

## Perceived social pressures and the internalization of the mesomorphic ideal: The role of drive for muscularity and autonomy in physically active men

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Perceived Social Pressures and the Internalization of the Mesomorphic Ideal: The Role of Drive  
for Muscularity and Autonomy in Physically Active Men

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## Abstract

We examined if there were both direct and indirect relationships (via the drive for muscularity) between the perceived pressure to be muscular and internalization of the mesomorphic ideal, and if autonomy moderates these relationships in physically active men. A sample of 330 men, who were undergraduate students studying sport, completed the Behavioral Regulation in Exercise Questionnaire-2, the Mesomorphic Ideal Internalization Subscale of the revised male version Sociocultural Attitudes Towards Appearance Questionnaire, the Perceived Sociocultural Pressure Scale-Modified, and the Drive for Muscularity Scale Attitudes Subscale. Perceived pressure predicted internalization directly, and indirectly through the drive for muscularity. The direct relationship between pressure and internalization was weaker under higher levels of autonomy. The indirect path, via drive for muscularity, was stronger under higher levels of autonomy. These results provide insights into why men vary in the degree to which they internalize pressure to develop a mesomorphic ideal, supporting further examination of autonomy.

*Keywords:* Self-determination theory; Drive for muscularity; Internalization; Social pressure.

The Western ideal male physique has become increasingly large and muscular over the last 40 years (Pope, Phillips, & Olivardia, 2000) and is a prevalent socially-constructed image (Baghurst, Hollander, Nardella, & Haff, 2006), representing a standard to which some men aspire. In modern times, the ubiquity of the muscular ideal can be traced back to Charles Atlas's adverts beginning in the 1940s encouraging men to use his "dynamic tension" system to develop their bodies (Swami et al., 2013) and the publication of Eugene Sandow's (1897) *Strength and how to obtain it*. The influence of the mesomorphic ideal has been widespread, with research revealing the majority of young Western adult males wishing to increase their muscularity levels to attain the perceived social, sexual, and personal benefits associated with the physique (Munroe-Chandler, Kossert, & Loughead, 2012; Pope, Gruber, et al., 2000). The internalization of the mesomorphic ideal reflects the process of integrating muscular ideals into one's identity (Karazsia, van Dulmen, Wong, & Crowther, 2013). The internalization of the mesomorphic ideal for men has been identified as a key risk factor for a range of potentially unhealthy body image attitudes and body change behaviors, such as body dissatisfaction, muscle dysmorphia symptoms, restrictive dieting, engagement in social comparisons, intention to use steroids, and excessive exercise (Galito & Crowther, 2013; Karazasia & Crowther, 2010; Parent & Moradi, 2011; Vartanian, 2009). Given the ubiquity with which the mesomorphic ideal is present in society, it is unclear why men internalize it to different degrees into their self-identity (Giles & Close, 2008; Karazsia & Crowther 2010; Smolak & Stein, 2010). Some theorists have suggested that examining mediators and moderators may advance knowledge (Karazasia, Berlin, Armstrong, Janicke, & Darling, 2013; Vartanian, 2009).

Researchers have identified variables associated with internalization. In men, for example, variables associated with muscular ideal internalization include social pressure to be

muscular and the drive for muscularity (Edwards, Tod, & Molnar, 2014; Giles & Close, 2008; Karazsia & Crowther, 2009). Social pressure is the influence that socializing agents (e.g., friends, family, dating partners, the media) have on encouraging men to change their attitudes, values, and behaviors to conform to the mesomorphic ideal (Helfert & Warschburger, 2011; Tylka, 2011). The drive for muscularity, on the other hand, represents the desire to achieve a muscular physique (McCreary & Sasse, 2000).

Typically, body image-related theories (e.g., objectification theory, social comparison theory, and the tripartite model, Festinger, 1954; Fredrickson & Roberts, 1997; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) suggest that following media, family, or peer pressure, men internalize social messages and develop a high drive for muscularity (e.g., Karazsia & Crowther, 2010; Parent & Moradi, 2011; Steinfeldt, Gilchrist, Halterman, Steinfeldt, & Gomory, 2011; Tylka, 2011). It may also be, however, that the relationship between the drive for muscularity and internalization is reciprocal. For example, a high drive for muscularity may also predict internalization of the mesomorphic ideal, because the desire may sensitize their awareness and acceptance of social messages. That is, a high drive for muscularity may sensitize individuals to be more accepting of social messages. The first hypothesis in the current study is that the drive for muscularity provides an indirect relationship between perceived pressure and muscular ideal internalization, independent of a direct association.

