The Effects of Social Media on the Obsession with Supplementation

April 30, 2025

Word Count: 5265

## Introduction

The emergence and ever growing presence of certain social media platforms have recently become a double edged sword as an entire generation has come to be raised on the unrealistic societal standards of beauty and performance that the media has portrayed. Platforms such as Instagram, TikTok and Snapchat, even while serving as a powerful tool for connection, have had massive unintended repercussions in the way growing teenagers view themselves and others around them. The relationship between social media's harmful impacts on body image is a topic that is not new to recent years. Studies on eating disorders, such as anorexia and bulimia, have often focused on the psychological effects of media exposure and the female obsession with thinness and body dissatisfaction. However there is a notable gap in the research regarding the correlation between social media and the obsession of supplements and performance-enhancing substances.

This paper aims to examine the psychological connection between certain social media platforms and their fitness communities and the unintended effects on teenager's use of nutritional and performance-enhancing supplements. By collecting data on certain fitness "influencers" and trends, it is clear that distribution of such content creates a distorted reality on what is normal as a growing and active teenager. In an attempt to align with such ideals, many younger generations are turning to performance enhancements to speed up their physical transformation, unknowingly putting their health at risk in the process due to misinformation and the media's clever deception. By addressing this gap in research that has recently been widened due to a growing fitness community and new innovations in athletic supplemental technology, this paper will shed light on how social media has created a new layer of pressure for teenagers to achieve a "flawless" physique, encouraging unhealthy behaviors and an obsession with the

necessity of supplements to fulfill this role. This research explores the question: To what extent does social media serve as an enabler to the recent unhealthy obsession surrounding teenagers and the use of nutritional and athletic performance enhancers and supplements and its sudden spike of usage?

**Literature Review**

In researching this topic, it is necessary to review literature on multiple topics that contribute to the recent and clear increase in usage of supplements and anabolic steroids. The categories are social media's psychological effect on body perception, social comparison theory, athletic supplements, and anabolic steroids.

Social Media and Body Perception:

One of the most inherent flaws of social media that has been criticized since its rise to popularity is its tendency to harbor jealousy towards others. Whether it is in the form of material objects such as wealth and body physique or mental conceptions such as status, social media provides the perfect breeding grounds for one to idealize their life and lead to increased dissatisfaction with one's actual life. Body image ultimately is the idea of how an individual feels towards their own physical appearance. Body functionality on the other hand refers to the process of everything the body can do, including internal processes, physical abilities, bodily senses and communication with others (Alleva et al., 2021). The way that one views their own body, however, is a more complex psychological idea that involves self esteem and goes beyond body functionality and rather into the idea of confidence towards oneself.

In the digital age, platforms like Instagram and TikTok have reshaped body image concerns, which often leads to psychological distress and body dissatisfaction. A 2021 study focusing on social media use and body image disorders highlighted the clear association between

frequency of body comparison on social media to body dissatisfaction and the drive for thinness. In the study, 1331 subjects, aged 15 to 35, were interviewed about their use of social media and later self-evaluated themselves, paralleling symptoms of eating disorders and confidence in their own bodies. The questions framed eating and gaining weight in a negative light, reinforcing the harmful social media stigma that thinness is key to happiness over self acceptance. After analyzing the data, it was found that subjects who more often compared their physical appearance to that of idealized images had a higher yearning for thinness, with responses leaning towards eating disorders such as anorexia and bulimia, making up 41% of the case study (Jiotsa et al., 2021). The study shows a clear link between body perception and social media usage, which presents a clear and present danger as social media presence continues to grow and an entire generation is being raised with the thought of posting and scrolling constantly ingrained in their minds.

Social Comparison:

Social comparison, the idea of comparing between oneself and others around them, is a fundamental driving factor in influencing people's judgements, experiences and behavior (Crusius et al., 2022). While the inherent purpose of social media is to create connection between individuals, it also inadvertently promotes the subconscious engagement in social comparisons.Whether people intentionally receive information about how others are, what others are capable of doing or what others have achieved, they are still inclined to relate this information to themselves (Dunning & Hayes, 1996). Existing research presents associations between social media use and social connectedness, especially among the younger generation. The purpose of the media to engage with others, either through direct messaging or posting or consuming content, makes it integral to youth culture (Winstone et al., 2021). It makes other's

activities and status plenty accessible, resulting in social comparison. The dynamics of social comparison in the media are especially impactful in the context of body image. At times, judging oneself compared to more “attractive” or “fit” body types can inspire motivation towards healthier and improved behaviors. However, more often than not, the comparisons lead to low self-esteem and distorted body image, causing many to turn to unwanted behaviors to attain a certain goal (Morrison, 2004). With the unrealistic and unattainable beauty and fitness standards magnified by social media, platforms that exacerbate these conceptual goals especially impact young and impressionable audiences. Factoring in desire for a larger audience, many modern influencers turn to extorting these insecurities to promote their own “healthy” lifestyles and gain millions of followers as well as brand deals to further their agenda.

Athletic Supplements:

Athletic supplements have quickly become an integral part of fitness and sports performance, with increasing popularity amongst both professional athletes and recreational gym users. These supplements can range from protein powders to performance enhancers such as creatine and pre-workout formulas that target improving strength, endurance and recovery. The main function of these athletic supplements is to support the physiological processes of the body to enhance physical performance and muscle growth.

