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# Motivational Characteristics and Fulfillment of Psychological Needs Among Physically Active Undergraduate Students

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## Purpose

Identify and analyze how motivational characteristics, fulfillment of psychological needs, and individual experiences and beliefs influence physical activity (PA).

## Background

Over 50% of young adults, ages 18-24, have at least one coronary heart disease risk factor and nearly 25% have advanced atherosclerotic lesions. In 2017, the Centers for Disease Control and Prevention reported that 36% of 20-39 year olds were obese. Obesity rates continue to rise despite widespread public information and substantial research confirming physical activity (PA) plays a critical role in overall physical health. Further, research suggests young adulthood may be the best time to alter lifestyle habits (i.e, PA) as they are being established.

Research on correlates and determinants of PA has shown an association with age, sex, health status, self-efficacy, and motivation. Self Determination Theory (SDT) provides a framework for understanding motivation and, more specifically, motivation to perform PA. SDT defines three primary psychological needs: autonomy, competence, and relatedness. SDT differentiates types of motivation to better understand the varied effects on behavior.

This study focuses on a narrative approach to elucidate the experiences and beliefs of highly active undergraduate students ages 18-24. A narrative approach is used to collect their "movement stories" to eventually be used and studied as motivational tools in public health settings.

## Methods

Participants were recruited using nominated sampling and a public advertising campaign. Participants met International Physical Activity Questionnaire (IPAQ) scores defining moderate-vigorous physical activity. Informed by Self-Determination Theory (SDT), the Motives for Physical Activities Measure – Revised (MPAM-R) was used to assess motivational characteristics. The Basic Psychological Need Satisfaction and Frustration Scale – General Measure was used to assess fulfillment of psychological needs. In-person, semi-structured interviews were recorded and then transcribed. Investigators independently coded operationally-defined thematic statements then met to establish consensus for final codes.

## Results: Statistical Significance

**Interviews:** Qualitative analysis showed participants expressed higher life satisfaction (41) than frustration (19). Collectively, statements expressing motivation were most common for competence (60), relatedness (35), autonomy (34), and interest/enjoyment (34). The least commonly mentioned motivation types were appearance (8) and fitness (12).

**Surveys:** Satisfaction was a common characteristic among this sample population. Psychological needs were analyzed with the BPNSF survey. A Wilcoxon signed rank test revealed that psychological satisfaction was significantly greater than psychological frustration for each of the three psychological needs defined by SDT with a large effect size for each (Autonomy  $n = 20$ ,  $p = .05$ ,  $z = -3.89$ ,  $r = .87$ ; Competence  $n = 20$ ,  $p = .05$ ,  $z = -4.0$ ,  $r = .89$ ; Relatedness  $n = 20$ ,  $p = .05$ ,  $z = -3.90$ ,  $r = .87$ ). Motivational variables were analyzed with the MPAM-R, a 7-point scale, results were as follows: interest/enjoyment = 6.2, competence = 6.0, fitness = 6.0, appearance = 5.1, social = 3.9.

## Results: Participant Responses



### Relatedness & Psych Satisfaction

"A lot of that good feeling is part of being on a team, being with others, and feeling motivated. Also, being able to move and get endorphins in my brain helps me feel better."

