factor, such as weight loss, more important than other factors, such as stress reduction, when viewers interpret the message (Cappella et al., 2018). Scheufele's framing theory states that frames have the power to influence individual thought and behavior (Scheufele, 1999).

Despite the evidence that persuasive message framing has the power to change behavioral beliefs and ultimately positively influence intention (Fishbein & Cappella, 2006; Latimer et al.,

2010; T. E. Nelson & Oxley, 1999), there is little research regarding the impact of message framing on young adult female intention towards movement behaviors. Previous studies have examined the following frames and their impact on movement related beliefs or behaviors: communal frames, agentic frames, appearance frames, and well-being frames. However, no current study has examined these four frames together to examine their relationship with young adult female intention to engage in specific exercise behaviors.

We propose using the RAA to identify the best frame to communicate and advertise movement behaviors in order to increase female movement levels. The RAA states that intention is influenced by one's attitude, perceived norm, and perceived behavioral control towards a behavior, and these determinants are influenced by one's beliefs. Attitude towards the act is how one perceives doing a behavior to be good or bad for them (Fishbein, 2011). Perceived norm is considered the perceived social pressure one feels to do a behavior (Fishbein, 2011). Perceived behavioral control is how much a person believes they can do a behavior or that they are in control of doing the behavior (Fishbein, 2011). Overall, in a simplified sense a person's intention to do a specific behavior is influenced by how fun (attitude towards the act), popular (perceived norm), and easy (perceived behavioral control) they believe the behavior to be (Jimerson et al., 2004).

This study aims to contribute to the under researched issue of how advertising framing impacts young adult female intention to engage in movement behaviors. To do so, the study addresses the following research question, *which messaging frame for a GBE advertisement most significantly impacts young adult female intention to attend a GBE class?* The RAA (Fishbein, 2011) and framing theory (Scheufele, 1999) are utilized to illustrate how these four different

frames impact young adult female intention to engage in GBE, and in turn have bearing over their health.

This study explores four communication frames: communal, agentic, appearance, and well-being and analyzes how these frames influence intention to participate in GBE among young adult females. Theoretically the RAA framework supplemented with framing theory is emphasized to examine which frame has the most significant positive impact on young adult female intention to engage in movement behaviors. Using frames that increase intention to participate in movement behaviors, such as GBE, can be used to better design programs, interventions, and health communications to increase female movement levels.

Frames Examined

The four frames (communal, agentic, appearance, and well-being) were selected because of their theoretical foundation, presence in relevant previous literature, and applicability to the target population of this study.

Communal and Agentic Frames

Literature based in health communication, sport psychology, social psychology, kinesiology, and media sciences have examined these two constructs with various objectives among studies (Howle et al., 2015, 2017; Infanger & Sczesny, 2015; Moskowitz et al., n.d.; Wojciszke & Abele, 2008).

Communal and agentic are theoretical concepts which are considered the “big two” when intellectualizing what generate one’s motives for behavior (Abele & Wojciszke, 2014). A communal frame is a message that focuses on creating and managing social relationships, while an agentic frame is one that focuses on personal mastery and success of the individual (Abele & Wojciszke, 2014b). These constructs are based on the historical premise of human nature that we

face two needs: to gain social acceptance and connection (communion), and to have competency and status (agency) (Bakan, 1966). Since the perceived values and motives relating to communal and agency are fundamental drivers of human behaviors (Abele & Wojciszke, 2014b; Bakan, 1966) it is important to consider how such frames based on these constructs can influence female intention to engage in PA/exercise behaviors.

Appearance and Well-being Frames

Literature from health communication, eating disorders, gender studies, and sport psychology have explored either appearance or well-being based concepts in studies ranging in objectives. (Aubrey, 2010; Berry & Howe, 2005; Sabiston & Chandler, 2010; Willis & Knobloch-Westerwick, 2014).

Rather than being derived from a theoretical foundation like communal and agency, appearance and well-being are true socially constructed concepts. An appearance frame is a message that focuses on looking better physically, while a well-being frame refers to a message that focuses on feeling better overall.

In an American culture, saturated with fantasized ideal body shapes for health/fitness messaging, examining if this communication strategy is helping or hurting female intention to engage in healthy movement behaviors is essential. Recall that framing is making one aspect more important than another in order to evoke action from the intended recipient. It is alarming that appearance frames then assume appearance to be the most important factor to influence intention when it has been shown that females who respond to appearance motives for exercise are more likely to experience disturbed eating and body esteem (Furnham et al., 2002; Prichard & Tiggemann, 2008). On the other hand, exercising for intrinsic overall well-being factors is

more sustainable and there is less health risk associated with it (Hagger & Chatzisarantis, 2014; Sabiston & Chandler, 2010).

The common and assumed goal of the health/fitness industry is to help people achieve well-being through healthy behaviors. The messaging of the industry should reflect this goal through its communication. Yet, historically health or wellness promotional media campaigns have been shown to have little impact on exercise behavior change specifically (Cavill, 1998; Hillsdon, 2001), which warrants research regarding how to best serve specific population's behavioral movement needs through health communication strategies such as framing.

Methods

This study was conducted among undergraduate female students at a large Midwestern public university campus. This population was selected because 1- it represents a sizeable portion of the local 18-24 female population of the area, and 2-because colleges and universities are places where the result of this research can be effectively applied.

Pre-Study Advertisement Variable Selection Process

The four framing themes served as the independent variables for this study: communal, agentic, appearance, and well-being. These frames represented the messaging focus for a fictitious group exercise class advertisement, Movement Medley-45. The tactic of creating advertisements for a fictitious group exercise class to analyze participant beliefs comes from a similar messaging study (Dimmock et al., 2013).

Advertisements for each frame were created from existing visuals that matched the frame's premise. These visuals were found through an online search. The goal of this search was to identify a photograph that would accurately represent the premise of its frame while visually depicting female exercise behavior. Text was later added to compliment the photograph specific

to each frame category. The text was a generic written description communicating the fictitious group exercise class.

The online image search was conducted using Google image search and Pinterest. These search engines were used because they are easy to access and are popular among this study's population. Google is a worldwide well-known search engine, while Pinterest is a popular social media site where individuals can search and view different visuals, also known as pins. These visuals come in forms of info graphics, photos, and videos. Users can create folders of saved images they like and gravitate towards. The majority of its users are females ages 18-29 (Duggan et al., 2015), which fits this study's sample. Using Pinterest as a search engine for images relating to female exercise mimics a previous study's effort to analyze online fitness content (Simpson & Mazzeo, 2017).