One of the most widely used supplements is protein powder. Protein is not only necessary for enhanced muscle growth, but is vital for a healthy immune system and required for organs to function properly (Gelsomin, 2020). Several studies show that protein consumption after a workout gives great benefits in increasing protein synthesis and muscle hypertrophy (JD et. al, 2010). As a result, the popularity of protein powders have become widely available, the industry generating a total revenue of $2,069.3 million in 2021 (Patel et al, 2023). While these

supplements more often than not affect the body positively, studies observing long term effects of overconsumption of protein powders simultaneously show negative effects that contribute to the development of kidney disease due to the hyperfiltration of the powders into the system (Patel et al, 2023).

Another athletic supplement that is readily gaining popularity is creatine. Creatine monohydrate works by increasing the phosphocreatine ratio in muscles, improving the rapid regeneration of adenosine triphosphate (ATP), which is the body's primary source of energy. The result is enhanced power output, endurance, and muscle recovery. The greater increase in lean mass after using creatine is mainly attributed to water retention in muscle tissue. The osmotic pressure following the increase in creatine results in muscle cell swelling, which stimulates cell growth and results in muscle growth in turn. (Wu et al, 2022). One key aspect of creatine that is important to remember is that it is produced endogenously, or within the body, naturally at a rate of 1-2 grams per day (Cooper et al, 2012). The remainder of creatine is obtained through the diet. However, some athletes and bodybuilders turn to supplements to increase their creatine intake and maximize the benefits. In the "loading phase," users take 20-25 grams of creatine daily for 5-7 days to rapidly saturate muscle creatine stores, later lowering the maintenance dose to 3-5 grams daily. While creatine supplements have been available as early as the 1990s, the emergence of a fitness community has pushed the supplement to a wider audience generating a market size of 478.75 USD in 2023 (GMI, 2023).

Due to the heavier increase in the naturally occurring compound to artificial levels, there have been multiple studies conducted to verify the safety of the supplement. A 2003 study studied the effects of long-term creatine usage over the course of 21 months among a panel of 98 Division I college football players. The subjects mimicked the "loading phase" and then

continued to ingest 5g/day of creatine for 21 months of training. Comparing these athletes to those who did not take creatine in the same time span, their univariate analysis showed no markers of different health status between the two, supporting the idea that long-term creatine supplementation does not greatly alter baseline health status (Kreider et al, 2003). However there have been reports of gastrointestinal disturbances and muscle cramps due to dehydration from creatine water retention, but are mostly from personal accounts, not thorough research (Poortmans and Francaux, 2000). A vast majority of studies have confirmed the safety of the substance on healthy individuals if used properly and within the proper dosages.

Anabolic Steroids:

Anabolic-androgenic steroids, often shortened to “anabolic steroids” or “steroids,” are the best-studied class of appearance and performance enhancing drugs (APEDs). APEDs such as trenbolone acetate and ibutamoren are synthetic substances that mimic the male sex hormone, testosterone. They are meant to promote the growth of skeletal muscle, harnessing anabolic effects, and the development of male sexual characteristics, which mirror androgenic effects (NIH). Anabolic steroids travel through the bloodstream to the muscles, where they then bind to an androgen receptor, which is a protein that binds to male hormones. Androgen receptors play a key role in male sexual development and function, quickly stimulating protein synthesis and interacting with the cell’s DNA at a more rapid pace (Carter, 2023).

Some uses of steroids are commonly implemented in medical treatments to support conditions that lead to muscle loss, such as cancer and stage 3 HIV or AIDS (Carter, 2023). However, the prevalence of illegal AAS abuse has readily been increasing within the fitness community and resistance training in order to fast-track progress and muscle growth. While anabolic steroid use is legal with a prescription, illegal nonprescription doses are often 10 to 100

times higher than the doses provided for healthcare purposes (Cleveland Clinic, 2023). There are a variety of methods that users ingest the steroids. “Cycling” refers to the process of taking AAS for a period of time then taking a rest period before starting again, while “stacking” is when users combine usage of multiple anabolic steroids, believing that they make the steroids work better. The combination of the two, “pyramiding” refers to the process of taking a low dose of multiple steroids then increasing the dosage over time in a cyclic pattern (NHS, 2022).

Due to the rising popularity and dangerous nature of anabolic steroids, there has been significant research conducted to investigate its side effects and harms. Among the approximate 3 to 4 million Americans who use AAS to increase muscle mass, 30% develop dependence, where usage is continued even after negative physical, psychological or functional effects are demonstrated (Shareef et al., 2023). Beyond a psychological dependence on the dangerous steroids, misuse of AAS also causes tangible physiological effects. AAS abuse causes hypogonadism, which negatively affects the reproductive system even after the discontinuation of the substance. Hypogonadism results in lower levels of sex hormones, low sperm count, small testes and high hemoglobin values (Shareef et al., 2023). Misuse also causes emotional and psychological determinants as well. Past research has shown a strong correlation between high aggression levels and steroid usage. A study by Harvard Medical School psychiatrist, Harrison Pope, MD in 2000 confirmed that high doses of AAS increased aggression even in men who were not bodybuilders. Factoring in an entirely new generation of younger bodybuilders who are beginning to rely on steroid usage for muscle mass increase, the negative effects become amplified. In 1996, a study under the National Institute on Drug Abuse studied the effects of high doses of AAS in adolescent hamsters. The use of AAS decreased the amount of serotonin in the brain, a neurotransmitter that inhibits aggression. It also simultaneously increased the amount of