### Psych Satisfaction

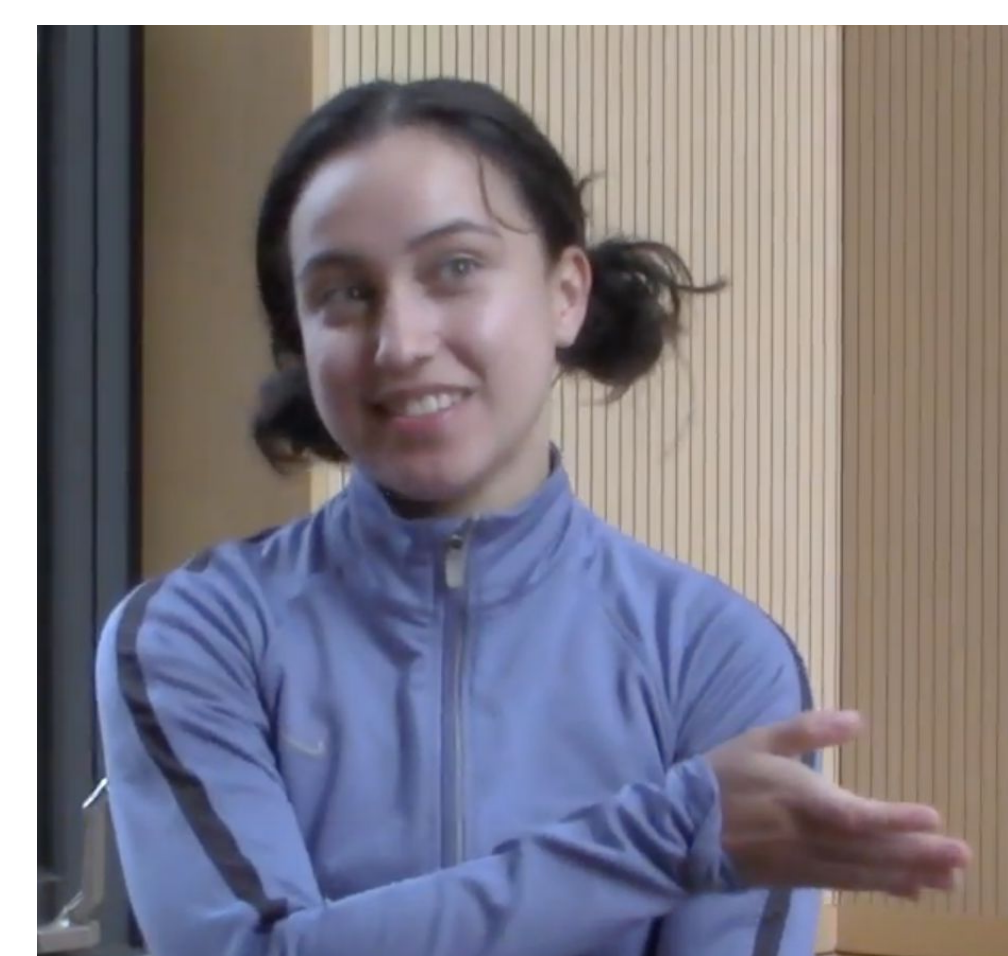
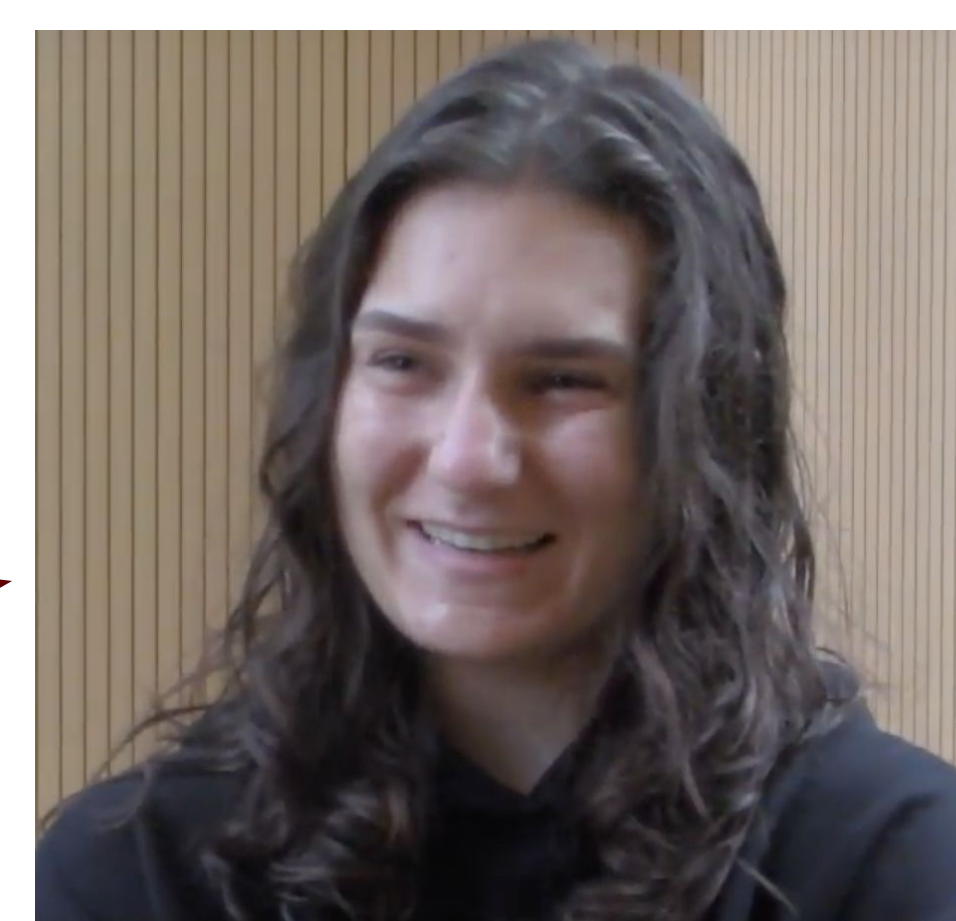
"Moving is what makes me feel better. Once I go out and do something, I feel happier."

