

ABSTRACT

The present research set out to determine the extent to which people perceive exercise-related content on different social media platforms (Twitter or Instagram) or from different types of users (individuals or corporations) to motivate themselves and others to exercise. Two studies employed an explanatory sequential design, in which a quantitative study was followed by a qualitative study. Participants rated motivational characteristics of 40 exercise-related social media stimuli and completed measures of their motivation to exercise, current exercise habits, and related measures. Ten people subsequently participated in one of three focus groups to discuss perceptions of exercise-related social media. Several hypotheses regarding differences in perceptions of different types of social media (Twitter vs. Instagram; individual vs. corporate) were tested. Instagram stimuli were rated as more motivational than Twitter stimuli for self-reported motivation, whereas account type was found to play a role in predicting motivation only when platform was also taken into consideration. Positive bivariate correlations were also found between the degree to which a participant was autonomously motivated to exercise and how much the Corporate stimuli motivated them to exercise. A thematic analysis of the focus groups identified three primary themes: finding enjoyment in the obligation of exercising, motivation from others, and social media's impact on perceiving others. Overall, the motivational impact of social media is influenced by which platform it is on and who is posting it.

The Perceived Motivating Power of Exercise-related Social Media Varies as a Function of Social
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Caitlyn M. Johnston

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INTRODUCTION

Social media and social networking sites are thought to be defining characteristics of the early 21st century, with 68% of females and 62% of males in the United States taking advantage of this technology as of 2015 (Pew Research Center, 2015). Social media use is especially popular among young adults, with 89% of 18-29 year olds regularly having visited social media sites, and 67% of those people having used mobile phones to do so (Pew Research Center, 2014). Due to its popularity, social media has played an extensive role in shaping the way individuals interact with exercise-related content (Vaterlaus, Patten, Roche, & Young, 2014), but there has been limited research exploring how such content might actually motivate individuals to engage in exercise. The present research explored the extent to which people perceive exercise-related content based on different social media platforms, specifically Instagram (visual platform) and Twitter (text-based platform), and the type of user, Individual and Corporate accounts, to motivate themselves and others to exercise.

Social Media

For the purposes of this research, I define “social media” as the collection of online applications that allow individuals, communities, and companies, the ability to instantly connect by sharing and exchanging text, images, and video. The shared content can be expressed through text-based or image-based platforms that allow for active engagement by the user. Social media as a whole can be utilized for a range of purposes, such as sharing, advertising, and even bragging, all of which can then be interpreted through various lenses. Overall, social media has

the ability to influence individuals by producing engaging content through the diverse platform styles readily available to users.

Recently, platforms such as Twitter, Facebook, Snapchat, Tumblr, and Instagram have skyrocketed in popularity and, as a result, social media has changed the way individuals and companies connect to their respective audiences by entering their everyday lives. Whenever an individual logs into their account and scrolls through their newsfeed, they create an opportunity for companies to reach out to them as potential consumers. They no longer have to rely on paper advertisements, billboards, and TV commercials to get in front of the customer. These interactive social media platforms have the potential to influence our everyday decisions by allowing users to both view and participate in online conversations from anywhere in the world, resulting in instantaneous engagement between two or more parties. Athletic companies often advertise on these same platforms where everyday individuals contribute to their large number of followers. As of April 4th, 2017 the well-known athletic brand Nike held over 70.6 million followers, while professional basketball player LeBron James had over 29.2 million followers. Although not every athletic-related account maintains following numbers as high as the ones previously mentioned, there are a plethora of smaller accounts that still boast a substantial following and promote an active and fit lifestyle, such as Under Armor with 3.1 million followers as of April 4th, 2017. As businesses such as these strategize how best to target their audiences via the creation and promotion of engaging digital content and campaigns, they will continue to drive traffic and impact follower counts.

The fitness/athletic market is not the only sector that has caught onto the social media trend. In 2010, Pepsi opted out of their annual Super Bowl advertisement after 23 consecutive years and instead pursued a social media campaign called The Pepsi Refresh Project (Qualman,

2010), which awarded \$20 million in grants to individuals and companies that had a beneficial idea that would refresh the local community, state, and/or nation. Likewise, Ford Motorcars recently redistributed 25% of their marketing resources toward social media and digital purposes. Social media has taken on a new meaning and is more than just a convenient way for people to communicate, as it has changed the way that many companies function and implement their marketing/social media campaigns. One result of this change is that companies are now hiring individuals to expand their social media presence. As of May 2, 2017, the online job search engine “indeed.com,” produced nearly 60,000 positions for the search “Social Media.” As the number of available social media related careers expand, the demands and expectations will also support growth, potentially resulting in social media having an even greater role in our everyday lives.

Social Media Content. The range of content on social media is highly diverse, with personal posts, conversations amongst friends, advertisements, current event stories, giveaways, and promotional events as examples for the type of content that individual users follow and post about. As a recently added feature, platforms such as Instagram, Facebook, and Twitter now provide their users with suggested content and other users to follow based on their current behavior and viewing habits. These platforms are able to communicate suggestions to their users as to what they think an individual would want to see again predicated on previously viewed and liked content, in addition to analyzing the accounts that they are already following and engaging with.

Whether viewing previously followed content or newly suggested accounts, the act of simply exposing yourself to a stimulus, in this case social media content, can impact one’s attitude and decision process (Bargh, 2001; Lee, 2001; Crano & Prislin, 2006). At its most

fundamental level, social media allows individuals the opportunity to develop countless opinions and evaluations towards every post that they encounter as an attitude is recognized as “the evaluative judgments that integrate and summarize cognitive/affective reactions” (Crano & Prislin, 2006). Social media sites are able to provide their users with a near endless stream of content, all of which they can judge and develop attitudes and opinions towards as they scroll through the platforms.

Persuasion. Every day we make decisions that impact our lives. Some decisions may be predetermined, while others may require more thought and outside help or encouragement in order to be accomplished. Social media can be a very effective tool for persuasion, the altering or changing of an individual’s mental state or their initial attitude toward an object (O’keefe, 2015). When an individual is actively using social media, they are frequently exposing themselves to the opinions of those they follow, and for some, viewing content posted by a friend or an influential figure could easily influence their own opinion. Depending on a user’s behavior and actions prior to signing into their social media account, a person’s current state of mind can influence how social media content is perceived.

Likes. Through expressing their like for a post, a user is able to show their positive support for that account and that it persuaded them in an affirmative and favorable manner. The process of reading a follower’s status and posting pictures that will attract the most “likes,” has turned social media into more than just the simple act of checking and posting, with active users spending an average of 118 minutes a day on social media (Statista, 2016).

Sherman and colleagues (2016) demonstrated that the number of previous likes and endorsements by one’s peers has a positive influence on the way an individual interprets a social media post. The more likes and comments that a user receives on their post, the greater their self-

esteem becomes, although this act of wanting to obtain more likes has the tendency to lead individuals on a search for continuous validation. Studies have also shown that people are drawn more towards higher-quality images and that the artistic value of the photo is important when determining their personal photographic preference (Tinio & Leder, 2009). In addition, characteristics such as image clarity, brightness, and pixel count could also impact an individual's social media interpretation and potentially lead to an increase in "likes" (Tinio & Leder, 2009). Once a single post receives a certain number of likes, there can sometimes be an unspoken expectation that future posts should receive an equal or greater number of likes. When this feat is not consistently met, it is possible that negative effects may result for the individual or company that posted the content.

Interpreting Social Media. Beyond vying for likes, understanding the interpretation process of exercise-related posts provides insight into the developmental process of a post. Through a seven-point framework, researchers have identified essential building blocks that are naturally embedded into social media platforms, and that can be further broken down in order to analyze social media activity (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). The seven constructs are: identity, sharing, relationships, groups, reputation, presence, and conversation. They independently allow us to further study a specific niche associated with the social media user experience and what its implications on individuals and organizations are. It is possible that all or none of the constructs may be present in a post, as they are not mutually exclusive (Kietzmann et al., 2011). Through both independent and interrelated analyses, these elements have the ability to assist companies in supervising, interpreting, and reacting to their unique social media traffic. Identity and sharing are two blocks especially relevant to the present research. Identity refers to the amount of information that a user chooses to disclose, which can

range from something as simple as name and location to more detailed information such as workout routine and body dimensions. Sharing refers to the amount of exchange that occurs amongst users as they both receive and disseminate information. By utilizing identity as a social media tool, businesses are afforded a unique and more personalized means of relationship building. Social media users often gravitate towards mainstream tools that can facilitate fast, easy, and mobile networking. Ultimately, the destiny of a social media platform is contingent on its users.

Text-Based Communication. Social media has quickly become a powerful tool for communication in comparison to the overall evolution of written language, from hieroglyphics and cuneiform to modern day computer language including social media posts. It has undeniably impacted how we communicate today by transforming our vocabulary into a new “cyber-language” (i.e., ttyl, selfie, lol). Along with the development of online media and text-based platforms, account holders have used social media to share their personal thoughts, discuss current events, express their opinion, and to converse over daily occurrences in their own lives. Recognizing what people hope to extrapolate from the social media platforms they frequent can serve as a barometer for allowing outside sources to manage these platforms. An example of this took place in the public-health community where researchers used tweets (via Twitter) generated by 1.6 million everyday users to find natural causes for diseases along with potential cures (Dredze, 2012). Through a three-part model, which analyzed each tweet by its identified symptoms, general words, and applied treatment, a total of 15 new ailments were recognized. If Twitter alone, which utilizes the power of concise written language, can assist in the discovery making process within the public health field, then opportunity may exist for findings to shed light in the exercise realm.

Twitter. Twitter is an online social media-networking site that allows its users to read and share 140-character messages. According to Twitter.com, as of June 30, 2016, the platform currently has over 313 million monthly active users. The messages that people post are referred to as “tweets”, and although it is used as a noun, it can also be modified to take the form of a verb in conversation if someone were to reference the fact that another user had “tweeted” them. Once active on Twitter, a user has the opportunity to follow other active members and then receive all of the tweets that they share by seeing them on their personal newsfeed. The newsfeed shows a user what their followers had most recently tweeted or commented on. In addition, when a user posts their own tweet(s), the users name along with a small square box containing the users profile picture will appear in the top left-hand corner of every tweet, as exemplified in *Figure 1*. This provides users the opportunity to see and read who posted a tweet, as their “name” may be displayed as a screen name or pseudonym, considering many individuals may not use their actual name on social media. As a text-based platform, it focuses on the power of written language to convey its message.



Figure 1. Twitter post example

Image-Based Communication. While text is able to convey a concrete message, the effectiveness of using images to convey ideas is reflected in the common English idiom “A picture is worth a thousand words.” Images can be used as a powerful tool for both communicating ideas and explicit learning. For example, when students are given the option to either exclusively listen to a teacher recite a book or to simultaneously listen and draw, students that chose to draw displayed a stronger visible record of the learned content (McConnell, 1993; Hibbing & Rankin-Erickson, 2003), resulting in comprehension improvement. Learning improvements were also seen when an image was associated with either written or spoken text, ultimately increasing understanding, as found in the case of health education information (Houts, Doak, Doak, & Loscalzo, 2006). Comprehension is increased even more for individuals with low literacy scores because they are able to extract numerous pieces of information from the image that they would not have been able to interpret through the text. Although this study carefully examined health education, the results could easily be applied to the way individuals and corporations market themselves, as it could facilitate the way in which someone interprets an individual’s self-presentation on social media, and especially on a platform such as Instagram where its primary focus is designed around photos.

Instagram. Instagram is a social media-networking site, with over 500 million active monthly members, that allows its users to share photos and videos, which are frequently accompanied by a caption, although captions are not required in order to understand the image, as seen in *Figure 2* (Instagram.com, 2017). Instagram encourages its users to follow other users, while simultaneously increasing their own following by leaving comments below posts and tagging friends in pictures, ultimately broadening a content’s audience.