vasopressin, a transmitter that conversely increases aggression. The head of the study, Melloni, shares his concern for the growing landscape of AAS usage, “One of the things that is really at the crux of the issue here is that kids are using these things at very high doses . . . That population is at great risk for aggressive outbursts because they’re stimulating . . . steroid signaling pathways during a time when aggression circuits in the brain are at their most vulnerable” (Melloni and Ferris, 1996). While research done on human adolescents is rare due to moral and ethical limitations, the findings from animal studies parallel the inevitable psychological effects of AAS abuse in humans.

**Methodology**

To explore this question of the correlation between social media and the teen obsession with supplement and steroid usage, an online survey and interviews were utilized. The procedures for this study were cleared by an Internal Review Board and determined to be both ethical and moral. Participants in the survey were mainly high school students ranging from ages 16-18. Interviews were then further conducted and recorded with consent from a variety of subjects from the survey that represented different areas of the spectrum in terms of both social media usage and exposure to the fitness community or physical health.

By interviewing a generation that has completely been raised in the digital age, it is possible to grasp a better understanding of how the media has warped teenage perception of their bodies and their own self confidence. It was also necessary to gain insight from past generations that also emphasized fitness, but lacked the social media aspect that is being studied today. By comparing the results of the two groups, the data can be applied into figuring out social media's unique role in promoting supplement and AAS usage. Moreover, due to the nature of this experiment, it is invaluable to obtain information from a wide range of subjects as each

individual has their own relationship to fitness and their own body image. It was also imperative to gather information from professionals in the medical field who hold a relatively high level of physiological knowledge and have been able to actively witness the impacts of steroid misuse on growing teens in the present.

Participants were gathered in various ways. For the survey, flyers were posted in multiple locations to generate various target audiences. To attract an audience who was active in the fitness community, multiple flyers were placed in local gyms (See Appendix A). The survey was also passed out to high school students from various high schools to collect a wide variety of diverse students in terms of fitness experience and exposure to social media. The participants ranged from little to no experience in lifting or fitness to ones who have had exposure to the community for years. Through getting opinions and thoughts from both ends of the spectrum, it was possible to reasonably assess the impact of social media on body image and how its influence has shifted over the years. From these participants, a select few were then chosen to be interviewed in more detail to gain a psychological insight into their thought process and headspace. These participants were chosen based on their fitness level as well as their social media usage. By interviewing individuals who all had a unique relationship to their body image and exposure to fitness culture, data could be collected from their testimonies. Some had never even heard of the term “anabolic steroid” while others had a deep knowledge of distinct categories of AAS and the methodology behind its intake. The participants were also encouraged to help spread the survey to others who were interested in participating.

Survey

When beginning the survey, participants were given an informed consent form. This was in order to notify that the participation was completely voluntary and inputting personal data was

completely optional and that they may stop taking the survey at any time. To proceed with the survey, all participants had to respond yes to the informed consent formed in order to make sure they were fully aware of the data being collected.

To gather the participant demographics, they were then asked their age and gender. Gathering age and gender was an important step in understanding where the individual stood in terms of understanding where the individual stood in terms of their background and potential influences on their experiences with the fitness community. Age can provide valuable insight into generation differences in attitudes towards fitness, body image and supplement use, while gender can help identify patterns in the same patterns but amongst different genders and how they vary with one another.

Participants were then asked what social media platforms they used and how much time they spent on it to gather their exposure to the media. The participants were then asked about their experience with fitness, including questions that centered around involvement in sports as well as time spent in the gym. By gathering information about these two aspects, it provided necessary background information on the participant and where they might fall in the range of subjects. Questions were also asked about the participant's knowledge with supplements and AAS, providing a list of different variations of each to determine their exposure to the topic.

In order to gain a deeper insight between the connection of social media and fitness culture, a series of questions were then asked that related the two (See Appendix B for Survey Questions). For example, questions were asked about the presence fitness influencers online as well as how the media affected body image. Some questions were also heavily focused around the participants' own personal opinions on if their exposure to social media and influencers had

swayed their own personal beliefs and if they encouraged usage of supplements or steroids without proper education of its risks.

Participants were finally asked if they would be willing to participate in an interview to ask questions at a more personal level. Those who responded yes were to provide a regularly checked email address, while those who responded no were not required to provide a personal email address (See Appendix C for Interview Email).