To select the advertisement that best represented each frame different search terms were used specific to the frame's objective. Table 1 exhibits sample search terms used for each framing category. The lead author selected six photos that best captured each frame category from this search, which totaled 24 advertisements. To accurately identify the one advertisement out of the six selected for each category, a pre-study frame validation was conducted.

Pre-study Frame Validation Process

Before official data collection for this study occurred, a group of pre-study participants completed a survey to identify which of the selected advertisements accurately captured the identity of the frame. This pre-study procedure was completed by visiting two undergraduate media communication courses and asking interested female students to provide feedback on advertising efforts for a new group exercise class. Interested and willing participants (N=43) then viewed each of the 24 advertisements on the classroom projector screen for thirty seconds.

Students were then give 30 seconds to answer three items catered to each framing category for every advertisement. Pre-study data were collected in-person via paper survey. Responses were provided on a five-point Likert scale, where five indicated a “strongly agree” response and one indicated a “strongly disagree” response, to indicate how accurately they believed the advertisement matched the frame’s criteria.

SPSS version 25 (IBM, New York) was used to analyze the pre-study validation data. The three items for each advertisement where then averaged to create a total score. The advertisement with the highest mean in each framing category was identified as the best representation for that frame to be utilized in the study. The advertisements identified as representative of each frame through this pre-study validation process are depicted in Figures 2-5.

Study Design

A cross-sectional survey design was used with the study population of young adult females with the sampling frame of undergraduate females at a public Midwestern university. The criteria to participate in the study included: identifying as female, being a currently enrolled undergraduate student at the researchers’ university, and being between the ages of 18-24.

A power analysis was conducted using G*Power version 3.0.10 to determine an appropriate sample size for the study. The analysis determined that a sample of 150 would have 97% power. 177 participants met these criteria and were included in the study. The researchers’ institutional review board approved the research.

Recruitment

Participants were recruited by in-class visits where the lead research conducted a brief presentation about the study in selected undergraduate courses in different departments to solicit

participation. Flyers were also posted on campus with information to access the survey online to participate. The online survey link was distributed to applicable student email list serves. Lastly, social media posts were utilized to generate participation among this particular population with a link to the online survey. For those recruited via email, a reminder email was sent one week after the initial request to participants in hopes to increase participation. In all modes of recruitment it was communicated that undergraduate female students could participate in the study by completing a brief survey (in-person or online when applicable) about group exercise advertisements and be entered into a drawing to win one of four \$25 gift cards.

Sample

In April 2019, 188 participants were recruited for this study. Four participants did not meet the criteria when completing the online survey and their progression to complete the survey was automatically stopped. Seven participants did not complete the paper survey in its entirety. As a result, these subjects were excluded from the sample. A total of 177 subjects that met the inclusion criteria and completed the survey in its entirety were included in the study.

Data Collection

Data was collected online and in-person during a four-week period. 120 participants were recruited by in-class recruitment and completed a paper survey. During these in-class recruitments, undergraduate female students were able to complete the surveys or take part in an alternative activity in the class if they chose not to participate. All other participants (N=57) completed the same survey online by accessing a link that connected them to the survey. All participants were presented informed consent information before deciding to participate in both the paper and online versions of the survey.

Survey Instrument

The survey was designed with Qualtrics (Qualtrics, Provo, Utah). Online participants received a link to access the survey. Those completing paper surveys received a printed version of the same survey. The first questions of the survey were used to confirm the participant met the inclusion criteria. Next, participants viewed each advertisement of the four specific messaging frames identified through the pre-study validation procedure. After viewing each advertisement participants answered two validated items measuring intention to attend the GBE class specifically being advertised. Lastly, other participant demographic and contextual information was obtained. Both delivery versions of the survey took approximately 5 minutes to complete.

Description of Measures

Two items based on The RAA measured the main outcome variable, intention. The two items had a seven-point scale response. Item one: My attending a class like this is (extremely unlikely --- extremely likely). Item two: I will attend a class like this (strongly disagree --- strongly agree).

The following participant characteristic information was collected: age, race, ethnicity, exercise identity, and group exercise participation.

Race was measured by allowing participants to self-report any of the following categories they would use to describe themselves: American Indian/Alaskan Native, Asian, Black/African American, Native Hawaiian/Pacific Islander, or White. Participants were given the option to not respond to this question if they preferred. Race was then categorized and measured in three categories (white, non-white, and prefer not to disclose). This was due to the small amount of participants that identified with races other than white. If a participant identified with any of the other race categories they were included in the non-white category.

Ethnicity was measured by participants choosing yes or no to indicate if they identified as being Hispanic or Latina.

An item used on the Exercise Identity Scale was used to measure exercise identity (EI) for this study. Understanding one's EI is a tool to identify those most likely to engage and sustain a movement program and to identify how important exercise is to one's sense of self (Anderson & Cychosz, 1994). The EI scale is a nine item scale that holds internal consistency and reliability with high scoring on the scale significantly relating to high exercise participation (Anderson & Cychosz, 1994). Since exercise identity was not the main focus of this study and the researchers wanted to avoid response fatigue when completing the survey, the entire EI Scale was not included in this survey. Participants were asked to rate how they agreed or disagreed on a seven-point scale with the following statement measuring exercise role identity: I consider myself an exerciser. EI was included as a characteristic measure to examine how significantly a young adult female's perception of EI impacted her intention score associated with the different frames.

Group exercise participation frequency was measured by participants indicating their average participation rate in group exercise in the past year (0, 1-2 times, 3-5 times, 6-8 times, 9-11 times, 12-14 times, 15 or more times.) This measure was included to illuminate if GBE participation significantly impacted intention score among the sample.

Analysis

Analysis was conducted using SPSS version 25 (IBM, New York). The two RAA items to evaluate intention were averaged to create one value for each participant's response to each of the advertisements. Intention was analyzed using a linear mixed model with random effect for subject, where intention was the dependent variable, the four advertisements were the independent variables, and participant characteristics (age, race, ethnicity, exercise identity, and

group exercise participation) were covariates. The model was utilized to identify which advertisement yielded the highest intention score among the sample.

Results

Table 2 illustrates descriptive participant characteristic data. The majority of participants were 18 years old (29.9%) or 19 years old (27.7%), white (69.5%) and not Hispanic or Latina (92.1%). 35% identified as exercisers based on EI scale. 27.5% reported engaging in group exercise three to five times in the past year.