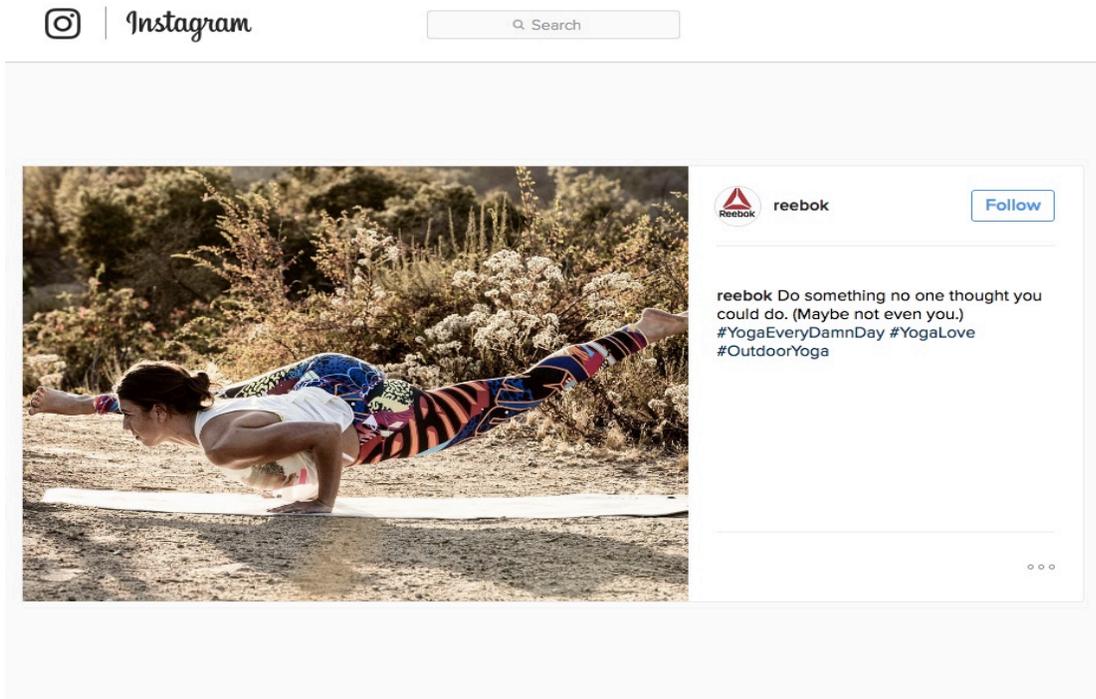


Figure 2. Instagram post example

Within a matter of seconds, people across the world can all be viewing the same post, which can stimulate a conversation through followers asking questions or leaving comments, such as compliments, on the post. Users can also view the previous posts of specific users they are interested in by clicking on the account name of the specified user and viewing their previously uploaded posts/pictures. Furthermore, members can choose to include a geotag with their post, which shares where a picture was taken. Instagram also has additional creative tools, which can assist users in facilitating the creation of captivating images. With over 20 built-in filters and photo editing tools such as brightness, contrast, and shadowing, Instagram has provided its user the ability to customize their image to their liking before posting it for their followers.

Instagram Categories. Hu, Manikonda, and Kambhampati (2014) identified eight categories of photos posted on Instagram: friends, food, gadget, captioned photo, pet, activity, selfie, and fashion. Using the Scale Invariant Feature Transform algorithm, they were able to examine and determine specific features within a sample of 200 unique photos, which created 15 computer-generated categories. Through an in-depth discussion with two research coders, the final eight categories were established. Within these categories, exercise-related content typically falls into both the selfie and activity category, representing two of the three largest categories. A selfie is considered a self-portrait or a photo where at least one human with facial representation is presented in the image. An activity related image is a picture often containing either indoor or outdoor content, and depicts action or entertainment movements and primarily occurs in a specific location. In addition to the eight identified photo categories, the study also produced a list of five types of users, which was determined by the proportion of pictures a user posted from the eight content categories. Users who posted an excess of exercise-related images would be

categorized in either the “selfie-lover” or “common user” group. The selfie-lover group would consist of individuals who post primarily selfies, while the “common user” group would consist of individuals posting a balance of images from the previously mentioned eight categories. Other categories of Instagram users include “captioned users”, who post pictures incorporating text or quotes in most of their images and “friend users”, who post an even distribution of images from the selfie and friend category. Although these user categories may not directly be associated with exercise-related topics, this doesn’t mean that the users who fall into these categories do not post exercise-related content. The categories are not mutually exclusive and it is possible for any content category to be posted by an individual from any user category.

Social Media and Exercise

From Nike ads and Planet Fitness promotions to gym selfies and the posting of athletic accomplishments, social media has been generating exercise-related content since its inception through individual and corporate accounts. Hashtag trends such as “#transformationtuesday” are geared towards showing off an extreme amount of weight loss. Hashtags allow users the ability to tag a photo, ultimately facilitating other users the ability to find their picture more easily.

As users on social media engage with their platforms, they are often exposing themselves to a range of content, which can influence the decisions that they make outside of their social media activity. Exploring the factors that contribute to the perception of and relationship between social media engagement, diet, and exercise in young adults, researchers conducted an in-depth qualitative analysis to assess such aspects (Vaterlaus et al., 2014). The study allowed the researchers to identify three relationship themes from their study that highlighted the significance that social media plays in the lives of young adults and how they exercise. These themes were:

- (1) social media promotes and hinders exercise

(2) social media plays a role in how the individual perceives and makes food

(3) social media is regularly used to take, post, and send workout images.

Comprehensively, these themes highlight numerous compelling reasons to partake in social media by promoting and maintaining a healthy lifestyle, while the first theme especially represents the many diverse views held on social media. Participants in the study explained how they may end up not going to the gym because they are on a social media site and just feeling lazy, or they may be on it and see someone really fit or a cool exercise they want to try, which spurs them to go to the gym. Ultimately, either of these situations are plausible and may occur, resulting in both the promotion and hindrance of exercise.

Under the social media microscope, exercise-related content plays an important role in shaping the workouts and health patterns of young adults through their decision influencing power. If a specific fitness trend is consistently being presented on social media, then young adults are more likely to participate and perpetuate the trend (Vaterlaus et al., 2014). One popular example that has been growing out of major cities is SoulCycle, a 45-minute high intensity indoor cycling class (SoulCycle, 2017). From attending class and purchasing Soul Cycle gear/attire, to posting pictures after class and on the bike, the use of “#soulcycle” has been applied to over 218,900 Instagram posts. Growing trends and movements such as SoulCycle can be beneficial because they promote exercise in a fun and social environment, but due to the financial obligation that is associated with the fitness class atmosphere and the need for studio space, it is unfortunately not easily accessible for the masses.

Corporate and Individual Distinction. User accounts on social media can be divided into two general categories: individual or corporate. Corporate accounts are those that are materialized by a corporate entity and a group of people who act as a single unit. Examples of

exercise-related corporate accounts would include companies such as Nike, Adidas, Gold's Gym, Under Armor, MBA, and specific sporting team accounts. Their purpose for being present on a social media platform is often to market their company and promote their brand(s) via free online advertising. Corporations marketing through social media accounts can include current deals that they are promoting to highlight their newest line of merchandise. Considering their purpose and these various elements, corporate posts, which have the financial support for higher quality images, have the potential to be more influential to a follower due to their available resources, such as hiring celebrities for photo-shoots, professionally editing their pictures, and using professional photographers.

Differing from corporations, personal or individual posts are generated by everyday users. These individual accounts are created by a single user, often with the intention of joining the platform with a social purpose in mind, such as staying connected to friends and family, highlighting or sharing current events in their own life, and potentially networking with coworkers (Johnson & Van Der Heide, 2015). In addition, these individual accounts are typically the ones that follow the corporate accounts and create their high number of followers, as the company's consumer.

Corporate Posts. When a company creates potential posting content, it is often in their best interest to only post images that are of the highest quality. It is important for companies to ensure that only the best material is published, while also considering the existing cost-benefit ratio (Tinio & Leder, 2009). According to Kirtis and Harahan (2011), social media has become the preferred marketing strategy for both small and large firms due to its cost reducing benefits, especially for businesses that have felt economic pressures following the recent financial crisis. Before a corporation posts any content, it is to their best interest to carefully consider any

potential financial, marketing, and/or specific platform related issue that may present itself.

Accordingly, a corporate post customarily has a goal or intention behind it, which is to sell their followers a product, while simultaneously expanding their market.

Individual Posts. Across social media, individual users are responsible for generating their own original content, which results in their unique account. The content that an individual broadcasts incorporates self-relevant processes such as self-presentation and self-monitoring, both of which concern how a person displays themselves to others. Self-monitoring refers to the way in which an individual controls their displayed verbal and non-verbal behavior (Snyder, 1979), while self-presentation focuses on how an individual presents their self, according to those around them. People often adjust their self-presentation, depending on their audience, in order to express a version of themselves that best fits the present environment (Paulhus & Trapnell, 2008). These processes are essential characteristics to an individual's social media profile and daily posts, but especially to their profile picture. A profile picture is the primary image that appears alongside a user's screen name and is the most important means of self-presentation on social media, as it is the first image that someone sees (Buffardi & Campbell, 2008; Siibak, 2009; Strano, 2008; An, Ho, Lim, Goh, Lee, & Chua, 2011). Self-presentation consists of the actions and decisions that an individual makes when displaying themselves to others (Ong et al., 2011) and can be applied to both a physical and digital presence. As such, every choice that a user makes when deciding what to post and how to post influences their self-presentation and reflects back on how they monitor their own image for output to others. Sometimes a user's post or profile picture may receive a positive reaction from their followers, while other times the same, or potentially different, content may not be as well received by

others, which could potentially influence how the user continues to engage with the platform after posting and what they decide to post next.

Individual Posts as Perceived by Others. Social media may not always have a beneficial outcome on exercise-related behavior and perceptions. In a previously conducted focus group (Vaterlaus et al., 2014), participants described the results of individuals who regularly post on social media in order to promote their workout or show off their body, and indicated that their behavior had a tendency to come across as “digital showboating or bragging” to outside viewers. This would exemplify how an individual post can receive a negative reaction from its viewers, as previously mentioned. In contrast, the same participants collectively agreed that updates relating to exercise and goals were welcomed and even embraced for significant accomplishments. Participants enjoyed seeing substantial progress being made, especially when it was by someone they knew. They believed that such posts were considered inspirational when they depicted an individual who had just lost a large amount of weight. Thus, the ability to witness another person’s transformation depicting the results of hard work and effort may be considered more motivating on an individual basis. Having the opportunity to see the results come to fruition on another person can show others that it is possible and might even give some the extra encouragement that they may need.

Activity Level. When an individual reports or discusses their physical activity, they should take note of the type and amount of exercise that they are performing because social media could be influencing how they work out and hope to shape their body. A recent study investigated how Internet use and various types of digital use, or screen-based media such as a phone, laptop or TV, are associated with three types of physical activities (Zach & Lissitsa, 2016), which include strenuous exercise, physical exercise to strengthen muscles, and moderate

physical activity. Each of these levels ultimately achieves a different body type, depending on the frequency in which it is performed, as performing strengthening activities often increases muscle size, while cardio exercises are known for toning one's body. After examining the correlation between digital usage and engagement in exercise, results indicated that digital usage for social media purposes positively correlated with strenuous and muscle-strengthening exercise. Through social media individuals are able to discover workout ideas and specific plans that they might not have obtained without browsing through such platforms. The extensive assortment of social media accounts that endorse different kinds of exercise, such as weight training, cardio, and general activities, correlate with different engagement levels. While content is an important element in encouraging individuals, equally important are internal factors when motivating people to exercise.

Motivation

Motivation is often recognized as an impulse or drive that spurs a specific behavior, and often helps qualify its effect on an action. It is often the impetus that causes people to be “moved to do something” or to become “energized or activated toward an end” (Ryan & Deci, 2000). In hopes to further understand why people do things, researchers have identified a range of motivational styles, falling under the Self-Determination Theory (SDT; Deci & Ryan, 1985). It is a theoretical framework used to explain motivational factors and the various types based on a given task and if it was essentially performed by one's self or others as is displayed in *Figure 3*. At its core, SDT distinguishes between amotivation, extrinsic, and intrinsic motivation, which is thought of as being on a continuum, where amotivation is the least autonomous, intrinsic motivation is the most autonomous and extrinsic motivation is in the middle.

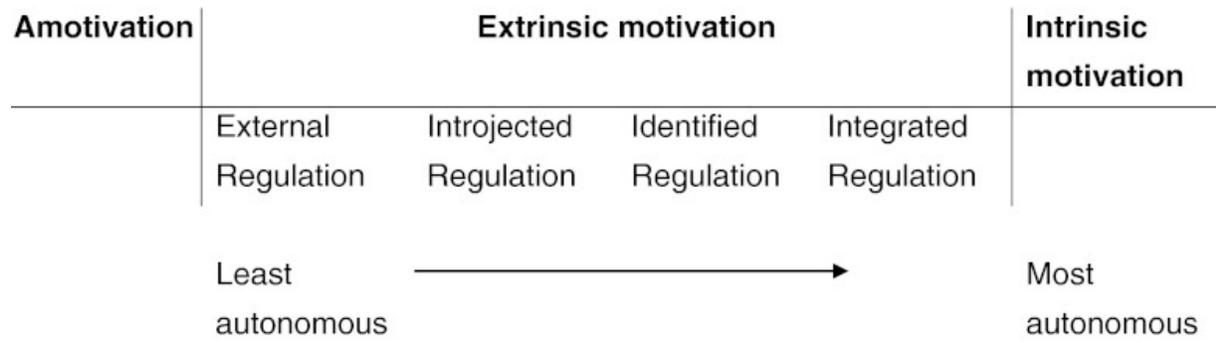


Figure 3. Self-Determination Theory continuum

Extrinsic Motivation. Extrinsic motivation is propelled and driven by outward pursuits and is often completed with an external purpose in mind (Sebire, Standage, & Vansteenkiste, 2009). It pushes individuals to follow through with a task in order to achieve an end goal that is associated with a potential prize or needed accomplishment. Within the context of exercising, an example of extrinsic motivation would be if a male were to work out and reduce his body fat percentage for the sole purpose of wanting to attract female attention. Importantly, SDT suggests that extrinsic motivation can differ in the way that it is regulated, or governed and enacted (Ryan & Deci, 2000). The Organismic Integration Theory (OIT) is a subtheory within SDT that identifies four types of extrinsic motivation regulation: external, introjected, identified, and integrated, arranged in order from most to least externally regulated (Deci & Ryan, 1985). Through SDT, motivation is placed on a scale and broken down into three main parts, where extrinsic motivation is placed in the middle, which is further divided into its four identified types. These four forms of extrinsic motivation were identified in order to help “contextualize factors that either promote or hinder internalization and integration of the regulation for these behaviors (Ryan & Deci, 2000).” The process of internalization explains the comprehension and understanding of a presented regulation, on a scale from completely not willing to a complete personal commitment. The stronger one’s personal commitment is, the greater the chance that they will experience a sense of personal fulfillment and quality of engagement. Integration is then the personal process where an individual takes the presented regulation and turns it into a personal action.