Interviews

Interviews expanded on questions asked in the survey and allowed participants to provide their own opinions in more detail on the topic. The ability to gather data one on one between the interviewer and the subject allowed for a more personal aspect of the study compared to a focus group with multiple participants sharing at once. It also prevented the subject's responses from being altered by opinions of others around the participant. Gathering a participant's truthful and honest answer was vital in gathering accurate data especially when concerned with the psychological aspect of the data. It also allowed for each interviewer to share their own personal opinions on the subject in topics that were not covered within the survey. Some participants were asked unique follow up questions that were tailored to their specific responses. The interviewees also ranged from a broad spectrum of fitness experience, generational age as well as exposure to social media exposure. While some participants did not participate in any physical activity and limited their exposure to social media, others had been involved in the fitness community for years and were regularly surrounded by those who refer to themselves as "body-builders" or other's who are passionate about powerlifting or physical activities. All Interviews however began with the same line of questioning: "How do you feel that social media has served as an enabler to the recent obsession surrounding teenagers and the use of supplements and athletic

performance enhancers?" By beginning the interview with the fundamental research question of the study, it was possible for the participant to understand the full scope of the research as well as offer their own personal insight on the topic and allow them to share their opinion without any limitations from the range of the question.

**Results**

Survey Results:

In total, the survey received 59 responses, gathered from a variety of sources. In terms of demographics reached, 17 participants did not participate in regular physical activity while the remaining often engaged in their own individual sports, either team sports or body building. Regardless of doing sports or not, 42.9% of participants reported not spending any time in the gym per week. In terms of social media exposure, 59.6% of participants spent 2-4 hours each day on social media per day. The media platforms consisted of Snapchat, Tiktok, Instagram, Facebook and Twitter, with an overwhelming majority of participants using Instagram and Tiktok as their main choice of platform. Among the responders, there were 12 (21.1%) who reported using 1 hour or less of social media. The age of participants also ranged from 14-18, which was the targeted age range when examining how social media affects adolescents actions and ideas.

The strongest agreement shown in the data was the question of, "How heavily do you believe social media influences body image?" Participants were asked to rank the influence between 1-10 with 10 being the highest influence (Table #1). The negatively skewed data showed that an overwhelming amount of them believed that social media affects body image to a high extent. Over 50% answered this question with numbers between 8-10. Subjects were also asked to rank how confident they were in their own body image with 1 being extremely insecure

and 10 being exceedingly confident. While a small majority of 21% ranked their body confidence at an 8 or higher, the other 79% fell between the ranges of 2 and 7 (Table #2).

TABLE #1:

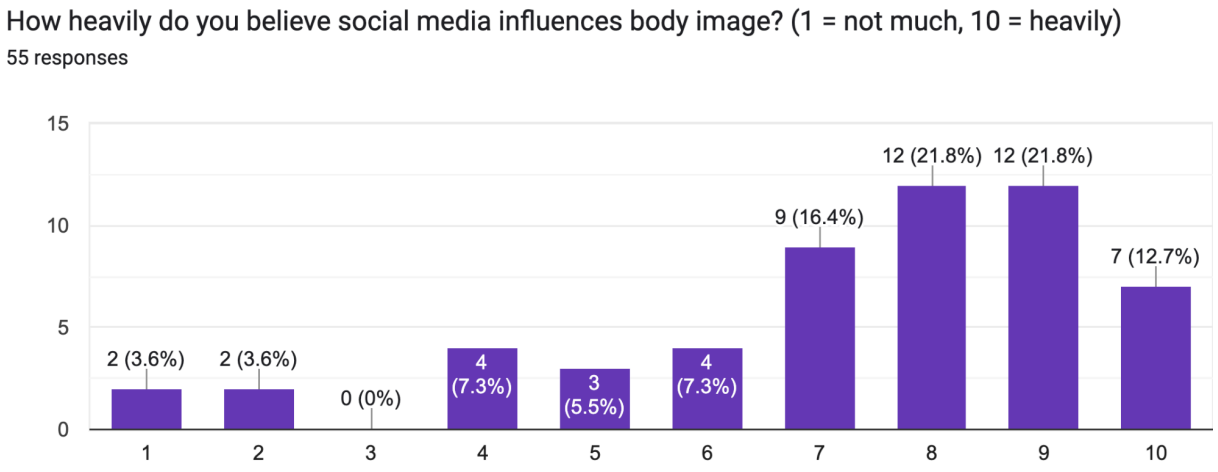
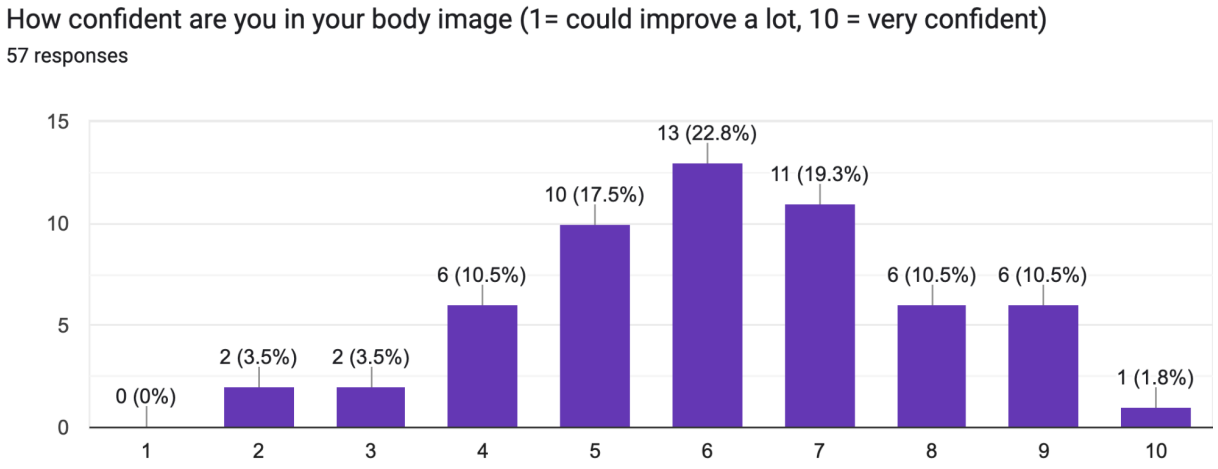