In the linear mixed model with random effect for subject, intention served as the continuous dependent variable to the categorical advertisement frame independent variables. For the best fit model the following served as covariates: age, race, ethnicity, exercise identity, group exercise participation, and advertisement frame. Age, race, ethnicity, and advertisement frame were considered categorical variables. Exercise identity and group exercise participation were nominal variables. The model (Table 3) showed two covariates had a significant effect on participant intention scores. Advertisement frame had a significant effect on participant intentions scores ($F(3, 683) = 15.01, p < 0.001$), which indicates the independent variables' significance. Exercise identity score also had a significant effect on participant scores ($F(6, 683) = 6.56, p < 0.001$), indicating that a participant's self-reported identity with exercise had a significant impact on their overall intention score.

Table 4 shows the linear mixed model results of advertising effects on mean intention scores. The intention score to attend a well-being framed GBE class was significantly more positive than the appearance framed GBE advertisement intention score ($p < 0.001$, mean difference: 1.04(.62, 1.46)), the communal framed GBE advertisement intention score ($p < 0.001$, mean difference: .63(.21, 1.05)), and marginally more positive than the agentic framed

GBE advertisement ($p = 0.074$). The intention score to attend an agentic framed GBE class generated a significantly greater intention score than the appearance framed GBE advertisement ($p < 0.001$, mean difference: $.64(.22, 1.06)$). The appearance framed GBE advertisement produced a marginally lower intention score to attend GBE than the communal framed GBE advertisement ($p = 0.064$). Table 5 shows the differences between each messaging frame variable to further compare the significant differences between intention scores for each framed advertisement dependent variable.

The assumption for normality was met with mild skewness in this model as shown in Figure 5. Lastly, the assumption of homogeneity of variances was not completely met in the model due to a mild violation.

Discussion

This study's aim was to identify the extent to which the four selected frames had a significant positive impact on young adult female intention to attend an advertised GBE class, and in turn identify the best predictor of intention. Even though previous literature has indicated more favor towards communal over agentic movement oriented communication (Abele & Wojciszke, 2014a; Howle et al., 2017) and the negative health impacts regarding appearance oriented communication among female populations (Berry & Howe, 2004; Furnham et al., 2002; Meyer et al., 2013; Prichard & Tiggemann, 2008; Strelan et al., 2003; Tiggemann & Barbato, 2018; Tiggemann & Williamson, 2000) the study aimed to investigate all four frames in the context of GBE specifically.

A well-being framed advertisement is the strongest predictor of intention among the four different message frames to attend a GBE class for young adult females. The results show the well-being framed advertisement yielded significantly more positive intention scores among

participants compared to the other framed advertisements. Since intention is the most proximal determinant of behavior (Fishbein, 2011), it is worth noting that a well-being oriented framing strategy appears most effective in increasing female movement levels through increasing their intention to do such advertised active behaviors.

A finding such as this illuminates the still present need to reevaluate movement communication (Fishbein & Cappella, 2006) and to frame movement messages towards female populations with a focus on improving overall health to feel better intrinsically for oneself. A female can subjectively determine what “feels good” or what “well-being” is to her and allowing these concepts to be her motivation for engaging in movement has been found as a positive predictor of exercise (Sebire et al., 2009). Public health efforts seek to improve PA levels, and our findings show changing the frame of movement messages to that of internal enjoyment, feeling good and subjectively more healthy overall may actually help improve movement levels among female populations, such as young adults, which is also supported by relevant literature (Furnham et al., 2002; Ingledew & Sullivan, 2002; M. L. Segar et al., 2011b, 2012; Strelan et al., 2003).

Furthermore, our findings demonstrated the appearance framed advertisement resulted in significantly less intention scores compared to the agentic and well-being frames and marginally less than the communal frame. As a result, we argue appearance-based advertising for physically active lifestyles and behaviors be avoided when targeting young adult female populations, such as undergraduate women. The historically popular strategy of framing focused on the appearance of women or manipulating their aesthetics through movement behaviors, such as GBE, is not improving PA levels especially considering PA levels overall are not increasing and sedentary behaviors are increasing (Church et al., 2011). This is further evident when bearing in mind a

worldwide report highlighting women as less physically active than men with a global prevalence difference among men and women of 6% in 2001 and then up to 8% in 2016 (Guthold et al., 2018).

Literature has indicated appearance-based framing for movement behaviors is detrimental to young adult female health (Fuller-Tyszkiewicz et al., 2018; Furnham et al., 2002). To demonstrate further, Homan and Tylka (2014) examined 321 college women and found those that exercised for appearance-based motives had weak relationships with exercise frequency, even if these women had high levels of positive body image. Sadly, aesthetic oriented and elite fitness styled health communication remains dominant in movement-based advertisements framed with the idea of getting “beach body ready,” a “no pain, no gain” mentality, or objectifying the female body (Aubrey & Hahn, 2016; Dishman, 2001; Drake & Radford, 2019).

Our findings also showed the four different messaging frames created statistically significant differences in intention scores among participants. This furthers our argument by inferring that message framing does indeed make a difference in young adult female intention to attend a GBE class. This finding is supported by research that argued messaging style most definitely matters for behavioral engagement when advertising group exercise classes to females (Brown et al., 2017).

There was also a statistically significant difference in intention scores among participants that reported different EI scores, showing that how a female identifies with exercise impacts her intention to engage in movement behaviors. Such a concept is not too outlandish when considering one’s exercise identity has been shown to positively correlate with actual exercise behavior (Anderson & Cychosz, 1994). This study used a single item to capture a generalized finding regarding the sample’s belief on the centrality of exercise to their identity. However, to

make a stronger claim regarding correlation of EI and intention to attend variously framed GBE classes it is recommended to use the full scale for measurement in future research. Even though the EI scale is a tool to help identify those most likely to engage and sustain a movement program (Anderson & Cychosz, 1994), one's exercise identity score can also indicate their susceptibility to the negative phenomenon of exercise dependence and its high correlation with social physique anxiety (Cook et al., 2015; Murray et al., 2013). Future research regarding movement messaging impacts and exercise identity among young adult females should consider such findings due to the high risk of social physique anxiety and exercise dependence in this particular population, especially among active undergraduate females (Guidi et al., 2009; Krane et al., 2001).

Implications for Practice

This study did not focus on the actual GBE class experience itself, rather it is focused on the messaging that helps influence young adult females to walk through the door, attend the class, and raise their engagement with movement. There is the hope for the good of public health that the GBE experience itself is positive and accurately meets the needs and message of the advertisement, which our findings demonstrate should be focused on improving one's well-being while having fun and feeling good. According to Homan and Tylka (2014), findings in a study where college females were randomly assigned to participate in a group exercise class that had an instructor focus on communicating the positive health benefits of participating in the class or one where the instructor focused on how the class would improve their appearance found that college females in the overall health benefits oriented class reported significantly more positive experiences with the exercise class than those in the appearance-based class (Raedeke, 2007).