External Regulation. As the least autonomous form of extrinsic motivation, and the only one that is also recognized by operant psychologists, external regulation contrasts the most with intrinsic motivation. It consists of behaviors and actions that are most often performed in order to

obtain an external reward or prize. An example would be if a person enters a raffle drawing because they want to be awarded the monetary prize associated with winning.

Introjected Regulation. The next form of extrinsic motivation is introjected regulation, which explains behavior that is executed with a feeling of pressure or guilt in order to complete the task. It is also experienced in order for the individual not to have to undergo feelings of guilt or worry if they do not complete the given action. For example, if an individual feels the pressure of having to go into work early every day in order to impress their new boss, then they would be displaying signs of introjected regulation since they are experiencing a sense of guilt and anxiety if they do not arrive early.

Identified Regulation. The third form of extrinsic motivation is identified regulation. Through the process of identification, the individual is able to acknowledge the personal benefits of performing the given behavior by following through with it. An example of identified regulation would be a student in elementary school studying for a math test or learning to read and write. These skills are all behaviors that are personalized to the individual and carry greater life significance.

Integrated Regulation. The final form of extrinsic motivation is integrated regulation which takes place “when identified regulations have been fully assimilated to the self. This occurs through self-examination and bringing new regulations into congruence with one’s other values and needs (Ryan & Deci, 2000).” An exercise-related example would be if an individual commits themselves to going to the gym weekly in order to lose weight because they believe that it aligns with their own beliefs and what is best for them, even if they don’t truly enjoy the act of exercise. They participate in the routine because they feel it is right and needed for them in order to reach their ultimate goal.

Intrinsic Motivation. Intrinsic motivation originates from within the individual and is associated with the drive to accomplish a task because of the enjoyment and satisfaction found within the particular activity, rather than an outside force (Hassandra, Goudas, & Chroni, 2003). Allowing one's self to enjoy the mental and physical challenges associated with exercise and playing sports would be an example of intrinsic motivation. When an individual is intrinsically motivated they continue to pursue a task or activity for the personal pleasure that they are able to experience from it and not for any external reward or pressure. This intrinsic motivation that they experience can be seen as existing within an individual and in response to specific activities, or it can be studied as occurring between the individual and given interest.

A study in Greece explored the intrinsic motivation of a physical education class, where 254 students, aged 12-15 were enrolled (Hassandra et al., 2003). They each took part in a questionnaire regarding their motivation to participate in class and 16 students were selected to participate in an in-depth qualitative interview based on their responses. Researchers identified four factors believed to influence intrinsic motivation in the physical education setting: perceived competence, perceived autonomy, achievement goal orientation, and perceived usefulness of the physical education class (Hassandra, et al., 2003). Students identified a variety of reasons for participating in PE, including: schoolmates, social-environmental factors, physical appearance, physical education, perceived competence, and the schools' athletic facility. These results support Vallerand's (1997) model of motivation, which suggests that these varying motivational types are swayed by a handful of external social factors. Essentially, individuals, including the children participating in physical education classes, have different external reasons for doing something and these reasons may feel obligatory, be performed in order to satisfy someone else, or simply for their own enjoyment.

Exercise and Motivation. An individual's motivation to exercise can be influenced by what they see in the news and on social media, or by their peers as in the previous example. When an individual compares themselves to someone that they see as better than they or potentially has something that they cannot easily obtain, then they are making an upward social comparison that has the potential to negatively impact a person's self-esteem (Taylor & Lobel, 1989). In contrast, when individuals compare themselves to someone who is less fortunate than they or possesses traits that are considered undesirable, they are making a downward social comparison that can result in the boosting or inflation of one's self-esteem and confidence (Collins, 1996). According to Festinger's (1954) theory of social comparison, people should have their own reliable self-view of perception, and that individuals often prefer to assess themselves employing objective standards, but when this neutral material is not accessible, they frequently resort to comparing themselves to others. Inevitably, with the increased social media usage and countless posts displaying images of people exercising, people now have more opportunities than ever before to make upward or downward social comparisons.

Gender is also a factor that could impact how an individual allows exercise-related content to impact their self-esteem. Research suggests that only females associate the idea of self-esteem with body dissatisfaction and wanting to appear thinner (Furnham, Badmin, & Sneade, 2002). This takes place when the female or any individual identifies with the other person or image in front of them and is able to see themselves as possessing similar qualities, or in the case of exercise, acquiring or recognizing the body that they hope to achieve (Wilcox & Laird, 2000). All of these viewing styles represent different ways in which individuals could view exercise-related stimuli and have unique reactions or thoughts, based on how they personally process and internalize the material.

Self-Identity and Exercise. Motivation to exercise is often influenced by one's identity. Athletic identity can be expressed as the extent to which an individual engages in competitive athletic sports and identifies him/herself as an athlete, while exercise identity is rooted in an individuals' self-perception of their exercise behavior and can change with time (Reifsteck, Gill, & Labban, 2016). Research examining the physical activity levels of former college athletes found that exercise and athletic identity, autonomously predict physical activity, but when analyzed side by side, exercise identity was a stronger predictor compared to athletic identity (Reifsteck, Gill, & Labban, 2016). This is because maintaining an exercise identity is considered easier and more general than compared to an athletic identity, which is associated with participation in highly competitive sport training.

For many college athletes, maintaining an athletic identity throughout their years of competition is essential as an athlete, but following graduation and retirement from their sport, this identity is at risk in addition to possible health concerns if exercise is completely abandoned. Upholding an exercise routine following the completion of an athletic career can be difficult for some if they lack an exercise identity, but that does not mean that this behavior cannot change or is the only factor influencing the behavior. Although these identities were significantly related to physical activity, so were the motivational reasons behind the exercise. As predicted, amotivation and external regulation were negatively related to physical activity, while intrinsic, integrated, identified, and introjected regulation were all positively related. Exercise and physical activity alone are often not considered a hobby done for enjoyment, but rather the results that come from exercising parallels other personal goals that they may have, and allowing the motivation to come from an outside source.

Overview of the Present Research

As exemplified through the previous literature, social media currently plays a large role in shaping people's decision-making processes, which may have the potential to impact how people use it as a motivational tool for exercise. Within social media platforms like Instagram and Twitter there are different account types, such as Individual and Corporate, each possessing their own possible motivational qualities. Instagram focuses on the power of an image to communicate its users' message, while Twitter relies on the concise nature of its 140-character text-based "tweet" to convey its users' thoughts and ideas. Maximizing on strengths such as brand recognition and financial resources that can supply advantages, such as high-quality edited photos and sponsorships, companies possess their own benefits. In comparison, individual accounts are able to self-select their content, which has the opportunity to tell a story, show off significant weight loss results or flaunt personal assets through a gym selfie or hashtag application. These qualities found in Individual accounts have the potential to ultimately be more personal and authentic. The purpose of the present research was to determine, through a two-part study, how social media could be used to motivate people to exercise. The present research operated under an explanatory sequential mixed method research design, where qualitative data (Study 2) was collected after the quantitative data (Study 1) in order to facilitate and inform the interview process. Hypotheses and materials were pre-registered prior to data collection at <https://osf.io/gahmw/>. The final data set and materials are available at <https://osf.io/7e6k3/>.

STUDY 1

The purpose of Study 1 was to determine if viewing text-based (Twitter) or image-based (Instagram) and individual or corporate posted exercise-related social media was associated with how much the participant felt motivated to exercise by the stimuli, which is referred to as different levels of self-reported motivation to exercise. The study also investigated if these effects were moderated by self-reported exercise motivation styles (intrinsic/extrinsic exercise motivation).

Hypotheses

Main Effects

- 1) Self-reported motivation to exercise will differ between corporate stimuli and individual stimuli. (non-directional hypothesis)

No direction is hypothesized for account type, as the previous literature supports the possibility that either corporate or individual accounts could be more motivating. The financial backing, support, and familiarity associated with corporate accounts could result in more motivation or the authenticity and ability to relate to another person as an individual account could generate more motivation.

- 2) Self-reported motivation to exercise will be higher for image-based (Instagram) stimuli compared to text-based (Twitter) stimuli.

It is predicted that Instagram will be more motivating than Twitter because Twitter limits the number of characters that can be included in a tweet, whereas content on Instagram supports

visual stimulation and often may appear as more engaging. With an image, the participant does not have to imagine what a user is describing, as it is already clearly displayed through the picture or post.

- 3) Intrinsic/extrinsic exercise motivation will be significantly associated with how much the participant felt motivated to exercise across all stimuli. (non-directional hypothesis)

A non-directional association is predicted as either intrinsically or extrinsically motivated individuals could report greater overall exercise motivation. People who are intrinsically motivated to exercise may already have a natural interest in exercising and the content, while extrinsically motivated individuals are motivated by external factors, which is accounted for by the stimuli.

Two-Way Interactions

- 4) Self-reported motivation to exercise will be higher for image-based (Instagram) stimuli compared to text-based (Twitter) stimuli and this effect will be larger for extrinsically motivated individuals than intrinsically motivated individuals.

Since extrinsically motivated individuals are more motivated by external factors than intrinsic individuals, the stimulus is predicted to act as an external factor and ultimately spur more motivation from them than the intrinsic individuals.

- 5) Self-reported motivation to exercise will differ between corporate stimuli and individual stimuli and this effect will be moderated by intrinsic/extrinsic motivation.

Intrinsic/extrinsic motivation is also anticipated to moderate the effect of account type on self-motivation (hypothesis one), as intrinsically and extrinsically individuals may be influenced by exercise-related social media in different ways.

Methods

Participants

A total of 130 females and 100 males were recruited to participate in Study 1. The majority of female participants were recruited through the Mount Holyoke College Psychology Department research participation pool (SONA). SONA allows students enrolled in psychology classes to participate in psychological research while receiving credit as a form of compensation. Additional female participants were also recruited through email blasts to campus clubs/organizations and sharing via social media along with the male participants. Male participants were recruited via social media and email blasts. All participants had the opportunity to enter a drawing for one of ten \$25 Amazon.com gift cards.

Procedure

Participants completed an online questionnaire through SurveyMonkey at a time and place of their choosing. Before starting the survey, participants viewed an information page describing their rights as a participant and indicated their informed consent before beginning the survey. All assessments used in Study 1 are provided in Appendix A.

Materials

Exercise Motivation. Participants first completed the Behavioral Regulation in Exercise Questionnaire-3 (BREQ-3; Markland & Tobin, 2004; Wilson, Rodgers, Loitz, and Scime, 2006) in order to assess their exercise motivation style. The BREQ-3 consists of twenty-four items answered on a 5-point scale (0= *not true for me*; 4= *very true for me*) and produces overall scores for six types of exercise motivation: intrinsic regulation ($M = 2.53$, $SD = 1.03$, $\alpha = 0.92$),

integrated regulation ($M = 2.11$, $SD = 1.17$, $\alpha = 0.89$), identified regulation ($M = 2.93$, $SD = .83$, $\alpha = 0.78$), introjected regulation ($M = 2.02$, $SD = 1.02$, $\alpha = 0.84$), external regulation ($M = 0.90$, $SD = 0.85$, $\alpha = 0.83$), and amotivation ($M = 0.32$, $SD = 0.58$, $\alpha = 0.80$). A relative autonomy index (RAI) score was computed as an indicator of the general degree to which a participant is autonomously (intrinsically) motivated to exercise. The RAI ($M = 9.97$, $SD = 7.02$) was computed by adding weighted sub-scale scores together, with higher scores indicating greater intrinsic motivation. Specific procedures for scoring and calculating the RAI are provided in Appendix A.

Social Media Stimuli. All participants viewed a series of 40 social media stimuli in random order. There was a total of 20 image (Instagram) and 20 text (Twitter) posts. Within the image and text categories, there were 10 posts from individuals and 10 posts from corporations. For each stimulus, participants indicated their agreement or disagreement with three statements:

- 1) This social media post makes me want to exercise.
- 2) This social media post would make other people want to exercise.
- 3) This social media post was posted for extrinsic reasons.

Participants rated their agreement or disagreement on a 6-point scale (1= *strongly disagree*; 6= *strongly agree*). By using a 6-point scale, the possibility for a neutral result was eliminated, ultimately forcing participants to indicate either agreement or disagreement. In order to properly respond to the third question, participants were provided with the following explanation of what an extrinsic reason is before they began the stimuli-rating portion of the study:

On the following pages, you will be asked to rate some social media posts. One of the questions will ask you if you believe the post was posted for extrinsic reasons. Examples of extrinsic reasons include external rewards such as money, fame, or praise. People may

make a social media post for extrinsic reasons such as these, or for another reason external to the person making the post. Once you have this explanation of extrinsic reasons in mind, please continue to the next page.