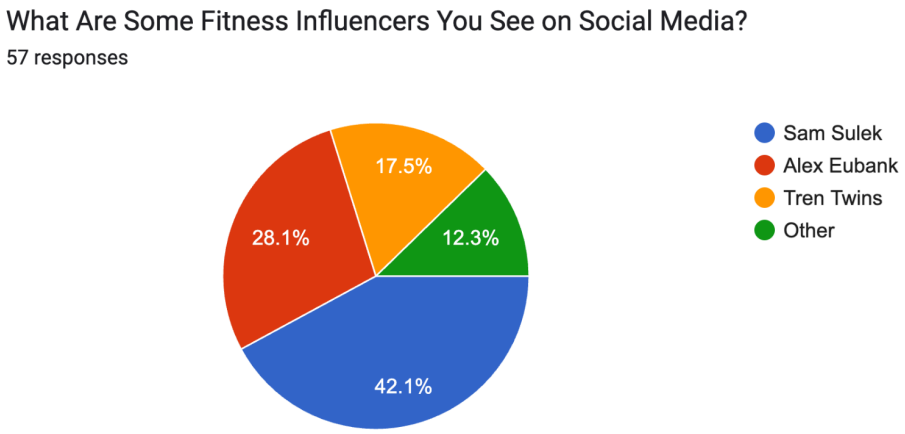

TABLE #2:




Participants were also asked, “What are some fitness influencers that you often see on social media?” (See Appendix B for Survey Questions). While some responded with “none”,

these responders often did not associate themselves with regular physical activity. Others responded with prominent figures such as Sam Sulek, Alex Eubank, the Tren Twins and some other figures (TABLE #3). The most recognized figure was Sam Sulek, a bodybuilder influencer who has amassed 6.7 million followers since his rise to fame in 2023.

TABLE #3:




Interview Results:

While a total of 12 participants offered to be interviewed for further analysis, two were chosen. Both interviews were conducted in person. Each interview was around 20 minutes, with the same basic questions being asked to respondents. Unique follow up questions were also asked to each individual in order to gain more in depth insight. Each interview was also consensually recorded for transcription purposes (See Appendix D). One participant was a 64 year old man who was extremely active as a teenager, participating in two varsity sports and often lifting or bodybuilding. The other participant was a 16 year old male high school student who is actively involved in body building. The goal of the interview was to highlight the stark contrast between two generations of fitness culture.

## Discussion

Survey Analysis:

By observing the differences between those who spend significant time in the gym, it is possible to analyze how social media uniquely affects ideas of body image and supplement usage. There has been a recent spike of fitness influencers on TikTok and Instagram, the two apps that were used by a majority of participants. Among the responders, there was also a representation of those who did not regularly use social media and thus, their behavior regarding supplement intake would not be affected to the same extent.

The survey data reveals a strong correlation between social media engagement and the increasing obsession with supplements and steroids within the fitness communities. An overwhelming majority of participants ranked social media's influence in terms of body image to a high extent confirming that social media has a strong effect in how adolescents view their body image (TABLE #1). The results from the body confidence and the social media question were strongly correlated. Responders who reported using more than 2 hours of social media per day were 87% more likely to rank their body confidence at 6 or lower compared to those who used social media for less than an hour each day. This highlights how social media platforms, particularly Instagram and TikTok, perpetuate unrealistic body standards, causing insecurities and the driving factors of social comparison theory.

While this data further reinforces how social media negatively affects body image, a key finding from the survey is how social media affects consumer behavior in regards to supplement and AAS usage. One of the major questions of this study focuses on how the fitness community has shifted in recent years to glorify and idolize steroid usage. To fully understand its impact, it is necessary to understand those who are behind the increase of exposure: namely the “influencers”

who indirectly or directly saturate consumers' feeds with content of supplements and AAS. The results of the survey provided names of multiple well known figures across the media. While each influencer has their own individual following and content production, 100% of the survey responders named at least one influencer who was a known user of AAS, the most named being Sam Sulek (TABLE #3). In April of 2024, he subtly confirmed the use of steroids, supporting the concept that modern fitness idols surround AAS usage. With fitness role models such as Sulek and Eubank, a new generation of teenagers are being raised with a dangerous mindset that the method to achieving a similar build lies in external supplementation.

Interview Analysis:

The process of thematic analysis was done to explore the second part of the research question in regards to: What caused the recent spike in the obsession with external supplementation and athletic performance enhancers?