Such findings are a reminder that once a GBE participant walks through the door the burden of responsibility lies on the movement professional leading a class.

Messaging is very important to help populations actually perform healthy behaviors and to help shape cultural norms through the wording we use regarding healthy movement behaviors (Evans & Hastings, 2008). Focusing future research on the actual experiences females have in movement environments is essential. A focus on how females “feel” about the environment will assure that they learn to move their bodies in a positive and healthy way thus increasing and sustaining their intentions regarding movement behaviors.

Limitations

Although our study has various meaningful implications, the study’s limitation lies in the sample not being robust in racial diversity and being able to generalize the undergraduate female experiences. We believe future research focused on movement message framing effects among different female races and ethnic groups would better capture stronger results to help improve overall daily movement engagement levels for women. Previous research has examined the variances in beliefs among different female racial groups (D’Alonzo & Fischetti, 2008; M. Segar et al., 2017), but there is littler research regarding the impact movement messaging has among different female racial and ethnic groups. As McArthur (2009) claimed over ten years ago, there is a present lack of research regarding racial differences in exercise behaviors among female college student populations and current studies still echo this claim (Gerst Emerson & Gay, 2017; Nightingale et al., 2016; Sallis et al., 2019). With this, we suggest the need for future research to identify the various ways race influences a female’s intention to engage in movement behaviors and how these findings can better tailor inclusive messaging to improve female movement engagement levels. This reiterates other research that highlights significant

differences among races for reasons to engage in exercise (Egli et al., 2011; McArthur, 2009) and race as a moderator in the perceived ability to be active in one's environment (Lightfoot & Blanchard, 2011).

Lastly, there was a mild departure from the assumption of homogeneity of variances in the linear mixed model. This is a limitation but also a consideration for future research to consider in analyses.

Conclusion

By focusing on increasing young adult female intention to engage in movement behaviors through health communication efforts, public health efforts are able to impact the most salient predictor of behavior to get more females moving and reaping the irrefutable health benefits that are found to compliment an active lifestyle (2018 Physical Activity Guidelines Advisory Committee., 2018). Such efforts alongside framing theory, which illuminates how a frame is the way we see the world (Lakoff, 2004) and is rooted in our culture, support the notion that messages we receive do indeed shape our behaviors (Smith et al., 2010). Therefore, to best serve the health of female populations, especially young adult women, health communication efforts must change movement messaging to be better framed around positive overall health, fun, and well-being to get more women living and sustaining active lifestyles.

Our study was conceptualized using the RAA and framing theory with the aim to identify the best framing strategy among communal, agentic, appearance, and well-being frames to increase young adult female intention to engage in GBE. Nonetheless, these findings unveil another aim to call on health, fitness, and movement professionals to assist in eliminating aesthetically focused movement messaging and reshape movement communication to include a

well-being focus. Doing so may positively improve movement levels among young adult female populations, and ultimately so many more.

Tables and Figures for Manuscript Two

Table 1. Pre-Study Advertisement Selection Process Search Terminology	
Frame Category	Search Terms
Communal	Exercising with friends, female group exercise, female friends exercising
Agentic	Female fitness goals, female exercising alone, female competitive exercise
Appearance	Sexy female exercise, beautiful women exercising, beautiful body exercise
Well-being	Happy exercise, feel good exercise, females smiling and exercising

Table 2. Participant Characteristics (N=177)

Characteristic	N	%
<u>Age</u>		
18	53	29.9
19	49	27.7
20	18	10.2
21	28	15.8
22	11	6.2
23	11	6.2
24	7	4.0
<u>Race</u>		
White	123	69.5
Non-white	49	27.7
Prefer not to disclose	5	2.8
<u>Ethnicity</u>		
Of Hispanic or Latino Origin	14	7.9
Not of Hispanic or Latino	163	92.1
<u>Exercise Identity</u>		
Strongly disagree	2	1.1
Disagree	7	4.0
Somewhat disagree	6	3.4
Neither agree nor disagree	17	9.6
Somewhat agree	45	25.4
Agree	62	35.0
Strongly agree	38	21.5
<u>Group Exercise Participation Frequency in the Past Year</u>		
0 time	13	7.3
1-2 times	20	11.3
3-5 times	49	27.7
6-8 times	25	14.4
9-11 times	15	8.5
12-14 times	11	6.2
15 times +	44	24.9

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	683	637.19	.000
Advertisement Frame	3	683	15.01	.000*
Exercise Identity	6	683	6.56	.000*
Race	2	683	2.22	.110
Ethnicity	1	683	1.35	.245
Group Exercise Frequency	6	683	1.46	.191
Age	6	683	1.84	.008

a. Dependent Variable: Intention.

Advertisement Frame	Intention Score
Communal Ad	4.10 ± .19 ³
Agentic Ad	4.33 ± .19 ⁴
Appearance Ad	3.69 ± .19 ^{2,4,6}
Well-being Ad	4.73 ± .19 ^{3,6}
P-value	< .001*

1, Significantly different (p<.05) between communal and agentic; 2. Significantly different (p<.05) between communal and appearance; 3. Significantly different (p<.05) between communal and well-being; 4. significantly different (p<.05) between agentic and appearance; 5 Significantly different (p<.05) between agentic and well-being; 6. Significantly different (p<.05) between appearance and well-being;

*The values are reported in mean ± SE

Table 5. Linear Mixed Model Pairwise Comparisons^a

Advertisement (I)	Ad (J)	Mean Difference (I-J)	Std. Error	df	Sig. ^c	95% Confidence Interval for Difference ^c	
						Lower Bound	Upper Bound
AGENTIC Intention	APPEARANCE Intention	0.64*	.159	683	.000	.221	1.06
	COMMUNAL Intention	0.23	.159	683	.842	-.186	.655
	WELL-BEING Intention	-0.40 ^m	.159	683	.074	-.819	.022
APPEARANCE Intention	Agentic Intention	-0.064*	.159	683	.000	-1.061	-.221
	COMMUNAL Intention	-.407	.159	683	.064	-.827	.013
	WELL-BEING Intention	-1.04*	.159	683	.000	-1.460	-.619
COMMUNAL Intention	AGENTIC Intention	-0.23	.159	683	.842	-.655	.186
	APPEARANCE Intention	0.40	.159	683	.064	-.013	.827
	WELL-BEING Intention	-0.63*	.159	683	.000	-1.053	-.213
WELL-BEING Intention	AGENTIC Intention	0.40 ^m	.159	683	.074	-.022	.819
	APPEARANCE Intention	1.04*	.159	683	.000	.619	1.460
	COMMUNAL Intention	0.63*	.159	683	.000	.213	1.053