Composite ratings for each statement were computed for each of the 4 types of stimuli by averaging the ratings together within each type. Examples of the stimuli are displayed in *Figures 4, 5, 6, and 7*.

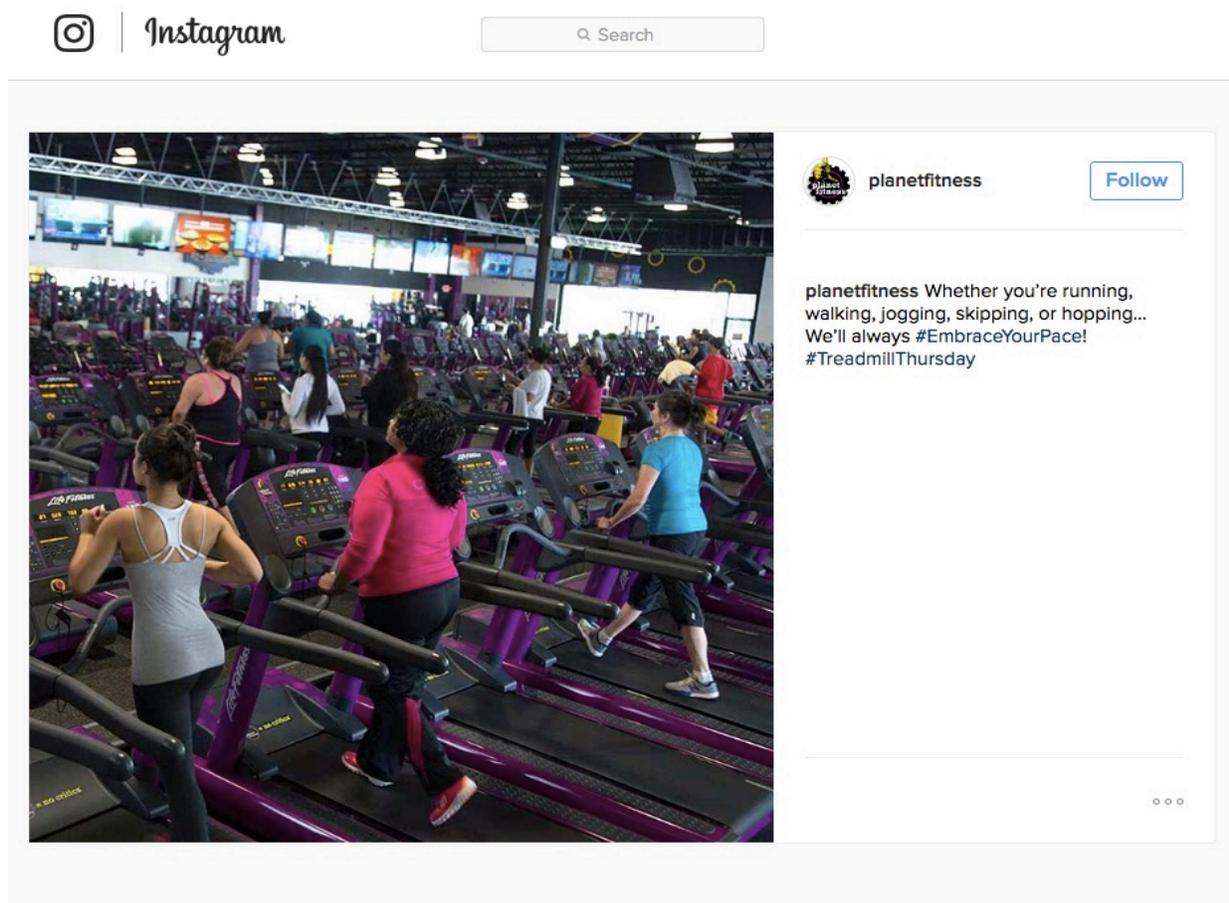


Figure 4. Example of an image-based corporate stimulus.



araeverdugo

Follow

araeverdugo Sometimes on Monday you have to look at your progress to motivate yourself. Maxed out at 325 lbs on hip thrusters last week! #motivationmonday #fitness #journeytraining #hipthrust #justdoit #chickswholift



Figure 5. Example of an image-based individual stimulus.

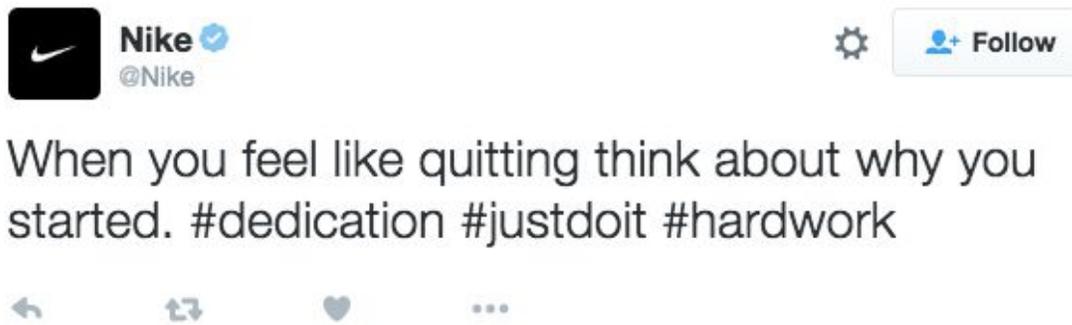


Figure 6. Example of a text-based corporate stimulus.



Figure 7. Example of a text-based individual stimulus.

Stimuli Development. The 40 stimuli were created using pre-existing public posts on Instagram and Twitter, which were modified to improve consistency across stimuli. Posting location, capability to follow the presented account, number of previous likes/shares/comments, and the ability to leave a comment, were removed from the original post in order to have a clean presentation and to standardize these characteristics across stimuli. The content of the stimuli was related to physical fitness and displayed various forms of people exercising, training, participating in these practices, or the results of such.

Half of the stimuli were posts by a corporation and the remaining half were posts by an individual. For a post to be categorized as a corporation, it had to be a well-known and recognized company that is heavily involved in the fitness/exercise world and provides a service or product for their consumer. For a stimulus to be classified as an individual post, it had to be derived from an account that reflects an average, everyday individual who does not have a “verified badge”, or a blue check symbol, on their profile page indicating public figure status. In addition, both the corporate and individual categories were divided into half text (tweets) and half image (Instagram) posts.

Thus, 10 stimuli presented texts (tweets) posted by an individual, 10 stimuli were texts (tweets) posted by a corporation, 10 stimuli displayed an image (Instagram) posted by an individual, and 10 stimuli exhibited an image (Instagram) posted by a corporation.

Individual Exercise Activity. After completing the stimuli ratings, the Leisure Time Exercise Questionnaire (LTEQ; Godin & Shephard, 1997) was used to determine individuals’ exercise behavior. This questionnaire consisted of one primary question and a second subordinate question which asked how often the participant engages in regular activity long enough to work up a sweat. The question was worded as follows: “During a typical 7-Day period

(a week), how many times on the average do you do the following kinds of exercise for more than 15 minutes during your free time?" The exercise behavior score was calculated by creating weighted scores for frequency of strenuous ($\times 9$), moderate ($\times 5$), and mild ($\times 3$) activity the individual engages in per week; the participant wrote an appropriate number next to the three types of activity levels. On average participants indicated that they perform strenuous exercise 2.79 times per week ($SD = 2.20$), moderate exercise 3.49 times per week ($SD = 2.26$), and mild exercise 3.08 times per week ($SD = 2.83$).

Exercise Self-Efficacy. Next, participants completed the Exercise Self-Efficacy Questionnaire (McAuley, 1993) to assess intentions to carry out physical activity in the coming weeks by responding to eight questions. This questionnaire provides insight into how confident the participant is in their ability to continue working out for an extended period of time. If the individual is more confident in the first few weeks and reports less confidence as the weeks go on, then it is possible that they do not believe they are able to continue a workout regimen or they were possibly only working out for a short term purpose and continuing such action is unnecessary. Participants rated their confidence on a scale ranging from 0-100%, with 10% increments. Responses were averaged to compute an overall self-efficacy score ($M = 65.32\%$, $SD = 32.38$), which indicated that participants generally felt confident in their ability to work out over the course of the next eight weeks. This variable was not included in the primary analyses and is not further reported. The specific questions and structure for the questionnaire are provided in Appendix A.

Social Media Usage. Participants then answered a series of questions about their personal social media usage. The purpose of these questions was to obtain a well-rounded understanding of the participant's experience with social media and how frequently they actively

use social media. The most frequently used social networking site amongst participants was Facebook. 82% of participants indicated that they primarily access their social media accounts on their phone, participants overall reported spending an average of 2.23 hours per day on social media sites, and post/share exercise-related content on their social media profiles approximately 1.63 times per month. The full assessment is provided in Appendix A.

Demographic Questions. Participants were asked to provide demographic information such as age, ($M = 25.28$, $SD = 10.64$), race/ethnicity (65.2 % identified as White/Caucasian, 18.3% as Asian/Pacific Islander, 5.7% as Black/African American, and 6.1% as Hispanic), sexuality (80% identifying as straight/heterosexual, 4.3% identified as homosexual, and 8.3% identified as bisexual), and socioeconomic status (37.1% identified as having a total combined family household earning last year under \$99,999, 19.7% identified as having a total combined family household earning of \$100,000 to \$199,999, 17.5% had a combined family household earning over \$200,000, and 21.3% either chose not to respond or were unsure).

Interest in Follow-up Qualitative Study. Lastly, the survey concluded with a yes or no question asking participants, “Are you interested in possibly participating in a 1-hour long focus group at Mount Holyoke College as a follow-up study? You would be compensated for your time with a \$15 Amazon.com gift card if chosen to participate.” After the participant responded to this question, they were asked to provide the necessary information in order to have their research credit granted through SONA, their email address entered into the gift card drawing, and to be contacted in the event that they were selected to participate in the follow-up study after expressing their interest. 54 females and 10 males said that they were willing to participate in the follow-up study.

Study 1 Results

Analyses were first conducted to test the effects of social media platform (Twitter or Instagram) and account type (Individual or Corporate) on self-reported motivation to exercise. Follow-up analyses were conducted including Relative Autonomy Index (RAI) as a covariate in order to control for the potential influence of intrinsic/extrinsic exercise motivation.

Correlations

Bivariate correlations were examined to explore the relationships between RAI and self-reported motivation to exercise for each type of Stimuli (see *Table 1*). Significant correlations were found between Instagram Corporate stimuli motivation to exercise and RAI, $r(230) = .23, p < .001$, and Twitter Corporate stimuli motivation to exercise and RAI, $r(230) = .23, p < .001$. These results indicate that exercise motivation ratings for Instagram and Twitter Corporate stimuli are positively associated with intrinsic motivation.

Self-Reported Motivation to Exercise

Initially, a two-way repeated measures ANOVA was conducted to determine the effects of social media platform (Instagram or Twitter) and account type (Individual or Corporate) on self-reported motivation to exercise. Main effects indicated that Instagram stimuli ($M = 3.38, SD = .88$) were rated as significantly more motivational than Twitter stimuli ($M = 3.24, SD = .87$); $F(1, 230) = 28.19, p < .001, \text{partial } \eta^2 = .11$). Stimuli from individual accounts ($M = 3.31, SD = .88$) and corporate accounts ($M = 3.31, SD = .91$) did not differ in their motivation ratings, $F(1, 230) = .37, p = .54, \text{partial } \eta^2 = .002$.

Table 1.

Correlations among RAI and Self-reported Motivation to Exercise for each Social Media Stimuli Category

	Instagram Individual	Instagram Corporate	Twitter Individual	Twitter Corporate	RAI
RAI	.114	.230*	.105	.225*	1.000*
Instagram Individual	-	.793*	.827*	.646*	.114
Instagram Corporate		-	.767*	.795*	.225*
Twitter Individual			-	.744*	.105
Twitter Corporate				-	.230*

Note. * = $p < .05$

There was a statistically significant interaction between social media platform and account type predicting motivation, $F(1, 230) = 47.96, p < .001$ partial $\eta^2 = .14$. Simple effects for account type were examined to decompose the interaction and are displayed in *Figure 8*. Instagram stimuli from individual accounts ($M = 3.45, SD = .94$) were significantly more motivating than Instagram stimuli from corporate accounts ($M = 3.31, SD = .91, F(1, 229) = 11.87, p = .001$, with a mean difference of .135, 95% CI [.06, .21]). Twitter stimuli from corporate accounts ($M = 3.31, SD = .914$), were significantly more motivating than Twitter stimuli from individual accounts ($M = 3.17, SD = .90, F(1, 229) = 11.90, p = .001$, with a mean difference of .14, 95% CI [.06, .22]).