Despite consistent positive correlations between the drive for muscularity, perceived pressure, and internalization (e.g., Karazsia & Crowther, 2010), few studies have examined variables that may moderate when perceived pressure predicts the internalization of the muscular ideal. Self-Determination Theory (SDT; Deci & Ryan, 2000) may help explain individual variation in mesomorphic ideal internalization. Central to SDT is autonomy, which refers to

volition, described as regulation by the self (Deci & Ryan, 1985). In SDT, various forms of motivation exist along an autonomy continuum (Deci & Ryan, 1985), reflecting the extent to which people have internalized behaviors into their self-identity. At the least autonomous end are attitudes and behaviors motivated by external consequences, such as to obtain rewards or to avoid punishment (Deci & Ryan, 2000). At this end of the continuum, men may internalize a mesomorphic ideal because they perceive that those people whose approval they seek (e.g., peers and sexual partners) believe it to be a desirable body shape. At the most autonomous end of the continuum, behaviors are motivated by inherent consequences that are concordant with people's central beliefs (Deci & Ryan, 2000). At this end of the continuum, for example, men may internalize a mesomorphic ideal because they believe it reflects their own self-chosen values, such as living healthily or demonstrating competence.

The few studies that have tested SDT in relation to body image variables have often focused on the drive for thinness in women (Thøgersen-Ntoumani & Ntoumanis, 2007; Thøgersen-Ntoumani, Ntoumanis, & Nikitaras, 2010). The role of SDT in men and muscularity remains to be examined. Studies have suggested autonomy is associated with positive health and well-being (Deci & Ryan, 2000). Evidence from the drive for thinness literature suggests that autonomy may play a role in the internalization of sociocultural pressures. For example, Pelletier and Dion (2007) identified that women who were more, rather than less, autonomous were less likely to be influenced by sociocultural pressures towards the thin ideal. Pelletier, Dion, and Levesque (2004) identified that autonomous women were less likely to be influenced by social body image-related cultural messages than less self-determined women.

Examining men's autonomy may help clarify why some men internalize social pressure for a mesomorphic ideal to a greater extent than other men. Potentially, autonomy influences

internalization via moderating the influence of social pressure. Men with lower levels of autonomy, compared with their counterparts with higher levels, may be more likely to accept social pressure and this may result in higher levels of internalization of the mesomorphic ideal. A second hypothesis tested in the current study was that autonomy moderates the direct relationship perceived pressure has with muscular ideal internalization in men.

The second way that autonomy may influence internalization is by moderating the indirect pathway between social pressure and internalization via the drive for muscularity. Men with higher levels of the drive for muscularity may be sensitized to internalize muscular messages and autonomy may interact with this relationship. Theoretically, if men have high levels of both the drive for muscularity and autonomy, then they may react to social messages in a way that reflects their inner values and beliefs. This may result, for men with high levels of the drive for muscularity and autonomy, in higher levels of internalization of the muscular ideal. Alternatively, men who have high autonomy but low levels of the drive for muscularity may be less likely to internalize the mesomorphic ideal. Possibly, men with low levels of the drive for muscularity, but high levels of autonomy, are not sensitive to pressures to be mesomorphic, but have other values and their autonomy is directed elsewhere. Consistent with contemporary mediation and moderation theory, it is possible for a predictor variable (e.g., perceived pressure) to relate to a criterion variable (e.g., internalization) through both direct and multiple indirect paths (e.g., via the drive for muscularity; see Hayes, 2013). In addition, these paths may be in opposite directions (e.g., the direct path may be positive, whereas the indirect pathway may be negative). It is also possible for a moderator (e.g., autonomy) to influence both the direct and indirect paths and to do so in opposite directions (Hayes, 2013). A third hypothesis tested in the

current study is that the indirect pathway between pressure and internalization via the drive for muscularity is moderated by autonomy.