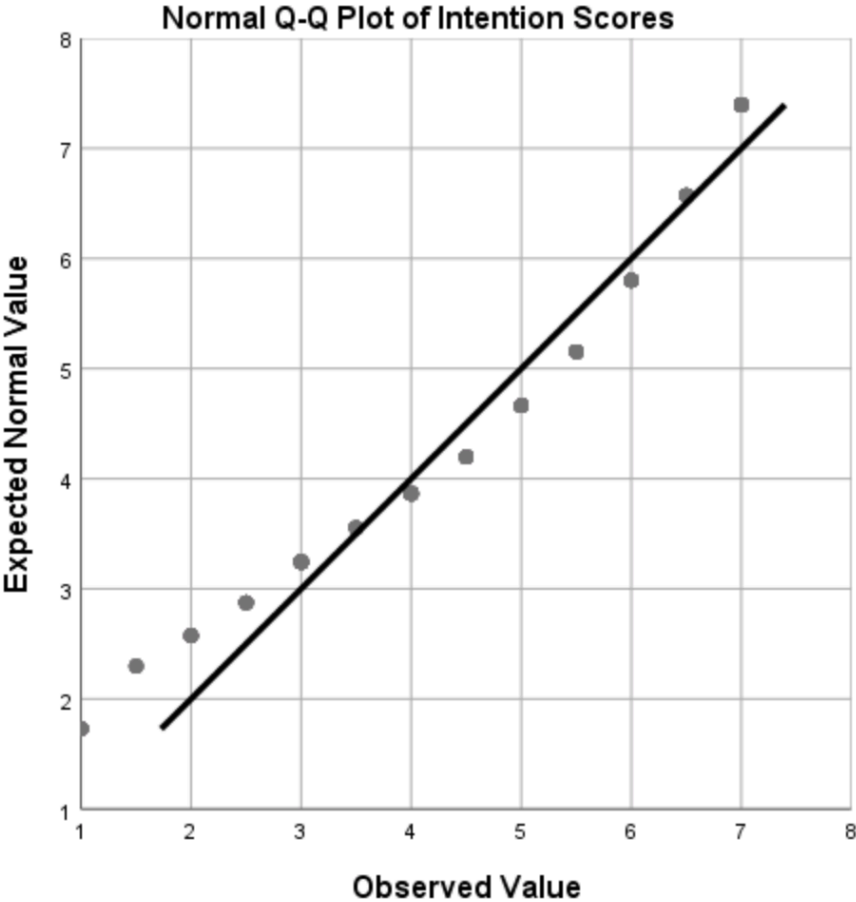
Based on estimated marginal means:

*. The mean difference is significant at the .05 level

a. The dependent variable: Intention

c. Adjustment for multiple comparisons: Bonferroni

Figure 6. Q-Q Plots – Assumption of Normality



Chapter 5 – Reflections

The overall experience of completing this dissertation has shaped my future trajectory as a researcher and taught me valuable lessons. My trajectory as a whole focuses on research to find meaning in the relationship between social and behavioral factors with female movement behaviors. In pursuit of this research agenda, I intend to embody the lessons learned throughout my dissertation process in my approaching endeavors as a researcher, educator, mentor, and loved one.

Female Population Focused Research Trajectory

My dissertation experience has solidified my interest and commitment to conduct research with female populations. Prior to conducting this research I had a strong interest in working with female populations to understand why females were or were not physically active. This desire was a result of simple personal bias due to 1) being a female, 2) being a female that has always had a passion for movement, and 3) understanding that not every female feels the same about moving their body. This dissertation was my first experience conducting research with a female sample, and it will not be my last. More specifically, this first experience working with a female sample was with undergraduate female students. This sample was chosen mostly for convenience in data collection. However, there was an underlying interest to work with college-aged female students because I myself was still able to relate and connect with this population as a current graduate student with somewhat recent undergraduate memories and experiences.

Throughout this research, I acknowledge I am still going to grow as a researcher and as a woman no longer so easily able to connect and relate with an undergraduate female. I hold a personal desire to explore the meaning of movement for women in my peer group throughout my

life. With this understanding, **I aim to allow the female population interests in my research to evolve.** My research agenda now includes objectives to conduct studies specific to my interests across the female lifespan. Such topics of inquiry include: 1) exploring how motherhood or pregnancy impacts movement beliefs and behaviors to further understand physical activity disparities among men and women 2) exploring how aging impacts female movement beliefs and plays a role in preventative health behavior engagement.

Furthermore, the results of my dissertation research highlighted a need to increase the representation of diverse females visually present in movement media communication. The implication of doing so would be to inclusively increase female intention to engage in movement behaviors by visually representing more diverse body shapes, sizes, and skin colors that more women can relate to. The results of this study **furthered my desire to address the unique needs of underrepresented female populations through future research in order to inclusively promote healthy movement behavior engagement.** The guidance I have received from mentors and the insight from study participant experiences throughout my dissertation has empowered me to seek research initiatives for underrepresented female groups. My trajectory now includes objectives to utilize my growing bilingual skill-set to work with Spanish-speaking immigrant female populations and address their specific movement needs in order to speak to broader issues of health inequalities among an already marginalized female population.

Qualitative Research Emphasis Research Trajectory

My experience with qualitative research in this mixed-methods dissertation study has also shaped my research trajectory. Being able to hear and analyze the participants' experiences in their own words was the most eye-opening aspect of this work for me. In my experience with quantitative research I realized I held many assumptions or had concepts left unanswered or

misinterpreted in regards to the subjects of the study. For example, in the quantitative aspect of this study the results indicated advertisements with a well-being frame generated the highest levels of intention for young adult females. However, in my opinion the qualitative aspect illuminates why these females reported higher intention. Through qualitative inquiry we come to understand that these females felt a group exercise class advertised in that way seemed like it would be more fun to do, not too hard to engage with, and more positive people in their lives would approve or encourage them to go to that type of exercise class. **Being able to connect participants' personal beliefs through qualitative inquiry has furthered my desire to conduct mixed-methods or purely qualitative studies in my future research.**

Lesson learned – Confidence and Identity

The most important lesson I learned throughout completing my dissertation is to **have confidence in who I am and the decisions I make.** My committee has been very influential in teaching me this lesson. In particular, my chair advisor, Dr. Lucia Guerra-Reyes, showed me how to pursue an idea and make it meaningful. From the point of presenting my dissertation proposal to today I have gained more confidence in every meeting with her in my ability to identify as a researcher and a growing expert in my field. She taught me how to be a researcher focused on an area that one is passionate about and asked me questions that made me think critically. It is important to understand *how* this mentorship made me think critically. Rather than being critical about myself I began to think critically about my work, which ultimately made me a more confident young woman in my field of study. I intend to carry forward this lesson along with confidence in my ability to make the best decisions for myself. Also, my master's degree graduate advisor and current committee member, Dr. Carol Kennedy-Armbruster, has unwaveringly pushed me to have confidence in honoring and knowing what is best for me

personally and professionally. I intend to embody the skillsets and tools of mentorship my entire committee has shown me when I am a future mentor.