Self-Reported Motivation to Exercise Controlling for RAI

In order to account for RAI, as an indicator of intrinsic exercise motivation, while examining differences in self-reported motivation to exercise, a two-way repeated measures ANCOVA was conducted to determine the effects of social media platform and account type on self-reported motivation to exercise with RAI included as a covariate. Consistent with the analyses conducted without the covariate, there was a statistically significant main effect for social media, $F(1, 228) = 7.43, p = .007$, partial $\eta^2 = .03$. Unlike the analyses that did not control for RAI, there was also a statistically significant main effect for account type and Corporate stimuli was rated significantly higher than individual stimuli, $F(1, 228) = 7.20, p = .008$, partial $\eta^2 = .03$. There was also a statistically significant interaction between social media platform and account type predicting motivation, $F(1, 228) = 8.77, p = .003$, partial $\eta^2 = .04$. Simple main effects demonstrated that similar to the interaction results without the covariate, Instagram stimuli from individual accounts were significantly more motivating than Instagram stimuli from a corporate account, $F(1, 228) = 16.64, p < .001$ with a mean difference of .14, 95% CI [.06, .21]. Twitter stimuli from a corporate account were not significantly different from

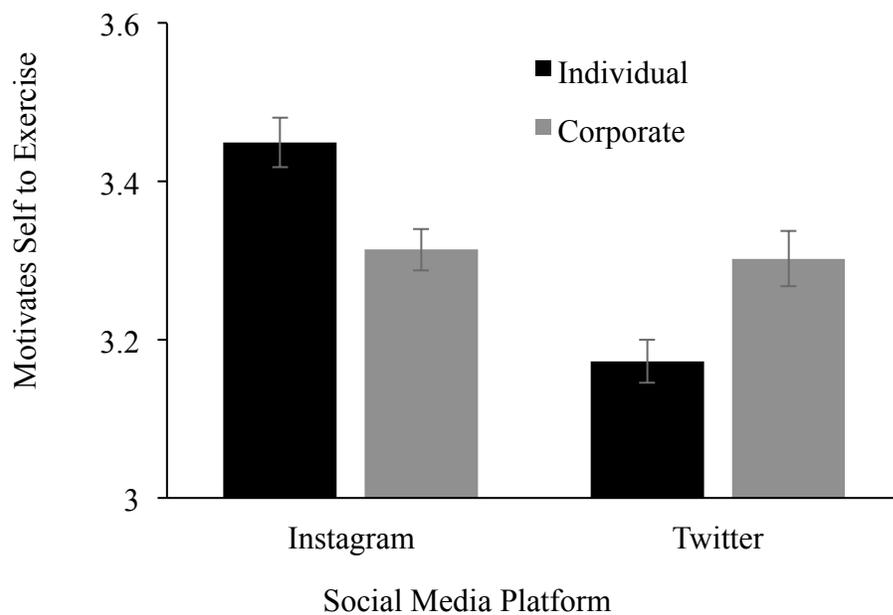


Figure 8. Effects of social media platform and account type on self-reported motivation to exercise. Error bars represent standard error of the mean. The y-axis is truncated to better illustrate the pattern of results.

stimuli from individual accounts, $F(1, 228) = .45$, $p = .503$ with a mean difference of .13, 95% CI [.04, .22].

Self Motivation to Exercise and Social Media Platform

Comparing self-reported motivation to exercise in response to social media platform, the main effect (Instagram or Twitter) was significant, $F(1, 228) = 7.49$, $p = .007$, partial $\eta^2 = .032$, as was the effect of RAI, $F(1, 228) = 8.19$, $p = .005$, partial $\eta^2 = .035$, however the interaction between social media platform and RAI was not significant, $F(1, 228) = .01$, $p = .944$, partial $\eta^2 < .001$. These results indicate that differences in self-reported motivation to exercise in response to Instagram and Twitter stimuli are not moderated by intrinsic/extrinsic exercise motivation.

Self Motivation to Exercise and Account Type

Lastly, for the fifth hypothesis, a repeated-measures ANCOVA was conducted to compare self-reported motivation to exercise in response to Individual and Corporate stimuli, controlling for RAI. The main effect of account type (Individual or Corporate) was significant, $F(1, 228) = 5.720$, $p = .018$, partial $\eta^2 = .024$, as was the effect of RAI, $F(1, 228) = 7.532$, $p = .007$, partial $\eta^2 = .032$. The interaction between account type and RAI was also significant, $F(1, 228) = 8.815$, $p = .003$, partial $\eta^2 = .036$. These results indicate that differences in self-reported motivation to exercise in response to Individual and Corporate account type stimuli are moderated by intrinsic/extrinsic exercise motivation and are illustrated in *Figure 9*.

To further examine this interaction, RAI scores were categorized by quartile, with the most extrinsic scores in the first quartile and the most intrinsic scores in the fourth quartile. A 2-way mixed ANOVA was then conducted with the RAI quartiles as the between subjects factor and account type (Individual or Corporate) as the within subjects factor. The main effect of

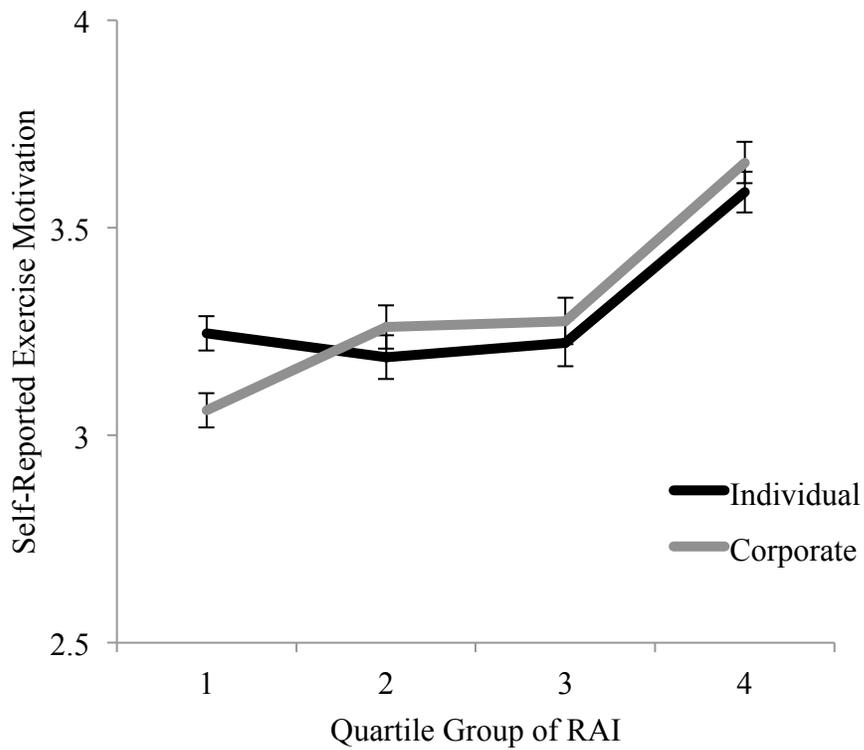


Figure 9. Marginal means of self-reported motivation ratings for individual and corporate stimuli by RAI quartile. Error bars represent standard error of the mean. The y-axis is truncated to better illustrate the pattern of results.

account type was not significant, $F(1, 226) = .006$, $p = .938$, partial $\eta^2 < .001$, however RAI quartile was a significant predictor of exercise motivation, $F(3, 226) = 3.630$, $p = .014$, partial $\eta^2 = .046$. Importantly, the interaction between account type and RAI quartile was also significant, $F(3, 226) = 3.178$, $p = .0025$, partial $\eta^2 = .040$. To decompose this interaction, within subjects t -tests comparing self-reported exercise motivation across account type at each quartile were conducted. There was a significant difference between Individual ($M = 3.246$, $SD = .832$) and Corporate ($M = 3.060$, $SD = .820$) accounts in the first quartile (the most extrinsically motivated), as displayed in Figure 9, $t(57) = 3.169$, $p = .002$. There were no significant differences found in the second, third, and fourth quartiles, $ps \geq .319$.

Study 1 Exploratory Results

Following analyses of the primary results, exploratory analyses were conducted to determine the stimulus motivation for others to exercise. Participants responded to the following statement: This social media post would make other people want to exercise. Responses to this statement were used in order to test whether perceptions of how much the stimuli would motivate others to exercise were (or were not) consistent with perceptions of the stimuli as personal motivations.

Motivation for Others to Exercise

A two-way repeated measures ANOVA was conducted to determine the effects of social media platform (Instagram or Twitter) and account type (Individual or Corporate) on others' motivation to exercise. Main effects indicated that Instagram stimuli ($M = 3.955$, $SD = .713$) were rated as significantly more motivational than Twitter stimuli ($M = 3.757$, $SD = .743$); $F(1, 230) = 48.679$, $p < .001$, partial $\eta^2 = .175$). Stimuli from individual accounts ($M = 3.861$, $SD = .728$) and corporate accounts ($M = 3.851$, $SD = .758$) did not differ in their motivation ratings, $F(1, 230) = .113$, $p = .737$, partial $\eta^2 = .000$.

There was a statistically significant interaction between social media platform and account type predicting the motivation for others to exercise, $F(1, 230) = 30.693$, $p < .001$ partial $\eta^2 = .118$. Simple effects for account type were examined to decompose the interaction. Instagram stimuli from individual accounts ($M = 4.017$, $SD = .754$) were significantly more motivating than Instagram stimuli from corporate accounts account ($M = 3.893$, $SD = .765$, $F(1,$

229) = 14.866, $p < .001$, with a mean difference of .197, 95% CI [.142, .253]) and are displayed in *Figure 10*. Twitter stimuli from corporate accounts ($M = 3.809$, $SD = .841$), were significantly more motivating than Twitter stimuli from individual accounts ($M = 3.706$, $SD = .776$), $F(1, 229) = 6.205$, $p = .013$, with a mean difference of .010, 95% CI [-.050, .070].

Reported Stimuli Posted for Extrinsic Reasons

A two-way repeated measures ANOVA was conducted to determine the effects of social media platform (Instagram or Twitter) and account type (Individual or Corporate) on perceptions of posts being posted for extrinsic reasons. Main effects indicated that Instagram stimuli ($M = 4.157$, $SD = .773$) were rated as significantly more extrinsic in reasons for being posted than Twitter stimuli ($M = 4.064$, $SD = .758$); $F(1, 230) = 13.225$, $p < .001$, partial $\eta^2 = .055$). Stimuli from corporate accounts ($M = 4.359$, $SD = 1.02$) were reported as being posted for significantly more extrinsic reasons than individual accounts ($M = 3.862$, $SD = 1.02$, $F(1, 230) = 29.916$, $p < .001$, partial $\eta^2 = .116$).

There was also a statistically significant interaction between social media platform and account type predicting social media posts being posted for extrinsic reasons, $F(1, 230) = 11.300$, $p < .001$, partial $\eta^2 = .047$. Simple effects were examined to decompose the interaction and are displayed in *Figure 11*. Instagram stimuli from corporate accounts ($M = 4.444$, $SD = .989$) were posted for significantly more extrinsic reasons than Instagram stimuli from individual account ($M = 3.871$, $SD = 1.062$), $F(1, 229) = 41.582$, $p < .001$, with a mean difference of .093, 95% CI [.043, .144]). Twitter stimuli from corporate accounts ($M = 4.274$, $SD = 1.098$), were posted for significantly more extrinsic reasons than Twitter stimuli from individual accounts ($M = 3.854$, $SD = 1.037$), $F(1, 229) = 18.376$, $p < .001$, with a mean difference of .497, 95% CI [.318, .676].

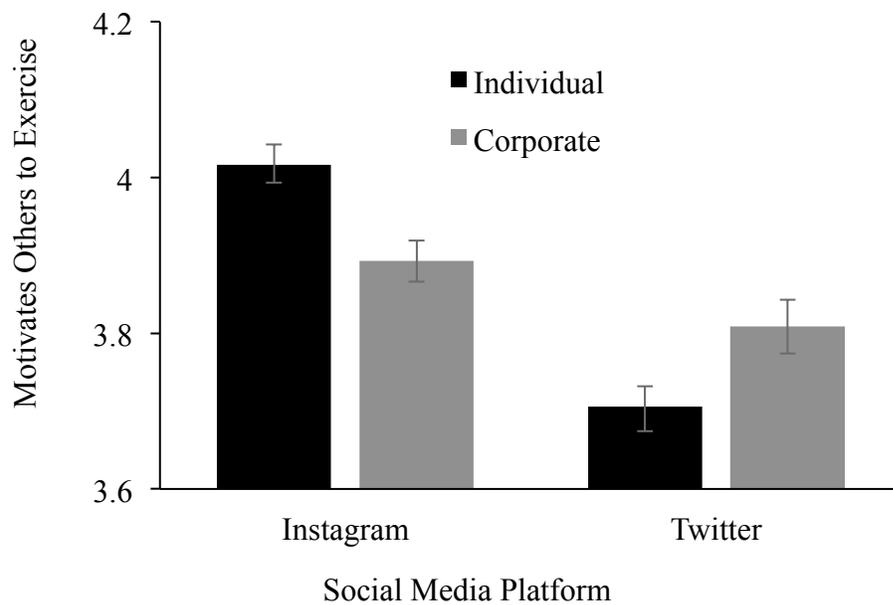


Figure 10. Effects of social media platform and account type on reported motivation of others to exercise. Error bars represent standard error of the mean. The y-axis is truncated to better illustrate the pattern of results.