### Competence & Psych Satisfaction

"I'm under stress constantly, so working out is time for my brain to forget or ignore my other responsibilities. I can just focus on the activity, honing the skill, and feeling good in the moment."

### Appearance

"Strong women are not prioritized even though that body type is arguably the most useful."



### Appearance

"I think the confidence I gained in college is correlated with going to the gym, and that includes the aesthetic part of it."

### Psych Satisfaction, Competence, & Appearance

"I feel more powerful and confident. I find beauty in strength."

### Psych Satisfaction

"It's a good way to clear the mind. It's hard to stress out about an assignment when you're passing a rugby ball and tackling."

### Relatedness

"We are friends with the other team. So, we will go hang out and have spaghetti and drinks after beating each other up playing rugby for 80 minutes."



### Autonomy

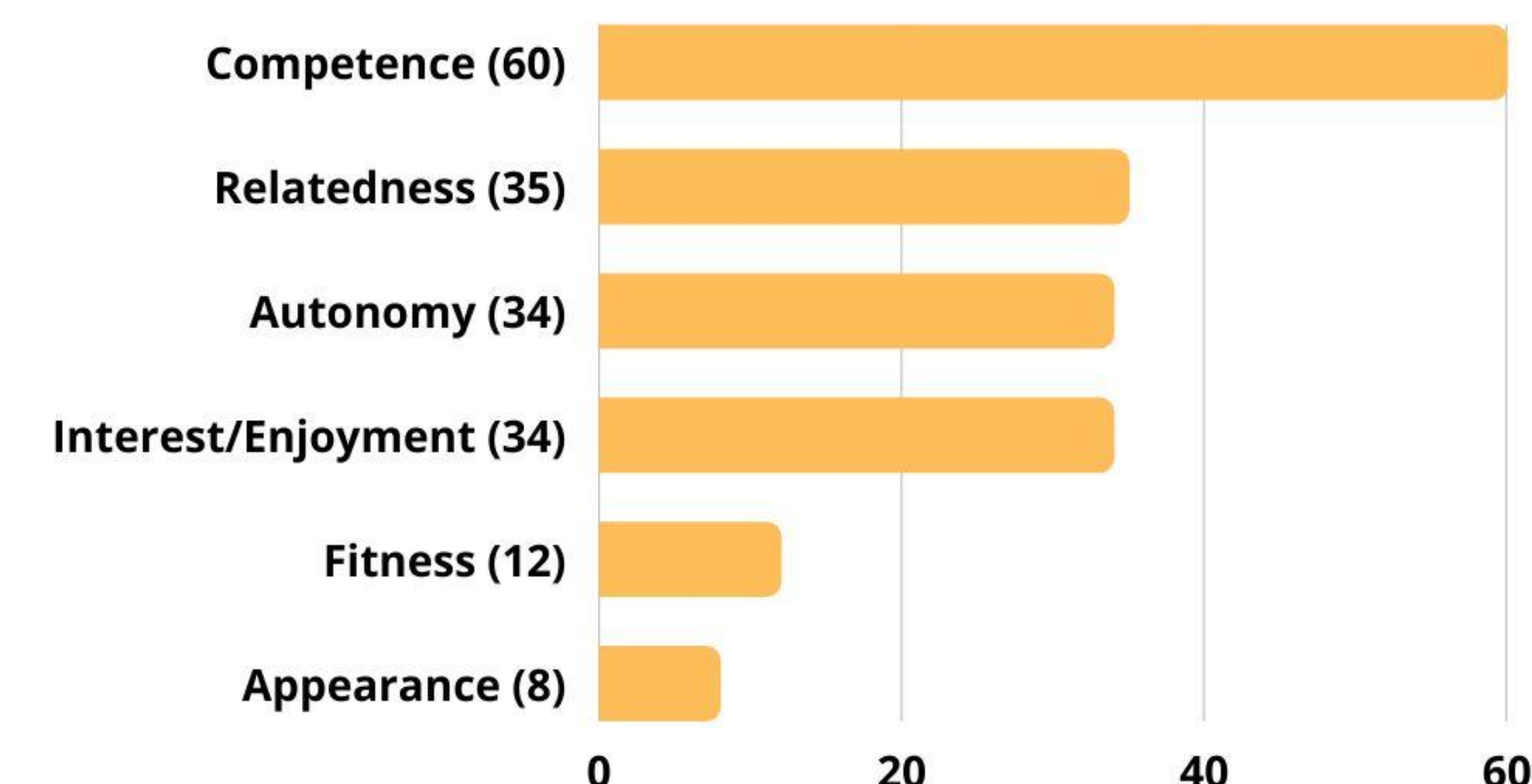
"Everything I do is completely of my own volition."

### Autonomy & Competence

"I didn't push my limits until I went to college. I used to do what I was good at until I became more independent and had a gym. Then, I could start learning new things and getting better at those."

## Results: Table

### Motivational Statements



## Discussion

### Psychological Satisfaction and Frustration

In surveys, participants report greater satisfaction than frustration across the three domains of basic psychological needs, which is consistent with past research that demonstrates PA increases well-being. In interviews, participants often express statements that interconnect psychological satisfaction with needs for competence, autonomy, relatedness, and interest/enjoyment.