After interviewing the older generation bodybuilder, it was clear that in previous generations, fitness was mainly tied to ideals of sports and physical activity. While the older participant started lifting to further his football career, the 16 year old began lifting because of social media influence, “Seeing these influencers online at such a young age who had these insane builds kind of pushed me to do the same.” The correlation between social media and behavioral shifts confirms the interconnectedness of social comparison theory and its relevance to the study.

Current and past fitness “influencers” are another factor that contribute to the generational gap between the two. Previously, fitness inspiration lay in figures like Arnold Schewarzenegger, a professional bodybuilder and a Hollywood action hero. Exposure to figures like Schewarzenegger were limited to occasional monthly fitness magazine articles or word of mouth.

Compared to today, where there is a constant bombardment of information and new influencers rising to stardom each day, the exposure to fitness media is vastly different between the two generations. The accessibility of information is both social media's greatest strength and weakness. Analyzing experience from the 16 year old bodybuilder interviewed reveals how social media has shaped his growth as an athlete and person. He started working out at 14 and quickly noticed that discussions about creatine, supplements and even steroids were common among his peers. He specifically mentioned the buzz in the fitness community surrounding influencers such as Alex Eubank and Sam Sulek, which is consistent with survey results. As he stated, "It's like if you're not gaining fast, you're falling behind." This quote is a perfect representation of the environment social media fosters: One obsessed with constant progress no matter the means to do it. This places adolescents in a dangerous position. While previously AAS purchase was difficult and risky, the emergence of online marketing has created an environment where within 20 minutes, any teenager with access to a laptop can find a full cycle of AAS administration often for less than 200 dollars.

Conclusion:

Social media serves as a significant enabler—if not the most influential factor—behind the recent and alarming obsession among teenagers with nutritional and athletic performance enhancers, including supplements and anabolic steroids. Through both quantitative and qualitative data collected in this study, a clear correlation emerges between high social media engagement and lowered body confidence, distorted body image, and increased willingness to consider or consume external substances in pursuit of an idealized physique. As these influencers dominate adolescent digital spaces, they subtly and sometimes explicitly normalize supplement and AAS usage as not only acceptable, but essential for achieving physical goals.

The generational comparison between past and current fitness culture confirms how the digital age has accelerated exposure and pressure. Unlike previous decades, where fitness icons were few and mostly inaccessible, today's youth are constantly bombarded with hyper-idealized content that promotes rapid transformation over long-term health. Interviews and survey data further show that teenagers are internalizing these expectations and engaging in supplement consumption at a younger age—often without proper education on their risks or necessity. Social media has created an environment where slow or natural progress is viewed as failure, and supplementation is viewed not as a choice, but a requirement to keep up.

In answering the central research question, this study concludes that social media influence extends beyond mere exposure—it reshapes perceptions, drives behavioral changes, and perpetuates a culture of comparison and perfection that places adolescent health at serious risk.

Limitations and Future Research:

A potential limitation of these findings is the population size of the study. Due to limited motivation and time, 59 participants as a sample size is not enough to generalize findings of the study to a broader population. However, it is still enough information to gain a surface level understanding of how local high school students might react towards fitness culture. Another limitation is imposed by participant honesty and willingness. The primary receivers of this study are teenage males. Due to stigma surrounding mental health as well as negativity in regards to AAS usage, participants may have been hesitant to share their true feelings, even with the survey being anonymous. Questions about body image and body confidence are also sensitive and personal topics that may result in not all data being completely truthful to one's true feelings.

However, future research can be conducted to both confirm and expand upon the study's results. Specific influencer and consumer relations from social media platforms would be extremely helpful in gaining a more statistical insight on consumer behavior. Due to apps such as TikTok and Instagram being privately owned, this data is not available to the public. However, taking proper action, future researchers can see the tangible correlation between how much watching a certain video convinces a buyer to purchase it. The ability to see what percentage of viewers on a video end up purchasing a supplement can further support the claim that there is in fact a direct relationship. The survey and interview questions can also be distributed to a national audience rather than local high schools to observe if the same patterns persist across the country.

Works Cited

Al Shareef, S. (2023, June 20). *Anabolic steroid use disorder*. StatPearls [Internet]. https://www.ncbi.nlm.nih.gov/books/NBK538174/

CF, M. R. (n.d.). *Adolescent anabolic steroid use and aggressive behavior in golden hamsters*. Annals of the New York Academy of Sciences. https://pubmed.ncbi.nlm.nih.gov/8853620/

Cooper, R., Naclerio, F., Allgrove, J., & Jimenez, A. (2012, July 20). *Creatine supplementation with specific view to exercise/sports performance: An update*. Journal of the International Society of Sports Nutrition. https://pmc.ncbi.nlm.nih.gov/articles/PMC3407788/

Jiotsa, B., Naccache, B., Duval, M., Rocher, B., & Grall-Bronnec, M. (2021, March 11). *Social media use and body image disorders: Association between frequency of comparing one's own physical appearance to that of people being followed on social media and body dissatisfaction and drive for thinness*. International journal of environmental research and public health. https://pmc.ncbi.nlm.nih.gov/articles/PMC8001450/#:~:text=(3)%20Results%3A%20We%20found,relationship%2C%20while%20BMI%20was%20not.