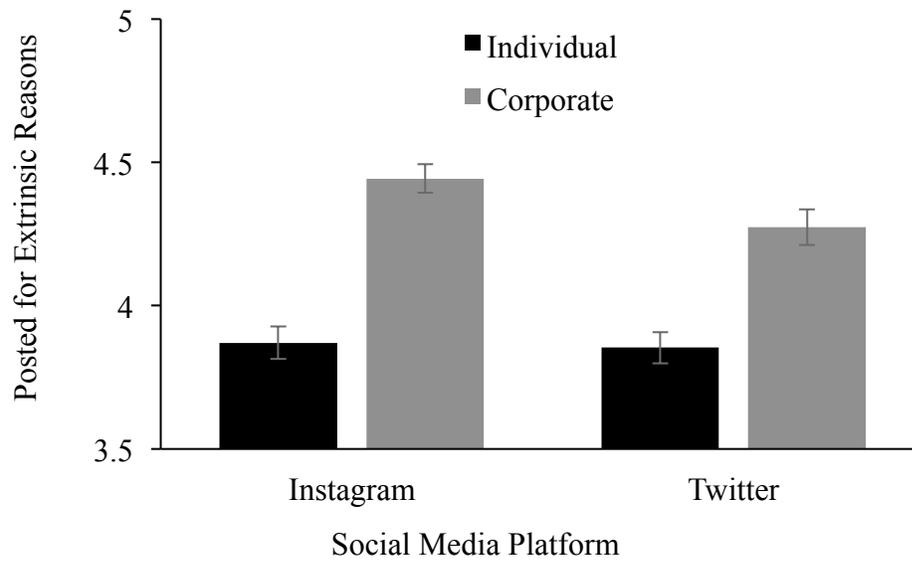


Figure 11. Effects of social media platform and account type on reported motivation of posts being posted for extrinsic reasons. Error bars represent standard error of the mean. The y-axis is truncated to better illustrate the pattern of results.

STUDY 2

Following total completion of Study 1, which discovered that Instagram was more motivating than Twitter and that Individual accounts on Instagram and Corporate accounts on Twitter are more motivating, Study 2 was initiated. The purpose of Study 2 was to gather supplementary support for Study 1 and delve further into the subject matter by speaking to individuals about their personal experiences and relationship with exercise and social media. Utilizing qualitative data, specifically focus groups, allowed for overall results to be further developed and provided the opportunity to convert responses from a 1-6 scale into a more comprehensive form of data.

Methods

Hypotheses are not provided for the qualitative portion of the study because it is considered supplementary to the quantitative portion. Rather, the conversation was geared in a direction that would allow for deeper reasoning as to why and how participants act and engage with their social media and exercise routine(s). The focus groups primary purpose was to further analyze the results from the online questionnaire and to shed light on these outcomes using an additional perspective, allowing for follow-up opportunities on questions and specific topics to be fully developed, which is not possible in a quantitative setting.

Participants

Out of the 64 individuals from Study 1 who expressed interest in participating in a follow-up study, six of them were selected to participate in Study 2. The additional four participants were recruited via the local community by word of mouth due to a lack of response from males willing to participate.

Focus group participants each received a \$15 Amazon.com gift card as compensation. Three semi-structured focus groups were organized into a three-person all male group, a three-person all female group, and a four-person mixed sex group with two males and two females.

Procedure

At the beginning of the study, the participants were informed of the ground rules after being made aware of their rights as a participant and signing an informed consent form that included consent to have their conversations audio recorded. Examples of ground rules included: only one participant is allowed to speak at a time, all individuals can contribute to the

conversation regardless of their viewpoint, and that there are no right or wrong answers (Savin-Baden & Major, 2013). The conversation was documented using a recording device and later transcribed in its entirety for analysis. A pilot focus group was conducted with volunteers from Mount Holyoke College prior to the formal focus group(s) in order to verify the procedure for the final study and ensure fluidity for the official focus groups. No changes were made to the procedure following the pilot study.

Unlike Study 1, which was anonymous, the first names of the focus group participants were needed since the focus group's conversations were recorded for transcription purposes and to allow for smoother and a more relaxed conversation between participants. Collectively, the ten individuals spent 35-45 minutes discussing their personal motivation to exercise, how social media plays a role in influencing their decisions to work out, and their perceptions of exercise-related social media. In addition, the stimuli and topics discussed in Study 1 were briefly touched upon as a gateway into conversation regarding social media content.

Qualitative Results: Thematic Analysis

Through three semi-structured focus groups, directed and open-ended questions were used to gather a greater depth of understanding and supplement the data found in Study 1. Since not all of the participants completed the initial online survey, primary questions were modified by providing a full description of Study 1 content, rather than a short reminder, in order to allow for fair and equally comprehensive focus groups. All participants were enrolled at either Mount Holyoke College ($n = 6$) or University of Massachusetts-Amherst ($n = 4$) and ranged from 18 to 23 years old ($M = 21.20$, $SD = 1.62$).

When analyzing the focus groups an analytic memo was first conducted immediately after each focus group was complete, which entailed documenting any emerging themes, initial takeaway thoughts, and noticeable key topics. Before any data could be further explored, all names and any potential identifying information were eliminated from the transcriptions and participants were replaced with numbers in the coding and analyzing processes. Next, the focus group conversations were transcribed verbatim and a thematic analysis, which entails identifying major themes by recognizing a group of within sub-themes, was performed where three primary themes were identified (Attride-Stirling, 2001). These three themes were: finding enjoyment in the obligation of exercising, motivation by others, and social media's impact on perceiving others. Direct quotes are used throughout the analysis as support for the themes and to clearly express the participants' thoughts and opinions

Theme 1: Finding Enjoyment in the Obligation of Exercising

Most participants concurred with the idea that exercise is good for you, with some individuals expressing insight into the “why” element a bit more than others. While the participants of all three focus groups clearly acknowledged that exercise is important for their bodies, they all endorsed different reasons. While all participants recognized the positive benefits exercise yielded, some identified those factors more easily than others. The key words or concepts that participants used to describe the ways in which they found enjoyment in their exercise and work out routines were: feeling a greater sense of confidence after a workout, enjoying the endorphins that are produced during a workout, feeling more energized overall, and understanding the importance of a routine or schedule.

When asked if they view their workout as more of an enjoyment or an obligation, the majority of participants responded by saying that it was an “enjoyment,” while a few were a bit more hesitant than others. Participant #3 in the all-female group exemplified this by stating, “I mean when I exercise, like I do feel happier, like the endorphins or whatever, but like getting my butt there is different.” She understood the importance of exercise and the positive benefits it has on her body, but noted that sometimes concerting the effort required to initiate such action can be a struggle. As she pointed out, the euphoric feeling does not come until the workout has been initiated, and thus, can only be felt upon engaging in exercise. In addition, all-female participant #1 described how she feels post-workout by mentioning that she simply has more energy during the day and she tends to have a renewed mental clarity. Additionally, she noted that by recognizing that exercise is good for her body, it makes her feel generally healthier and affords her a guilt-free opportunity to eat more. Thus, exercise provides her with numerous feelings, all of which stem from a minor sense of obligation to work out, because she is cognizant of the

countless benefits she will reap if she elects to go to the gym or find another means to motivate herself to be active.

Unlike participant #3 in the all-female group, every male in the all-male group declared a raw enjoyment for exercise. Collectively they all engaged in sports from childhood to college, with some still participating in college and they all voluntarily exercise or workout several days a week simply for the pure enjoyment of it and the satisfaction that it provides them.

All-male participant #1 stated: “I don’t really see it as an obligation. Like lifting and doing ab workouts gets boring after a while and gets repetitive, but I’m very motivated to keep doing it because I want to be like more fit. But sports...like I’ll be in my apartment and be like I want to go play basketball right now.” All-male participant #2, who is currently recovering from a concussion due to a soccer incident stated: “I just couldn’t do stuff last semester which sucked, so I’m trying to gain back some muscle and get back in shape, but I just love the endorphins you get from working out.” All-male participant #3 stated: “If I don’t work out after like a day, I start to feel like crap.”

The vocabulary that the all-male participants chose to describe their relationship with exercise exemplified the fun, yet addictive nature that exercise can yield. Between wanting to go to the gym every day in order to avoid potential feelings of “crappiness” to having random urges to pick one’s self up and go play basketball for the fun of it, exercise does not always have to be a struggle or inner fight. Sports provide countless people with a pleasurable and engaging form of exercise that sometimes may feel more like a game, than an actual workout.

Theme 2: Motivated by Others

Another recurring and clear trend that appeared throughout all three focus groups was the motivation that participants receive and find in others, both from their peers and from individuals

on social media. All ten participants preferred a social environment compared to an independent workout while exercising, as they recognized that having others around them pushed them to workout more and they felt as though they were “in it together”. This ranged from simply being at the gym and having others exercising in their line of vision to partaking in a workout class/program with friends and participating in a team sport. Two participants in the co-ed group described a current program they were completing with several other friends entitled BBG or Bikini Body Guide, which consisted of four seven-minute circuits and is performed three days a week. Additionally, one female participant went as far as describing a peer who creates and disseminates a doodle poll to her friends in order to establish a convenient time for all of them to go to the gym together. Only two of the ten participants mentioned working out alone as something they additionally enjoy, although both situations warrant a clause. It is noteworthy that one of them grew up playing team sports, but enjoys running because she finds it to be an escape and way to de-stress. She has even completed several half-marathons, but she recognizes that her enjoyment for running is not her ‘typical’ behavior and part of her normal decision-making process. The other participant describes her preference by stating:

I like being around other people when I exercise, but I don’t like exercising with them. Like especially people that I know very well, I don’t normally go with my friends to the gym just cause it puts more pressure. If I see them doing that, then maybe I should be doing that too or like I don’t know, I like doing my own thing, but I like being surrounded by people. Like if I was home by myself, I probably wouldn’t exercise on my own.

She recognizes that although she may prefer to not actually workout with others directly, the physical push to workout comes from knowing that others are doing the same around her in the shared space.

Another way in which the participants found motivation from others was through social media or observing other people, more specifically people in better shape than they are. All

participants willingly stated that they form judgments about people's bodies and claimed it's a "human process" and a natural response, especially when you don't know the person, thus admitting to making social comparisons. No matter how they view other people, whether its positive or negative, by drawing conclusions and making judgments of individuals through social media as a way to gain a more accurate view of themselves, they are making social comparisons. Making social comparisons has the potential to have both positive and negative results on an individual, as they can cause greater self harm by pulling the individual down and making them feel bad or they can booster a person's self-esteem, potentially giving them more self-confidence. One male participant described the importance he places on how a person carries themselves, compared to what they physically look like. He claimed that this is more important to him while simultaneously admitting he cannot expect everyone to go to the gym and workout as much as he does. He states:

I think seeing someone in better shape than you is more motivating than someone that is in worse shape...When I see someone at the gym or posts like that of people that I know are in better shape than me, then that's motivating and I'm like I still have some to do and some to work for and some motivation, but if I see someone that is out of shape and like doesn't really care about their body, then I just like look past it and it doesn't un motivate me, but it definitely doesn't motivate either. So like I judge people a lot on how they carry themselves more than how they look. Like I don't care if someone is not in good shape. Like I don't expect everyone to workout as much as I do or my friends do, I don't care about that, it's just all about how they carry themselves.

Another male participant in a different focus group admitted that he finds more motivation in personal accounts on social media because he sees corporate account content as more sports focused and believes that these do not actually motivate him to exercise. In addition, he sees personal and peer accounts as more realistic than content put out by a company such as Nike. For most participants, being able to relate to and understand the individual that they are

looking at motivates them more than an ad, in which they know someone trained for an extended period to shoot.

When discussing the motivation behind words and images, one female participant in the co-ed group explained how seeing her peers and other girls in bikinis on a site such as Instagram often “get her” or makes her want to get in better shape and workout more. Having the ability to visually see the content promotes and motivates her. To some, having the opportunity to be exposed to both text and an image at the same time was found to be even more motivational because they saw it as a way to thoroughly comprehend the meaning behind the post and achieve a greater understanding, as long as the posts were not a consistently recurring event. All-female participant #3 stated:

I think it depends on the frequency that they post, but it also depends on how well I know the person because if I have friend I speak to regularly and I know she changed her lifestyle and changed her diet and is working out and going to the gym like 5 days a week for the past month, like is really proud of that and posts like 1 photo as like I normally don't do this, but I'm proud of this...Like that's really cool versus someone who like just posts a picture in a sports bra...

Power of the Like. Lastly, an all-male participant identified “likes” by someone’s followers as a form of motivation. Having the opportunity for others to reassure you and provide their affirmation through the form of a “like” is not only motivating, but can also encourage one to continue working hard and stay on their exercise path. For some, it may be a sense of feeling accountable to their followers and the need to continue to generate content and show progress.

For others, it may simply be for the attention, but at the end of the day, it is all still motivational.

He exemplifies this by stating:

Yeah, thinking about it, like a lot of my friends that post, like of transformation and progress pictures, I definitely think is to motivate themselves. Because although they like that attention from the likes, the likes are kind of what motivate you. When people praise you for that, you feel good about it. Like I made an accomplishment and people realize that and it feels good.