With this confidence, I began to understand that my work does not define me as a person. Instead **I learned that I define my work.** Through the dissertation process, I allowed my work to become a channel for creative energy and a space to let my interests be fulfilled. I am grateful to have learned such a lesson at this point in my career because it allowed me to build a healthy boundary of identity between work and home, which has made me a healthier and happier version of myself.

For these lessons learned, I will be a more empowering mentor, fulfilled at work and at home, and forever grateful.

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Supplemental Material

Pre-study Framing Validation Instrument

Advertisement #1

1. This advertisement represents a class that builds social connections.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that makes people feel welcomed.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that builds and maintains personal relationships.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #2

1. This advertisement represents a class that builds social connections.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that makes people feel welcomed.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that builds and maintains personal relationships.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #3

1. This advertisement represents a class that builds social connections.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that makes people feel welcomed.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that builds and maintains personal relationships.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #4

1. This advertisement represents a class that builds social connections.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that makes people feel welcomed.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that builds and maintains personal relationships.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #5

1. This advertisement represents a class that builds social connections.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that makes people feel welcomed.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that builds and maintains personal relationships.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #6

1. This advertisement represents a class that builds social connections.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that makes people feel welcomed.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that builds and maintains personal relationships.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #7

1. This advertisement represents a class that focuses on the pursuit of individual mastery of exercise skills.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where participants have a desire to be the fittest person in the class.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class where people focus on themselves rather than the group.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #8

1. This advertisement represents a class that focuses on the pursuit of individual mastery of exercise skills.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where participants have a desire to be the fittest person in the class.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class where people focus on themselves rather than the group.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #9

1. This advertisement represents a class that focuses on the pursuit of individual mastery of exercise skills.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where participants have a desire to be the fittest person in the class.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class where people focus on themselves rather than the group.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #10

1. This advertisement represents a class that focuses on the pursuit of individual mastery of exercise skills.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where participants have a desire to be the fittest person in the class.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class where people focus on themselves rather than the group.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #11

1. This advertisement represents a class that focuses on the pursuit of individual mastery of exercise skills.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where participants have a desire to be the fittest person in the class.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class where people focus on themselves rather than the group.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #12

1. This advertisement represents a class that focuses on the pursuit of individual mastery of exercise skills.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where participants have a desire to be the fittest person in the class.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class where people focus on themselves rather than the group.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #13

1. This advertisement represents a class that is focused on making participants look better physically.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where people want to be sexier.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that will help participant appear more attractive to other people.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #14

1. This advertisement represents a class that is focused on making participants look better physically.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where people want to be sexier.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that will help participant appear more attractive to other people.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #15

1. This advertisement represents a class that is focused on making participants look better physically.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where people want to be sexier.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that will help participant appear more attractive to other people.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #16

1. This advertisement represents a class that is focused on making participants look better physically.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where people want to be sexier.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that will help participant appear more attractive to other people.

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Advertisement #17

1. This advertisement represents a class that is focused on making participants look better physically.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where people want to be sexier.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that will help participant appear more attractive to other people.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #18

1. This advertisement represents a class that is focused on making participants look better physically.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class where people want to be sexier.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that will help participant appear more attractive to other people.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #19

1. This advertisement represents a class that will help participants feel better.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that will help participants improve their mood.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that focuses on improving the physical, emotional, and mental well-being of participants.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #20

1. This advertisement represents a class that will help participants feel better.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that will help participants improve their mood.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that focuses on improving the physical, emotional, and mental well-being of participants.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #21

1. This advertisement represents a class that will help participants feel better.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that will help participants improve their mood.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that focuses on improving the physical, emotional, and mental well-being of participants.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #22

1. This advertisement represents a class that will help participants feel better.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that will help participants improve their mood.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that focuses on improving the physical, emotional, and mental well-being of participants.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #23

1. This advertisement represents a class that will help participants feel better.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that will help participants improve their mood.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that focuses on improving the physical, emotional, and mental well-being of participants.

strongly disagree disagree neither disagree or agree agree strongly agree

Advertisement #24

1. This advertisement represents a class that will help participants feel better.

strongly disagree disagree neither disagree or agree agree strongly agree

2. This advertisement represents a class that will help participants improve their mood.

strongly disagree disagree neither disagree or agree agree strongly agree

3. This advertisement represents a class that focuses on improving the physical, emotional, and mental well-being of participants.

strongly disagree disagree neither disagree or agree agree strongly agree

Jaclyn Inel Hadfield

EDUCATION

Indiana University Bloomington - Bloomington, Indiana

Doctor of Philosophy in Health Behavior - May 2020

Indiana University Bloomington - Bloomington, Indiana

Master of Science in Kinesiology- May 2016

Southern Illinois University Carbondale - Carbondale, Illinois

Bachelor of Science in Hospitality and Tourism Administration - May 2014

Grenoble Ecole De Management - Grenoble, France

Studies in International Strategy, Marketing, and Management - May 2013 - June 2013

Accent University Rome - Rome, Italy

Studies in Italian, Art History, and World Literature - January 2011 - May 2011

RESEARCH EXPERIENCE

Indiana University Center for Rural Engagement - Bloomington, Indiana

Graduate Investigator - July 2019 – present

- Assist principal investigators in work funded by the Indiana State Department of Health – Office of Women’s Health Rape Prevention Education Funding (\$17,000 six month contract)
- Collaborate in the design and implementation of sexual violence prevention educational sessions in rural Indiana to decrease the risk of sexual violence among adolescents
- Serve as a community liaison between rural Indiana community stakeholders and university affiliates
- Complete monthly invoice and progress reports to the Indiana State Department of Health

- Follow request for proposal guidelines to co-write and submit a \$127,000 grant application with the Indiana State Department of Health to continue current project

Healthy IU - Bloomington, Indiana

Healthy IU Group Movement Program Co-Coordinator/Investigator - January 2016- May 2018

- Designed and implemented an 8-week group-based physical activity program for 40-50 university faculty/staff employees per semester
- Integrated service-learning components for the 15-20 undergraduate students enrolled in the partnering undergraduate course, *Methods of Group Exercise*
- Quantified participant information obtained from pre and post surveys and weekly attendance data for future research objectives