Figure 1 presents a model summarizing the hypotheses tested in this study. Specifically, we hypothesized that: (a) pressure has a direct relationship with muscularity internalization, or pathway  $c$  in Figure 1; (b) autonomy moderates the direct relationship perceived pressure has with internalization of the mesomorphic ideal, or pathway  $c_A$  in Figure 1; (c) there exists an indirect pathway between pressure and internalization via the drive for muscularity, pathway  $a \times b$  in Figure 1, and (d) autonomy moderates the indirect relationship, or pathway  $b_A$  in Figure 1.

## Method

### Participants

Participants were 330 men ( $M_{AGE} = 20.58$  years,  $SD = 3.58$ ) who were undergraduate students attending sports-related courses at a university in the United Kingdom. Regarding national identity, 90% of men identified themselves as English, 3% as Welsh, 1% as Irish, 1% as Scottish, and 5% as other. The majority of participants (61%) currently took supplements (of the total sample the primary supplements were: protein (52%), vitamins and minerals (29%), weight gain products (15%), strength gain products (11%), and fat burners 10%), and 99% of the participants engaged in sport, physical activity, weight training, or a combination of all three. Of this activity engagement, 94% of the sample engaged in weekly physical activity, 76% weight trained at least once a week, and 93% of participants engaged in competitive sport. The primary sports were soccer (40%), rugby (11%), and basketball (9%).

### Measures

**Demographic questionnaire.** The demographic questionnaire asked participants to identify their age, national identity, supplement use, and engagement in physical activity, sport, and weightlifting.

**Drive for muscularity.** The Drive for Muscularity Scale-Attitude Subscale (DMS-A, McCreary & Sasse, 2000) was used to measure men's desire to be muscular and consists of 7 items (e.g., 'I wish that I were more muscular') with a 6-point Likert scale from 1 (*Always*) to 6 (*Never*). Items were reverse-scored and averaged so that higher values represented greater drive for muscularity. Evidence demonstrates acceptable scale score internal consistency, test-retest reliability (7 and 14 days), and concurrent and discriminant validity (Edwards, Tod, Morrison, & Molnar, 2012; Tod, Morrison, & Edwards, 2012). In the current study, Cronbach's alpha for this subscale was .90 (95% CI [.88,.91]).

**Perceived pressure to be mesomorphic.** The Perceived Sociocultural Pressure Scale-Modified (PSPS-M, Tylka, 2011) assesses men's perceived sociocultural pressure to be mesomorphic from four different sources: friends, family, dating partners, and the media. The PSPS-M consists of eight items (e.g., 'I've felt pressure from the media to be muscular and/or lean') with 2 items per source, and is rated on a Likert scale ranging from 1 (*Never*) to 5 (*Always*). Scale items were summed, with higher scores indicating greater pressure. Tylka (2011) presented internal consistency and construct validity evidence. In the current study, Cronbach's alpha for this scale was .86 (95% CI [.84,.88]).

**Internalization of the mesomorphic ideal.** The Internalization Subscale of the revised male version of the Sociocultural Attitudes Towards Appearance Scale (SATAQ-IR, Thompson et al., 1999) assesses the tendency to internalize societal mesomorphic ideals. This scale contains 11 items (e.g., 'I believe that clothes look better on men who are in good physical shape') and is

rated on a 5-point Likert scale ranging from 1 (*Completely disagree*) to 5 (*Completely agree*). Scale items were summed, with higher scores reflecting greater internalization. Previous studies have used this modified version of the scale with men (Tylka, 2011; Tylka, 2015; Tylka, Bergeron, & Schwartz, 2005). Evidence has revealed acceptable internal consistency and construct validity (Tylka, 2011; Tylka et al., 2005). In the current study, Cronbach's alpha for this scale was .86 (95% CI [.84,.88]).