Kendra Cherry, Mse. (2024, May 21). *How social comparison theory influences our views on ourselves*. Verywell Mind. https://www.verywellmind.com/what-is-the-social-comparison-process-2795872

M;, P. J. (n.d.). *Adverse effects of creatine supplementation: Fact or fiction?*. Sports medicine (Auckland, N.Z.). https://pubmed.ncbi.nlm.nih.gov/10999421/

MA;, M. T. R. (n.d.). *Body-image evaluation and body-image investment among adolescents: A test of sociocultural and social comparison theories*. Adolescence. https://pubmed.ncbi.nlm.nih.gov/15673231/

Merino M;Tornero-Aguilera JF;Rubio-Zarapuz A;Villanueva-Tobaldo CV;Martín-Rodríguez A;Clemente-Suárez VJ; (n.d.). *Body perceptions and psychological well-being: A review of the impact of social media and physical measurements on self-esteem and mental health with a focus on body image satisfaction and its relationship with cultural and gender factors*. Healthcare (Basel, Switzerland). https://pubmed.ncbi.nlm.nih.gov/39057539/

Merino, M., Tornero-Aguilera, J. F., Rubio-Zarapuz, A., Villanueva-Tobaldo, C. V., Martín-Rodríguez, A., & Clemente-Suárez, V. J. (2024, July 12). *Body perceptions and psychological well-being: A review of the impact of social media and physical measurements on self-esteem and mental health with a focus on body image satisfaction and its relationship with cultural and gender factors*. Healthcare (Basel, Switzerland). https://pmc.ncbi.nlm.nih.gov/articles/PMC11276240/#B19-healthcare-12-01396

Ruiz, R. M., Alfonso-Fuertes, I., & Vives, S. G. (2022, September 1). *Impact of social media on self-esteem and body image among young adults: European Psychiatry*. Cambridge Core. https://www.cambridge.org/core/journals/european-psychiatry/article/impact-of-social-media-on-selfesteem-and-body-image-among-young-adults/D0385652A27F160C752E5FD69608DEF2?utm_source

Winstone, L., Mars, B., Haworth, C. M. A., & Kidger, J. (2021, September 24). *Social media use and social connectedness among adolescents in the United Kingdom: A qualitative*

*exploration of displacement and stimulation - BMC public health*. BioMed Central. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11802-9

## APPENDICES

**Appendix A:** Recruitment Flyer


**Appendix B:** Survey Questions

**Demographics**

1. Age? _____
2. Gender? _____

**Social Media Usage**

1. What social media platform do you use?
    - Snapchat
    - Tiktok
    - Instagram
    - Facebook
    - Twitter
2. How much time do you spend on social media per day?
    - 1 hour or less
    - 2-4 hours
    - 4-6 hours
    - 6-8 hours

**Athletic Experience**

1. Do you do any sports? If yes, which ones? _____
2. How often do you spend time in the gym per week?
    - None
    - 1-2 times per week
    - 2-4 times per week
    - 4-7 times per week
3. What are some fitness influencers that you often see on social media?

    _____
4. Which supplements have you heard of?

- Whey protein
- Creatine
- Ashwagandha
- Glutamine
- Magnesium
- Fish oil
- Pre-workout
- Other

5. Which steroids have you heard of?
    - Trenbolone
    - MK-677
    - Human Growth Hormones
    - Testosterone
6. Do you take any nutritional supplements?
    - Yes
    - No
7. If so, which?

    _____

8. If you take supplements, are you happy with the results?
    - Yes
    - No
9. If you take supplements, what age did you start taking supplements?

_____

10. If you take supplements, what influenced you the most at the start?
    - Social Media / Influencers
    - Friends
    - News/Self Research
    - Other
11. Do you take steroids?
    - Yes
    - No
12. If yes, which steroids?

    _____
13. If you take steroids, when did you start?

    _____
14. If you take steroids, what influenced you most to start taking them?
    - Social media / Influencers
    - Friends
    - News / Self Research
15. Do you know any people around you who take supplements / steroids?
    - Yes
    - No
16. If so, which do they take?

    _____

**Social Media Impacts**

1. How confident are you in your body image? (1 = could improve a lot, 10 = very confident)

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

2. How often do you see fitness related content on social media? (1 = not much, 10 = very much)

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

3. How often do you see fitness content creators pushing supplements? (1-10)

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

4. How often do you see fitness content creators mentioning steroids? (1-10)

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

5. How often do you see creators educating their audience about the risks of steroid usage?

1 2 3 4 5 6 7 8 9 10

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

6. Have you ever felt influenced to purchase supplements because of influencers online
    - Yes
    - No

7. If yes, which supplements?

   _____

8. What are some risks of steroid usage? (if you don't know, say N/A)

   _____

9. How heavily do you believe social media influences body image? (1 = not much, 10 = heavily)

   _____

**Appendix C:** Email Template for Interview Scheduling

Hello!

I am emailing you regarding a survey that you recently took concerning social media and its influence on supplement usage as well as consumer behavior. When asked if you were open to participating in an interview, you answered yes and provided me with this email. If you are still willing to be interviewed, I would love to schedule it as soon as possible.

The interview is aimed to build upon questions asked in the survey to answer the research study question of, "To what extent does social media serve as an enabler to the recent unhealthy obsession surrounding teenagers and the use of nutritional and athletic performance enhancers and supplements and its sudden spike of usage?"