### Motivation

Coded interviews reveal the prevailing needs for mastery of skills (competence), meaningful human interaction (relatedness), a sense of personal control (autonomy), and genuine joy in the activity (interest/enjoyment). These primary motivational factors are rarely discussed in the healthcare domain and larger culture. Rather, healthcare providers tell patients to exercise for the sake of being healthy (fitness), and the culture promotes exercise for sexual attractiveness (appearance). These are the least important motivational factors among our participants, which may explain why current messaging of PA is ineffective. Further, all participants expressed varying degrees of motivational factors, indicating the need for multiple approaches to and customization of messaging.

The considerable occurrence of competence may stem from the college context and student identity. College is a highly structured environment that increases competence in students through their acquisition of new knowledge and skills. In addition, most colleges promote competitive sports. All statements about competition are coded as competence. Lastly, the common theme of participation in weight-lifting is seen in the female participants. Their shared narrative of strength training as related to competence and autonomy strikingly contrasts previous generations of women.

## Conclusion

Clinicians may better promote PA in this population by demonstrating the tendency toward greater psychological satisfaction. A variety of motivational factors—competence, relatedness, autonomy, and interest/enjoyment—can be explored and tailored to patient-specific needs. Adjusting interventions to meet the inherent complexities of human motivation, experiences, and beliefs is likely necessary for increasing PA.