**Autonomy.** Autonomy was assessed using the relative autonomy index (RAI; Wilson, Sabiston, Mack, & Blanchard, 2012) derived from scores on the Behavioral Regulation in Exercise Questionnaire-2 (BREQ-2; Markland & Tobin, 2004). The BREQ-2 measures amotivated, external, introjected, identified, and intrinsic regulation of exercise behavior. The instrument consists of 19 items (e.g., 'I exercise because others will not be pleased with me if I don't') scored on a 5-point Likert scale ranging from 0 (*Not true for me*) to 4 (*Very true for me*). In the current study, Cronbach's alpha for the BREQ-2 subscales were: amotivation .84 (95% CI [.80,.86]), external .82, (95% CI [.78,.85]), introjected .81 (95% CI [.77,.84]), identified .74 (95% CI [.74,.82]), and intrinsic .86 (95% CI [.83,.88]).

## **Procedure**

An institutional human research ethics committee cleared the study prior to data collection. Through our social networks, we directly recruited participants from undergraduate sports courses using a convenience sampling method. Participants were invited to take part in a study on the perceptions of body image in healthy young adults. In small groups or as individuals, participants received a pack containing: an information sheet describing the study and their rights and obligations, the self-report questionnaires (presented in a counterbalanced order), and a written informed consent sheet. Participants completed the questionnaires anonymously and their

participation took approximately 15 minutes. All participants took part on a voluntary basis and were not remunerated for their participation. Following measure completion, the participants received a verbal debrief from the first author.

### **Analytic Strategy**

Pearson's correlation coefficients were calculated to assess the bivariate relationships among the variables. Hayes' (2013) regression-based mediation and moderation analysis guidelines and PROCESS macro for SPSS (<http://afhayes.com/>) were implemented to conduct the main analyses. Hayes' (2013) procedures tested each direct and indirect pathway illustrated in Figure 1 independently while controlling for the remaining paths. In keeping with Hayes' (2013) guidelines, 95% bias corrected and accelerated bootstrapped confidence intervals were used to determine if the effects were statistically different from zero. Bootstrapped confidence intervals do not require homoscedasticity or residual normality assumptions to be satisfied and are considered more suitable and powerful indicators than traditional inferential tests (Field, 2013; Hayes, 2013).

Regression diagnostics were computed to assess the presence of bias in the results and to assess the satisfaction of regression assumptions. There was no evidence of predictor multicollinearity because tolerance values were well above 0.2 and variance inflation factor values were close to 1 (Field, 2013). Cook's and Mahalanobis distances were inside cutoff values, indicating no influential cases, and these values, along with residual plots, indicated no obvious outliers (Field, 2013). The Durbin-Watson tests were non-significant indicating that residuals were independent. Homoscedasticity and residual normality was not assessed because bootstrapping was employed to calculate confidence intervals and, as noted above, does not

require these assumptions. In summary, regression diagnostics did not provide evidence of bias, suggesting that the results can be generalized back to the population under study.

### **Results**

Little's (1988) missing completely at random (MCAR) test indicated missing data (0.06%) was randomly dispersed, and we used expectation maximization to calculate values. Table 1 presents means, standard deviations, and Pearson's correlations for the questionnaire scores. The internalization of the mesomorphic ideal physique was significantly positively correlated with the drive for muscularity and perceived pressure. The drive for muscularity was also significantly positively correlated with perceived pressure. Autonomy was significantly negatively correlated with perceived pressure.

Tables 2-4 present the results from the main analysis. As indicated in Table 2, both pressure and drive for muscularity significantly predicted internalization of the mesomorphic ideal and the relationships were positive. The interaction terms indicated that these relationships were significantly moderated by autonomy and justified examination of the hypothesized moderation effects.

As seen by Table 3 the direct pathway, or the relationship between pressure and internationalization, was moderated by autonomy. Higher levels of autonomy were associated with a weaker direct relationship between pressure and the internalization of the mesomorphic ideal. Table 4 illustrates that the indirect pathway between pressure and internationalization through the drive for muscularity was also moderated by autonomy. Higher levels of autonomy were associated with a stronger positive indirect relationship between pressure and internationalization through the drive for muscularity. The results are summarized in Figure 2.

### **Discussion**

The current study demonstrates that autonomy and drive for muscularity are related to the internalization of the muscular ideal. As a first novel finding, these results provide evidence that, in men, autonomy moderates the relationship perceived pressure has with the internalization of the mesomorphic ideal. That is, the direct relationship between pressure and internalization was weaker under higher levels of autonomy. As a second novel finding, perceived pressure had an indirect relationship with the internalization of a mesomorphic ideal via the drive for muscularity. As a third novel finding, the indirect path was moderated by autonomy and was stronger under higher levels of autonomy. These findings advance previous literature in the following ways.