Please let me know what days and times work best for you! If you have any questions feel free to reach out.

Thank you for your participation!

My name

**Appendix D:** Interview Transcripts

*Note: Bold font corresponds to the interviewer asking questions Normal font corresponds to the subject.*

Interview #1:

**How old are you?**

I'm 64.

**Okay. How active were you as a kid? Like, did you do any sports or like workout?**

Uh, football, wrestling. A little basketball, lifting a lot of weights.

**So, why did you start working out, like lifting weights? Were there any external factors that caused pressure?**

At that time I started lifting weights when I started playing football to get stronger for football. And then continued past high school lifting weights.

**So, what was gym culture like when you were younger? Were there any, like people that you looked up to in terms of like build, physical build, or was it mainly just like getting stronger for focus?**

I mean, there were guys like Arnold and other people. At that time we all looked at each other and said, “this is what we wanted”. We didn't know that that was a stupid way to look.. But yeah, Arnold was the big one at the time. Yeah. Franco Columbu. Columbu. Yeah.

**So did these people like Arnold Schwartzenegger or did anyone around you during football kind of pressure you to take supplements or like steroids to fast track your progress?**

Well back then taking steroids wasn't a big deal when I was coming up through it. Later on, I knew a bunch of guys that did it, but at the time in high school we weren't we weren't using. I didn't know anybody on our team that used steroids.

**Did you feel any pressure, like from seeing the builds of Arnold Schwarzzenegger?**

No, because we actually thought at that time he was natural. We didn't know, but um there was kind of pressure to do like, um protein powers and stuff

**What besides protein powder, what other actions did you take to reach your fitness?**

Yeah. just worked out heavily and um that was about it.

**And kind of like what shaped your fitness goals? like, was it like teammates like because you guys don't really have social media?**

Yeah teammates mainly.

**How present are you on social media now?**

Fairly. I mean, I'm on Instagram, Facebook. Oh, TikTok. Yeah. Snapchat.

**Okay. um, do you think that social media has shaped how younger generations view themselves at the gym?**

Yup.

**Like, in what ways?**

Yeah. it has given more of a comic book view of what lifting is and what you should look like.

**And how do you think it's different from when you were a kid?**

Ours, it was just a muscle magazine, so it was just like pictures of actual like, Mr. Olympic and all those kinds of things. It was pictures that only came out once a month. It wasn't like a constant bombardment.

**So, like you think with muscle magazines and stuff, it was more transparent with like, oh, these people are professional athletes and like, it's probably not realistic for a high schooler to reach these guys.**

We all thought we were gonna look like Arnold, but the reality was not gonna happen.

**And then, are you aware of the supplement and steroid usage in the gym community, like in the present?**

Yeah.

**What do you think contributed to that?**

Um well, it's been growing since I mean, right after high school, I knew guys that were starting to use and whatnot. And now I think there's too many people that think just taking steroids will make them big, instead of the fact that there's still a lot of work to do, and you have to put the work in. So I think it's kind of an easy out, and they see these people on TikTok, making videos, and I think that's pushing it even more nowadays. I mean, there are more kids here who know the names of all the different steroids to take.

**Do you have any last thoughts that you would like to leave? My project is about how social media normalizes the use of supplements and steroids.**

I mean, there there's some supplements that are okay, but the other ones aren't and a lot of supplement companies are kind of a rip off too. They're pushing them. They're paying some of these influencers. They're, you know, pushing their products. and then with the amount of steroids available fairly easily, especially where we live. um, I think it puts a lot of undue pressure on young people to get that giant shape.

**Okay, that's it. Thank you.**

Interview #2:

**Hello, how old are you?**

I'm 16 years old.

**Do you play any sports?**

No other than the gym no.

**What kind of time did you start working out?**

When I was 14.

**What convinced you to start working out at such a young age?**

Seeing these influencers online at such a young age who had these insane builds kind of pushed me to do the same.

**Okay, as someone who is actively involved in the gym community, what do you know about supplements and anabolic androgenic steroids?**

I know that um supplements can really help push your physique to the best capability, but I know that steroids are wrong.

**Do you know people in the community that are on steroids or um like on multiple steroids?**

I do, yes.

**Have you seen how it's impacted them as people in their personalities?**

Yeah I mean I've seen their build change for sure. More subtle personality changes but I have noticed small changes.

**As somebody who is in the gym community um, how common do you think steroid usage is?**

I would say it's pretty rare, but extreme gym users usually use it.

**Are you on social media a lot?**

A bit.

**Would you say you're involved in the fitness community on social media? Like you see videos about lifting and like supplement pushing?**

Yes.

**Have you ever seen creators trying to push out supplement usage to get more followers?**

Yes.

**Have you ever seen social media members that are on steroids either explicitly or inexplicitly?**

Yes.

**What are some of these figures?**

Like Alex Eubank and Sam Sulk are on steroids.

**Do you think these figures have kind of shaped how a younger generation views bodybuilding?**

I think a lot of people look up to them and then they view themselves as like, not in the same way as them.

**How do you think the gym community has shifted in recent years because of social media?**

It's like if you're not gaining fast, you're falling behind.

**That's a very good analogy.**

Thank you.