American College of Sports Medicine Health and Fitness Summit

Presenter and Co-presenter - April 2018

- Presented original research at the conference's national student poster presentation forum, *Case Study Examination of a Worksite Group-based Physical Activity Program and its Impact on Physical Activity Engagement in the Workplace*
- Co-presented original research, *Ready to Move: A Unique University Worksite Wellness Initiative*, that highlighted the physical activity outcomes of university employees that participated in two different worksite wellness interventions

Indiana University School of Public Health Research Day

Presenter - April 2018

- Presented poster detailing original research, *Examination of a Worksite Group-based Physical Activity Program and its Impact on Physical Activity Engagement in the Workplace*

CURRENT RESEARCH PROJECTS

- Guerra-Reyes (Doctoral Chair Advisor)

Health communication, female physical activity behavior

Advertisement framing impact on undergraduate female intention towards attending group-based exercise classes

The goal of this quantitative research project is to identify which message framing tactic for group exercise advertisements is most likely to predict undergraduate female intention to attend group-based exercise classes.

Role: Principal investigator

- Guerra-Reyes (Doctoral Chair Advisor)

Female physical activity beliefs, health communication

Undergraduate female beliefs towards attending group-based exercise classes

The goal of this qualitative research project is to identify the undergraduate female beliefs associated with different group exercise advertisements to better tailor physical activity communication efforts to diverse populations of female undergraduate students.

Role: Principal investigator

JOURNAL ARTICLES IN PREPARATION

* indicates submitted for publication

***Hadfield, J.**, Kennedy-Armbruster, C., Huber, L., & Middlestadt, S. (2019). *Physical Activity in the Workplace – Making the Healthy Choice the Easy Choice.*

Hadfield, J. & Hsien-Chang L. *Choice of Transportation Mode and Associated Walking and Biking Behaviors.*

Hadfield, J. & Kane, S. *Tourism, Cultural Norms and Water Use Behaviors in Cuba: A Preliminary Field Study.*

SERVICE EXPERIENCE

Indiana University School of Public Health - Bloomington, Indiana

Council on Education for Public Health (C.E.P.H.) Accreditation Process Internal Consultant -

March 2019 – July 2019

- Analyzed public health degree program online course content to identify the needs to meet the Council on Education for Public Health accreditation standards
- Edited online course content to include required content and assessment opportunities for each foundational public health learning objective
- Collaborated with different department representatives in the Indiana University School of Public Health to meet deadlines and school accreditation requirements

Indiana University School of Public Health - Bloomington, Indiana

Mentoring - Spring 2019 & Fall 2018

- Mentored undergraduate research assistant on qualitative and quantitative data collection processes through survey administration, focus group transcription, and data input during the Spring of 2019.
- Served on a student panel to mentor first year doctoral students during the Fall of 2018. Advised on navigating doctoral coursework, new teaching responsibilities, and became a point of contact for orienting new doctoral students.

Indiana University School of Public Health – Kinesiology Department - Bloomington, Indiana

Course design and textbook internal consultant - Summer 2017

- Designed and organized course materials for a new behavioral aspects of physical activity department course integrated into a new department undergraduate degree program
- Co-edited chapters for new textbook, *Fitness and Wellness: A Way of Life*, to be utilized in the department's undergraduate courses on wellness and behavioral physical activity

Translational Journal of the American College of Sports Medicine

Peer Reviewer - Spring 2017

- Peer reviewed submitted articles on topics specific to behavioral aspects of physical activity

National Aerobics and Trainers Association - Offsite consultant

Subject Matter Expert - April 2017- August 2017

- Created and reviewed survey question items to help professional association obtain national accreditation
- Provided expertise in subjects related to exercise, communication while leading exercises in a group setting, and exercise environmental factors that influence exercise adherence

Indiana University School of Public Health – Kinesiology Department - Bloomington, Indiana

Worksite Wellness Service Learning Program Co-Coordinator - March 2017- May 2017

- Designed and delivered a weekly physical activity program for 12 elementary school teachers while working in partnership with the Indiana University Kinesiology Department Service Learning representatives

TEACHING EXPERIENCE

Indiana University School of Public Health – Applied Health Science - Bloomington, Indiana

Associate Instructor - October 2016 - present

- Create course content to include lectures, presentations, activities, quizzes, exams, and group assignments to match specific learning outcomes for both in-class and online courses
- Effectively integrate course content into the university's online Learning Management System - Canvas
- Instruct undergraduate students on specific health topics across the lifespan in Men's Health (Fall 2016) and online and in-class courses of Stress Prevention and Management (Spring 2017 – Fall 2019)
- Mentor and collaborate with assigned teaching assistants to develop their responsibilities in the classroom
- Completed Indiana University Bloomington Associate Instructor Training regarding classroom conduct and inclusive teaching strategies

Indiana University School of Public Health – Applied Health Science - Bloomington, Indiana
Social and Behavioral Determinants of Health Graduate Assistant Instructor - Fall 2018

- Addressed graduate student inquiries regarding lecture content and course assignments that discussed relevant health behavior theories to examine social and behavioral determinants of individual and population health

Indiana University School of Public Health – Kinesiology - Bloomington, Indiana

Group Physical Activity and Exercise Instruction Associate Instructor - August 2015 - December 2017

- Reinvented course design to incorporate service learning components, behavioral aspects of exercise content, and practical application of exercise instruction assignments
- Educated 15-20 undergraduate students per semester about group exercise methods such as: program design, effective warm-up and cool-downs, motivational cueing, creating a

community, safe form and technique, musicality, trends in fitness, and the evolution of group movement

- Organized and assessed all assignment and course materials into the university's online Learning Management System - Canvas

Group Exercise - August 2017- Spring 2019

- Led students through foundational group exercise techniques weekly
- Promoted positive physical activity and exercise behaviors through safe and effective experiences for 30-40 undergraduate students per semester

Indiana University School of Public Health - Bloomington, Indiana

Teaching Assistant for Human Sexuality - January 2015 – May 2015

- Facilitated group discussion for undergraduate students based on weekly lecture topics such as: gender roles, sexual identity, and sexual health

COURSES TAUGHT AS INSTRUCTOR OF RECORD

Indiana University – Bloomington Department of Applied Health Science

- H180 – Stress Prevention & Management
 - Spring 2020, 200 online undergraduate students
 - Fall 2019, 150 online undergraduate students
 - Summer 2019, 80 online undergraduate students
 - Spring 2019, 55 undergraduate students
 - Fall 2018, 10 undergraduate students
 - Summer 2018, 5 undergraduate students
 - Spring 2018, 50 undergraduate students
 - Fall 2018, 60 undergraduate students