Theme 3: Social Media's Impact on Perceiving Others

In today's world where human interactions surround us and social media is at our fingertips, it is perhaps easier than ever to jump to conclusions or formulate rash judgments about strangers. The outcome of these focus groups confirmed this instinctive human behavior to judge others – every participant claimed that they judge others or make conclusions about others and their body type, to some degree. Two participants in the all-female group clearly exemplify this by stating, “ I think everyone does even if they admit it or not” and “ I think it is just like a thing we are trained to do, and to not do that anymore, is difficult. Not wanting to, that is difficult.” Some participants described it as seeing others and immediately deciding if that person has a nice, fit body, an average body, or a fat and overweight body. Furthermore, several participants described seeing a body on Instagram and comparing it to their own. This action causes them to see most people on social media or in their daily life as an arbitrary way of comparing their own body. All-male participant #2 clearly exemplified this when he stated:

I feel like for me, there are people with average bodies and then like if people are like exceptionally good looking, I'll notice and be like they look good or if they're fat, then I'll be like they don't have a great body. But, other than that, I don't really pay attention to that on social media.

Clearly he recognizes how he perceives others and admits to not giving it much attention on social media, but since he still mentioned it, he indicates that this is still a minor factor in his mind when scrolling through his social media feeds.

Body Image Extremes. Alongside conversations of discussing how participants perceive others in social media, extremes in the fitness world were also a topic of conversation in each group. When asked to describe their perspective and outlook on physique competitor type bodies and compare it to a Victoria's Secret or "Instagram model" type of body, most participants expressed

how they viewed these bodies as unhealthy or how they were not personally attracted to them. Most participants went as far as to say that they would never want to look like them either. Interestingly, gender seemed to have a strong impact on these conversations within each focus group. In the all-male group, the conversation led to unanimous agreement that they would personally not want to physically look like a professional body builder because they see it as “too big”. In comparison, the all-female group saw body extremes as a way to express their feelings of pressure that they feel society has put on them to look like a Victoria’s Secret model and to be as thin as possible. In the middle of the spectrum was the co-ed focus group where each individual had a different outlook. The male participants in this group saw these bodies in extremely contrasting ways. One of them viewed it all as art and a way of crafting one’s body to be the best that it can be, while the other saw it as something that turns these individuals into psychologically unhappy people with a rigorous lifestyle that is taken to the extreme. The females in the co-ed group provided a much lighter and positive response, which included seeing people with such bodies as maintaining them for their career or pursuing and working at them as hobbies. In addition, the other female in the co-ed group described seeing the body building physique as aggressive and harsh, while the Victoria’s Secret models appear sweet and delicate, which comes across as “so perfect”.

Men Lift and Women Do Cardio. The prevailing idea in our society that men should appear more muscular, while women should appear more slender has resonated beyond gyms and throughout the fitness arena according to our participants as it has a tendency to influence the ways in which people workout. Nine out of the ten participants admitted to witnessing this social pressure to adhere to gender norms regarding their physique type, which they did not like. Out of the nine participants that admitted to witnessing this pressure, they all describe entering a gym

and observing men mainly lifting and dominating the weight area of a gym, while women filled the cardio machines on the other side. Occasionally, they would see a male on a treadmill running or a women lifting, but they were few and far between. The one participant who had not experienced this pattern of gym behavior admitted that her perception might be skewed due to attending boarding school in Europe, an all-female college, and having her own gym at home for summer breaks. In the all-female group, one of the participants described this behavior by stating:

Yeah, it's intimidating! I'm so weak and if I go into the weight section they have, I don't even know what number they would have something on, and I have to change it to like ten pounds, and obviously like they can all see, it's like...it's just kind of embarrassing too. And even if I wanted to, I feel like it's hard to.

And another stated:

I think it is really damaging for society, both ways, for guys and girls. Like my boyfriend is a very small person, like very thin, and he feels bad all the time but he doesn't want to be one of those gym bros, like that's not me. But also hates feeling like he's tiny and skinny, like there's no middle ground.

These outlooks and opinions on such behavior reflect the widespread perspectives that are currently held by many. Granted, generalizations should not be drawn on a population based on the assessments and viewpoints of ten individuals, but it does provide greater insight into present issues that warrant more attention and should be highlighted.

Table 2. Coding Analysis

Major Theme / Subtheme	Counts/Percentages	Exemplary Quote
Finding Enjoyment in the Obligation of Exercising		
Exercise is important	10/10 (100 %)	“ I think there are two sides of it. One is definitely for health and just keeping active. I also enjoy it and it’s a form of distraction like distressing.” – Coed Female #1
Finding Confidence	6/10 (60 %)	“I feel healthier and I feel better and like I’m in a better mood when I work out and when I don’t workout for awhile, I’ll feel more tired and just lazy in general inside” – Coed Female #2
Endorphins/More Energy	7/10 (70 %)	“I’m trying to gain back some muscle and get back in shape, but I just love the endorphins you get from working out.” – All-Male # 2
Importance of Routine	9/10 (90 %)	“ Like, once I get into it, I keep going, but if I don’t do it for awhile then I don’t, so I feel like it’s the repetition that motivates me.” – All-Female #1
Pure Gratification	3/10 (30 %)	“I don’t really see it as an obligation...But sports, like I’ll be in my apartment and be like I want to go play basketball right now.” – All-Male #1
Motivated by Others		
Exercising in a Social Environment	10/10 (100 %)	“I prefer going to the gym with other people. I prefer doing like, like right now we’re doing this BBG guide, there are 4 of us doing and its high intensity workouts for 14 minutes 3 times a week. That’s fun and it like motivates you and you have like other people motivating you...” – Coed Female #1
Working out With Others	9/10 (90 %)	“My motivation usually comes from going with other people.” – All-Female #3
Observing People in Better Shape on Social Media	10/10 (100 %)	“Like if you see someone that’s in really good shape and jacked, you’re like “damn”.” –All-Male #1

Motivation in Personal Accounts	4/10 (40%)	<p>“I definitely like a story behind and more than just a picture. Um I think a story means a lot more than just saying nothing. Like a story where they talk about what they’ve overcome, I think that’s a lot more motivational and like better to see.”</p> <p>– All-Male #3</p>
Importance of Visual Stimuli	7/10 (70 %)	<p>“I mean definitely a picture over text. I mean like a text doesn’t do much motivationally for me.” – All-Male #2</p>
Power of the Like	5/10 (50 %)	<p>“A lot of my friends that post, like of transformation and progress pictures, I definitely think it is to motivate themselves. Because although they like that attention from the likes, the likes are kind of what motivate you. When people praise you for that, you feel good about it.” –All-Male #2</p>

Social Media’s Impact on Perceiving Others

Judging Others Based on Physical Appearance	9/10 (90 %)	<p>“I think it is just like a thing we are trained to do and to not do that anymore is difficult. Not wanting to, that is difficult.”</p> <p>– All-Female # 3</p>
Comparing Others on Social Media to Ourselves	6/10 (60 %)	<p>“Whenever I see an image of a girl I think is super fit, I’m like ok I need to go do something about this.” – Coed Female # 1</p>
Existence of Body Image Extremes	10/10 (100 %)	<p>“There is still a big differentiation between someone who is doing like CrossFit in light of physical fitness and like a Victoria Secret model where there is so much pressure not on necessarily physical fitness, but just to be thin, lose weight, and I think that’s even less healthy.” – Coed Male #4</p>
Pressure Behind the idea: Men Lift, Women do Cardio	9/10 (90 %)	<p>“I think it is really damaging for society, both ways, for guys and girls. Like my boyfriend is a very small person, like very thin, and he feels bad all the time but he doesn’t want to be one of those gym bros.”</p> <p>– All-Female #3</p>

DISCUSSION

General Discussion

Through an explanatory sequential design, the present research set out to examine the extent to which people perceive exercise-related content on different social media platforms (Twitter or Instagram) and from different types of users (individuals or corporations) to motivate themselves and others to exercise.

It was hypothesized that a difference would exist in self-reported motivation to exercise between corporate and individual stimuli, but it was determined that the difference depends on what social media platform you are present on. Thus, these results suggest that Instagram is more motivating, but by looking further into account type, results reveal a more nuanced interpretation. Individual accounts were found to be more motivating on Instagram, whereas Corporate accounts were more motivating on Twitter. One possible explanation for this finding could be that the participants were visually able to see the individual on Instagram, which may have come across as more natural and relatable to the participants. Several focus group participants also mentioned this same trend of finding motivation in Individual accounts on Instagram because they were able to read the individual's story in the caption and witness their weight loss results or efforts in the image, culminating in greater incitement. On the other side, the lack of connection that is able to be made on Twitter between a user and an individual account may be a reason why Corporate accounts are more successful at motivating individuals to exercise, since they already have a strong media presence and a high familiarity rate. This is

because their brand name or logo probably occurs on numerous advertising outlets in addition to social media platforms, which results in overall greater exposure.

The hypothesis that self-reported motivation would be higher for Instagram stimuli than Twitter stimuli was supported. Based on the results of the present research, it is now more reasonable to say that “a picture is worth a thousand words” as Instagram, a visual platform, aroused more motivation in an individual than Twitter, which relies on text to communicate a message. Instagram combines image with text to specifically define what the poster wants the viewer to visualize, whether this is a picture of them, an accomplishment, or a transformation, providing a visual clearly spurs motivation. This is exemplified when an individual posts a specified amount of weight loss on Twitter, thus requiring their followers to imagine what they currently look like, verses an Instagram post which is conveyed through pictures and allows their followers to see exactly what they look like. It is possible that the general idea of being able to observe our family, friends, peers, and even strangers engaged in working out is motivation within itself.

In addition, it was hypothesized that intrinsic/extrinsic exercise motivation would be significantly associated with self-reported motivation to exercise across all stimuli. This was partially supported by the results. Instagram Corporate stimuli and Twitter Corporate stimuli were significantly positively associated with the ratings of self motivation. These findings suggest that there is a quality in Corporate accounts that Individual accounts do not have, as both of the stimuli significantly associated with self-reported motivation to exercise were posted from corporate accounts. There are numerous elements that could have contributed to this outcome, which may include the posts’ wording, image quality, available corporate resources not readily available to individual parties, and the prominent name recognition or familiarity of the company

displaying a sponsored athlete or recognizable logo. Overall, most of these potential factors come back to previous awareness an individual has of a company. I also predicted that the difference between self-reported motivation to exercise for Instagram and Twitter stimuli would be greater for extrinsically motivated individuals compared to intrinsically motivated individuals, but this was not supported by the results. The reasoning behind this was that extrinsically motivated people would be more motivated by external factors, of which social media would serve as such external factor, but this logic was not supported. Rather, the results suggest that intrinsic/extrinsic exercise motivation does not play a role in differences of self-reported motivation to exercise in response to Instagram and Twitter stimuli.

Lastly, I hypothesized that self-reported motivation to exercise would differ for corporate stimuli and individual stimuli and this effect would be moderated by intrinsic/extrinsic motivation. The results revealed that the difference between Individual and Corporate accounts was only significant for highly extrinsically motivated individuals (the first quartile as displayed in Figure 2 of the results section). Individual accounts were more motivating than Corporate accounts for these participants. Ratings for Corporate and Individual stimuli did not differ within the other three quartiles. While differences were not found amongst intrinsically motivated individuals, results found that the more intrinsically motivated an individual was, the greater level of motivation they reported for both Individual and Corporate stimuli. It is possible that these individuals are similar to the focus group participants who recognized the gratification and pure enjoyment obtained from exercising and thus, are naturally more motivated to engage in physical fitness due to their affinity for it.

As several focus group participants mentioned, Corporate accounts have a tendency to come across as unrealistic, unattainable, and un-relatable which negates motivation. This may be

partially due to the Corporately endorsed images being artificially enhanced and manipulated to elicit a specific response (Grabe, Ward, & Hyde, 2008). The uncertainty of whether the Corporate images have been subject to photo-shopping or further editing to enhance their campaigns, may produce feelings of apprehension or skepticism about the image's quality. Several of the female focus group members pointed out how the prestige associated with large companies often lures them to their branding message because it is readily identifiable, and frequently influences what and how they purchase, thus the notion of familiarity spurred their liking. They mentioned that they would rather support a company that promotes a healthy, positive body image rather than a company that creates campaigns incorporating women with bodies unattainable for most people. Their rationale was that by depicting women closer to an average clothing size, rather than a petite size, they would be more likely to purchase the product, since they would have a better idea of what the product would look like on someone similar to their size. As discussed among the focus group participants, plus size individuals often feel self conscious about their bodies when viewing petite models wearing the clothes they are shopping for. They claimed these images were unrealistic and presented a distorted perception of how the clothes would look on them. As such, when a model was presented with a similar body size, the participants agreed it promoted a healthier body image and implemented a greater sense of confidence when purchasing from that corporation.

Study 1 Limitations

Collecting data from male participants was challenging as the study was primarily being conducted at a women's college. Not only did data collection take twice as long for the males, but this resulted in more male participants not being of traditional college age, like most of the female participants, since the majority of the females were from Mount Holyoke College. The

participants in this study had the opportunity to complete the survey at their own convenience and this could have influenced how they took the survey, since they were able to take it at a time and place of their choosing. Many participants complained that the survey took a prolonged time to complete and it is possible that they could have lost focus on the material as they went through it, preferring to be engaged with their present environment, which was potentially filled with distractions. Furthermore, if they were rushing through the survey because of a personal time constraint, then this could have initiated them to start rushing through it and complete it with answers that might not actually be the most accurate response for them. Different results may have been observed if the study had been conducted in a controlled laboratory setting with limited distractions, which would have allowed participants to be more focused on answering each question independently.

An additional limitation is that the study failed to look at follow through from the participants. It is possible that the participants say they are motivated by the social media stimuli, but they never end up working out. The question that ultimately remains unanswered is if the participant ever actually does anything as a result of viewing the exercise-related content.

Stimuli Limitations. The 40 social media stimuli used in the study included 20 Twitter posts and 20 Instagram posts. Each set of 20 posts included 10 Corporate and 10 Individual images. Efforts were made in order to diversify the type of content as described in the methods section, but there still remained a lack of diversity in some respects. The Instagram images did not comprise a diverse ethnic and racial profile, as the majority of individuals in the stimuli physically appeared White. It is possible that if the participants had seen more content representing individuals like themselves, which appear more relatable, than maybe they would have reported greater self-motivation.

In addition, most Instagram stimulus depicted an individual, while others displayed people working out in a group setting or with a partner, and this is not representative of the platform's nature in terms of exercise-related stimuli. Although such content is important and highly exemplified in the real world, there still exist images without people in them or as the primary subject. Examples of such include pictures of gym equipment, people taking a picture of the scale they are standing on, or just a visually appealing caption as the primary image.

Study 2 Limitations

Before the focus groups could begin, an IRB amendment was made due to the lack of males in the local area that were willing to participate in a follow-up focus group. The amendment allowed for anyone to partake in the focus groups and abolished the requirement of having to complete Study 1 in order to participate. This meant that not all of the Study 2 participants were also Study 1 participants, as initially planned. This resulted in questions being changed or reworded in order to accommodate all ten participants.

Naturally, one of the biggest limitations of Study 2 is the inherent nature of qualitative work gathered in a focus group. Each participant could have easily been influenced by the other individuals in the room with them. Whether answering a question first or not, they may have felt uncomfortable being honest and open in front of their peers, or they may have been influenced by prior comments. If the same question had been asked in a one-on-one interview away from peers, they may have been more willing and able to respond differently. Despite these limitations, these issues might not have surfaced or developed had there not been more than one person being interviewed at a time.

When designing Study 2, three focus groups were originally planned with the intent to minimize any potential gender impact. Although findings occurred in all three groups and across

gender, the limited number of groups could be considered restrictive as the small number of participants are not an accurate representation of the larger population. Using only 10 participants, all located in Western Massachusetts, does not provide the most diverse assembly and could be improved. Lastly, a noteworthy limitation that existed in the present qualitative form of data collection includes the moderators wording and how they expressed the given comments and questions to the participants. Potential changes, subtleties, or nuances in tone of voice, speech pattern, inflection, and/or word choice could have influenced the ways in which participants responded to questions based on how they decided to interpret them. Recognizing the number of factors influencing how language can be perceived is worth noting because it has the potential to clarify how a message is processed regardless of being in or out of the lab.

Future Directions

The present research focused on Instagram and Twitter as stimuli, but future research could easily expand this study into other popular platforms such as Facebook, Snapchat, and Tumblr. Exploring the effects that the various platform styles have on an individual's self-reported motivation to exercise would be an interesting component, as all of these unexplored platforms combine both image and text within their post designs. An app that provides a unique experience for its users and would be worthy of further exploration would be Snapchat, an app that offers the ability to take and send a photo or video to either a select group of friends for a limited amount of time (one to ten seconds) before disappearing. One participant in Study 2 even mentioned that she is more likely to take and send pictures of herself in the gym and working out solely via Snapchat because she knows that it is not permanent unlike her other accounts. This form of behavior suggests that investigating social media from a "behind the scenes" perspective that explores the decisions involved in the act of posting may be worthy of future research. In

addition, having the opportunity to select who can view her image also plays a sizeable role in her partaking in such action and behavior because she is able to have more control. Having the ability to control who can view the content and for what amount of time could potentially change an individual's reported motivation if they are aware that their friends and/or peers are currently working out.

As the results of Study 1 illustrated, 82% of participants reported that their phone was the primary device that they used in order to access their social media accounts. Knowing this information, it would be interesting to explore the effect(s) that the device has on a participant, since Instagram and Twitter posts are displayed differently on a computer screen and on a phone. The visual layout of the content is different and naturally due to device, the content is much smaller. For example, when an individual views an Instagram post on a computer, the caption and user name are both displayed parallel to the image. Contrary, on a phone, the username is displayed both above the image with a small profile picture and again below the image with any potential captions, likes, or comments the post may have received.

Lastly, a future project could further survey participants beyond traditional college age (18-22) in the focus groups, which was the focus of the current project. Additionally, one-on-one interviews could be conducted concurrently with the same focus group individuals and distinct participants that only participate in the one-on-one. If the project remained as is and using an explanatory sequential design, then Study 1 could guarantee that enough male and female participants are willing to participate in a follow-up focus group before closing the study. Ensuring that all of the participants in Study 2 successfully completed Study 1 would allow for a more fluid focus group by confirming that every member was exposed to the same content, which was unfortunately not the case for the present study. The participants who did not

complete Study 1 were informed of its material prior to beginning the focus group discussion in order to provide some background information on the study.

CONCLUSION

In conclusion, the findings of this research provide insight about the perceptions people have relating to different types of exercise-related social media, and how they can potentially serve as a catalyst in motivating an individual to exercise. Most individuals in the focus group agreed that physical activity is an important part of one's physical and mental well-being and regardless of the degree of physical engagement, it is a practice they should incorporate into their daily routines.

Since its emergence in the 21st century, social media has become a ubiquitous tool of connection for its participants, allowing them to effectively communicate and promote themselves and businesses via a customizable online global platform. An initial goal of this project was to discern if social media could be utilized as a motivational tool for promoting individuals to engage in fitness. By identifying the specific content based on account type (Individual vs. Corporate) and social media platform (Instagram vs. Twitter), as well as the individual's self-reported motivation to exercise (intrinsic or extrinsic), these tools were found to positively motivate individuals to exercise. While corporate and individual posts both have the potential to be tools for effectively targeting an audience, contingent on the message, design, and distribution, the study revealed that individual posts on Instagram and Corporate posts on Twitter have a greater motivational impact on their audience.

Furthermore, when social media is used as a medium to convey a message such as flaunting a given asset, encourage someone to purchase something, or even display weight loss

results, the originator (individual or corporate) may simultaneously and inadvertently be motivating others to engage in exercise as a result which could be deemed a positive asset. The findings of this study could potentially support individuals who require a jump-start or additional motivation to propel their exercise routine. Bearing in mind the rapid growth and membership in social media sites such as Twitter, Facebook and Google+, it is critical to consider the contributions as potential outlets that these sites can be when promoting a healthy and balanced lifestyle. (Teodoro & Naaman, 2013)

In sum this research considered two prominent topics, namely social media and exercise. By analyzing the way users evaluate and process content, by presenting exercise-related social media stimulus, the present research identified fundamental features of exercise-related social media that shape the motivation experienced by users.

Appendix A

Behavioral Regulation in Exercise Questionnaire-3

WHY DO YOU ENGAGE IN EXERCISE?

We are interested in the reasons underlying peoples' decisions to engage or not engage in physical exercise. Using the scale below, please indicate to what extent each of the following items is true for you. Please note that there are no right or wrong answers and no trick questions. We simply want to know how you personally feel about exercise. Your responses will be held in confidence and only used for our research purposes.

		Not true for me		Sometimes true for me		Very true for me	
1	It's important to me to exercise regularly	0		1	2	3	4
2	I don't see why I should have to exercise	0		1	2	3	4
3	I exercise because it's fun	0		1	2	3	4
4	I feel guilty when I don't exercise	0		1	2	3	4
5	I exercise because it is consistent with my life goals	0		1	2	3	4
6	I exercise because other people say I should	0		1	2	3	4
7	I value the benefits of exercise	0		1	2	3	4
8	I can't see why I should bother exercising	0		1	2	3	4
9	I enjoy my exercise sessions	0		1	2	3	4
10	I feel ashamed when I miss an exercise session	0		1	2	3	4
11	I consider exercise part of my identity	0		1	2	3	4

12	I take part in exercise because my friends/family/partner say I should	0	1	2	3	4
13	I think it is important to make the effort to exercise regularly	0	1	2	3	4
14	I don't see the point in exercising	0	1	2	3	4
15	I find exercise a pleasurable activity	0	1	2	3	4
16	I feel like a failure when I haven't exercised in a while	0	1	2	3	4
17	I consider exercise a fundamental part of who I am	0	1	2	3	4
18	I exercise because others will not be pleased with me if I don't	0	1	2	3	4
19	I get restless if I don't exercise regularly	0	1	2	3	4
20	I think exercising is a waste of time	0	1	2	3	4
21	I get pleasure and satisfaction from participating in exercise	0	1	2	3	4
22	I would feel bad about myself if I was not making time to exercise	0	1	2	3	4
23	I consider exercise consistent with my values	0	1	2	3	4
24	I feel under pressure from my friends/family to exercise	0	1	2	3	4

Multidimensional scoring

In order to use the BREQ as multidimensional scales, simply calculate the mean scores for each set of items as indicated below (the original BREQ scoring key is given for anyone still using that version).

BREQ-3

Amotivation	2	8	14	20
External regulation	6	12	18	24
Introjected regulation	4	10	16	22
Identified regulation	1	7	13	19
Integrated regulation	5	11	17	23
Intrinsic regulation	3	9	15	21

The Relative Autonomy Index

The relative autonomy index (RAI) is a single score derived from the subscales that gives an index of the *degree* to which respondents feel self-determined. The index is obtained by applying a weighting to each subscale and then summing these weighted scores. In other words, each subscale score is multiplied by its weighting and then these weighted scores are summed. Higher, positive scores indicate greater relative autonomy; lower, negative scores indicate more controlled regulation.

Amotivation	-3
External Regulation	-2
Introjected Regulation	-1
Identified Regulation	+1
Integrated Regulation	+2
Intrinsic Regulation	+3

Godin Leisure-Time Exercise Questionnaire

1. During a typical **7-Day period** (a week), how many times on the average do you do the following kinds of exercise for **more than 15 minutes** during your free time (write on each line the appropriate number).

1. **a) STRENUOUS EXERCISE** _____ **times per week**
(HEART BEATS RAPIDLY)
 (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)

2. **b) MODERATE EXERCISE** _____ **times per week**
(NOT EXHAUSTING)
 (e.g., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)

3. **c) MILD EXERCISE** _____ **times per week**
(MINIMAL EFFORT)
 (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snow-mobiling, easy walking)

2. During a typical **7-Day period** (a week), in your leisure time, how often do you engage in any regular activity **long enough to work up a sweat** (heart beats rapidly)?

OFTEN
1

SOMETIMES
2

NEVER/RARELY
3

Exercise Self-Efficacy

The items listed below are designed to assess your beliefs in your ability to continue exercising on a three time per week basis at moderate intensities (upper end of your perceived exertion range), for 40+ minutes per session in the future. Using the scales listed below please indicate how confident you are that you will be able to continue to exercise in the future.

For example, if you have complete confidence that you could exercise three times per week at moderate intensity for 40+ minutes for the next four weeks without quitting, you would circle 100%. However, if you had no confidence at all that you could exercise at your exercise prescription for the next four weeks without quitting, (that is, confident you would not exercise), you would circle 0%.

Please remember to answer honestly and accurately. There are no right or wrong answers.

Mark your answer by circling a %:

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

NOT AT ALL
CONFIDENT

MODERATELY
CONFIDENT

HIGHLY
CONFIDENT

1. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT WEEK

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

2. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT TWO WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

3. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT THREE WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

4. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT FOUR WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

5. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT FIVE WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

6. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT SIX WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Mark your answer by circling a %:

7. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT SEVEN WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

8. I am able to continue to exercise three times per week at moderate intensity, for 40+ minutes without quitting for the NEXT EIGHT WEEKS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Social Media Usage Questions

- 1) Please select all of the social media sites you are a member of.
 - a. Twitter
 - b. Instagram
 - c. Facebook
 - d. Snapchat
 - e. Tumblr
 - f. LinkedIn
 - g. Pinterest
 - h. Yik-Yak
 - i. MySpace
 - j. YouTube
 - k. Reddit
 - l. Other _____

- 2) From the sites listed above, which one do you use the most/spend the most time on?

- 3) Approximately how many hours per day do you spend on social media?
_____ hours per day

- 4) How do you primarily access your social media accounts? (select one)
 - a. Phone
 - b. Computer
 - c. Tablet/iPad

- 5) If you are an active member on Instagram, approximately how many followers do you have on your account?

- 6) If you are an active member on Twitter, approximately how many followers do you have on your account?

- 7) Why do you use social media? (you may choose more than one choice)
 - a. To make new friends
 - b. To make professional contacts
 - c. Share personal experiences
 - d. Share music/photos/videos
 - e. Keep in touch with friends and family

- f. As a source of news
 - g. Receive and share opinions
 - h. Other (fill in the blank)
-

8) On a scale of 1-5, (*1-not at all influential, 5-extremely influential*) how much does social media influence the decisions that you make?

Not at all	Slightly	Somewhat Influential	Very Extremely	Influential
1	2	3	4	5

9) Approximately how many times per month do you post/share exercise/fitness/sport/health related content on your social media profiles?

_____ times per month

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