- Spring 2017, 100 undergraduate students
- Fall 2017, 45 undergraduate students
- H306 – Men’s Health
 - Fall 2016 – 40 undergraduate students

Indiana University – Bloomington Department of Kinesiology

- I109 – Group Exercise
 - Spring 2019, 30 undergraduate students
 - Spring 2018, 60 undergraduate students
 - Fall 2017, 18 undergraduate students
 - Fall 2017, 10 undergraduate students

HEALTH AND WELLNESS INDUSTRY EXPERIENCE

Ethos Cycling, LLC. - Bloomington, Indiana

Operations Manager - November 2017 – May 2018

- Designed, promoted, and implemented special event indoor cycling classes to increase engagement with current participants and new target audiences
- Managed the responsibilities and schedules of the front desk staff, marketing interns, and cycling instructors
- Collaborated and consistently worked on projects with the company’s owner, general manager, and web design/marketing associates
- Created performance evaluation criteria and pay scales for 8 different instructors on staff

Cycling Instructor - December 2017 – March 2019

- Instructed weekly classes to motivate and inspire participants through the power of music and the transformative properties of exercise

Indiana University Bloomington Campus Recreational Sports - Bloomington, Indiana

Graduate Assistant of Group Exercise - July 2014- May 2016

- Observed, evaluated, and mentored a staff of up to 50 group exercise instructors
- Recruited, hired, and trained new group exercise instructors for a schedule that contained 80 classes per week
- Developed and implemented interactive trainings, monthly meetings, and continuing education workshops for staff
- Ensured successful presentation of fitness special events
- Served as the assistant manager of the 20,000 square foot Student Recreational Sports Center to manage the safety of approximately 4,000 participants and coaching 20 staff employees per shift

Healthy IU – Indiana University - Bloomington, Indiana

Wellness Coach - August 2014-May 2015

- Delivered behavioral based health strategies to appointed Indiana University faculty/staff clients to champion their personal wellness goals
- Utilized motivating coaching strategies based on The Transtheoretical Model

Strong Survivors – Southern Illinois University - Carbondale, Illinois

Cancer Exercise Specialist - July 2013- June 2014

- Trained cancer survivors and fighters to develop regular physical activity habits through weekly training sessions
- Learned proper techniques and strategies to promote adaptive exercise programming in a welcoming and goal-oriented environment

- Implemented progressive low-moderate intensity exercise programs specific to survivor needs utilizing the components of muscular endurance, flexibility, and balance through neuromuscular training

Southern Illinois University Carbondale Student Recreation Center - Carbondale, Illinois

Fitness and Instructional Program Instructor - July 2012- May 2014

- Instructed modern and jazz dance techniques for university students, staff, faculty, and local community members in weekly classes
- Taught fitness classes including Cycle45, Strength45, and Cardio Hip Hop for classes with up to 50 participants

Southern Illinois University Carbondale Athletics - Carbondale, Illinois

Strength and Conditioning Internship - June 2013- August 2013

- Observed Division I collegiate athletes perform structured strength and conditioning workouts
- Studied the implementation and design of the strength and conditioning department's program

INTERNATIONAL EXPERIENCE

University of Bologna - Bologna, Italy

Visiting Doctoral Student - November 2018 – January 2019

- Conducted independent research through an awarded doctoral fellowship regarding the culture of physical activity while observing community organizations and the University of Bologna's Sport Science program and Lifestyle Quality program

Torre di Babele - Rome, Italy

Student - February 2012 – May 2012

- Studied Italian language and culture in an immersion program among students from six different countries

Gherardi Family - Appiano Gentile, Italy

Au Pair - May 2011 – July 2011

- Developed second language English skills for the two children under my care through conversation and assignments
- Increased cultural competency after experiencing a new family dynamic in a foreign country

Romeing Magazine - Rome, Italy

Featured Writer - April 2011

- Published a tourism article regarding gym use in Rome that circulated in Rome, Italy to promote events, programs, and businesses for native English speaking tourists, students, and professionals

PROFESSIONAL DEVELOPMENT

Scholarship of Teaching and Learning Workshop - Indiana University – Bloomington

Attendee - November 2019

- Expanded student centered teaching philosophy through participation in university faculty development workshop, *Bandwidth Recovery: Helping Students Reclaim Cognitive Resources Lost to Poverty, Racism, and other “Differentisms”*

Preparing Future Faculty Conference - Indiana University - Bloomington

Attendee - February 2019

- Attended presentations on topics ranging from navigating the job market, issues in teaching and pedagogy, and exploring the variety of professional opportunities available in and outside of academia

American College of Sports Medicine

Member - 2017- 2019

- Student member of professional association and conference attendee

Be Golden - Bloomington, Indiana

Presenter - October 2017 and October 2018

- Showcased original presentation, *Are We Fit Sick?*, that evaluated the messaging of fitness in American society and how it impacts female health and behaviors regarding physical activity
- Served as a panelist to discuss topics regarding female entrepreneurial barriers and opportunities

Midwest Fit Fest - Columbus, Ohio – Chicago, Illinois – Dayton, Ohio – West Lafayette, Indiana

Presenter - February 2013 - February 2014 - February 2015 – February 2016

- Presented personally developed content explaining how to teach effective and entertaining exercise classes for the college student population, lecture content on properly developing the group fitness professional, and lecture content on the history and evolution of group movement
- Represented the Southern Illinois University Carbondale Student Recreation Center's Fitness Department in 2013 and 2014 and Indiana University Campus Recreational Sports in 2015 and 2016

AWARDS

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- Indiana State Department of Health – Office of Women's Health, Rape Prevention and Education Funding (July 1, 2019 – January 31, 2020, \$17,000)

- Indiana University Graduate International Fellowship (university grant to support graduate international independent study, 2018-2019, \$7,000)
- Applied Health Science Graduate Appointee Fellowship (2018-2019, \$4,000)
- Kennedy-Armbruster, C. (Principal Investigator), Middlestadt, S.E., Hollingsworth, P., Hadfield, J. (Co-Investigators). *Impact of a Group Movement Physical Activity Community Engagement Program on Health Behavior Outcomes of University Employees Within a Workplace Wellness Initiative*. (School of Public Health - Grants to Support Community-Based Research Partnerships in Indiana, 2017, \$5,000)
- Southern Illinois University Carbondale Dean's List 2012-2013 & 2013-2014

LANGUAGE SKILLS

- Proficient in speaking and reading Spanish
- Conversant in Italian