First, paralleling literature that has focused on body image concerns in women (Pelletier et al., 2004; Thøgersen-Ntoumani & Ntoumani, 2007; Thøgersen-Ntoumani et al., 2010), autonomy also changes the relationship perceived pressure has with internalization in men. That is, lower levels of autonomy, compared with higher levels, predicted a larger positive direct relationship between perceived pressure and the internalization of the mesomorphic ideal. Consistent with SDT, men who were less self-determined were more likely to accept social messages and internalize them than individuals who were more self-determined. This finding may provide advances to current sociocultural theories seeking to explain variation in the internalization of ideal physiques. For example, objectification theory, social comparison theory, and the tripartite model have been used most often as guiding theoretical frameworks for muscularity research and they have stimulated knowledge advances by identifying how variables may interact and predict body image concerns (e.g., Parent & Moradi, 2011; Steinfeldt et al., 2011; Tylka & Andorka, 2012). Across these frameworks, there is a common theme that men experience pressure which results in them internalizing social messages. A limitation with these

models is a lack of explanation about why not every person exposed to social pressure internalizes the associated ideal to the same degree (Tiggemann, 2011). The results from the current study suggest such frameworks might benefit from including autonomy when applied to men.

Previous research has identified that the internalization of the mesomorphic ideal is correlated with the drive for muscularity and perceived social pressure (Karazsia & Crowther, 2009). Existing studies, however, have primarily focused on examining direct relationships among variables without considering potential indirect relationships. The current study extends this research by suggesting that, in addition to a direct pathway, perceived pressure has an indirect relationship with the internalization of the mesomorphic ideal via the drive for muscularity. More specifically, in men, the drive for muscularity provided a second pathway by which perceived pressure predicted internalization.

Related to the above point, the current study also reveals that it is possible that the drive for muscularity may fit in the linear frameworks before, rather than just after, internalization. As such, the findings offer pause for reflection. To date, researchers have only examined the possibility that internalizing social messages of the mesomorphic ideal predict drive for muscularity. It may be, however, that the drive for muscularity may predict internalization of the mesomorphic ideal. The current results provide initial support for this hypothesis. It may also be that internalization and the drive for muscularity share a reciprocal relationship and such a possibility may underpin the obsession with appearance that may be observed in some men, such as those experiencing muscle dysmorphia (Pope, Phillips, et al., 2000). A man who begins to internalize social messages about appearance may develop a heightened drive for muscularity. The increased drive for muscularity may sensitize the

individual to notice and attend to additional social messages or result in him entering environments where such messages are common or given greater emphasis (such as weight training gyms). Greater exposure or sensitivity to these messages may enhance internalization, which in turn elicits even higher muscularity desires. At the same time, there may be less sensitivity or exposure to alternative social messages in which muscularity is not emphasized (e.g., few gyms display posters in which the 98 pound weakling gets the girl over the beefcake). Longitudinal research will provide opportunities to test the hypothesized reciprocal relationship.

Further, the indirect path between pressure and internalization through the drive for muscularity was moderated by autonomy. Conversely to the direct path, higher levels of autonomy were associated with a stronger relationship between pressure and internalization. This finding is consistent with contemporary mediation and moderation theory, because the moderation effect is dependent on the path with which it interacts (Hayes, 2013). That is, the direct and indirect pathways are independent of each other and autonomy interacted differently with the separate relationships. The moderation effect via the indirect path makes theoretical sense from a SDT perspective. That is, in men who have a strong desire to be muscular, and whose motivations are autonomous, the indirect path between pressure and internalization becomes stronger. Theoretically, men who develop and live in controlling environments (e.g., men who are oppressed because of race or ethnicity) may experience lower levels of autonomy than men who develop in privileged autonomy supportive environments (Deci & Ryan, 2000). For example, it is possible that men whose parents were autonomy supportive, rather than controlling, may be more autonomous in adulthood (Joussemet, Landry, & Koestner, 2008). Future research may explore autonomy thwarting experiences in men. Doing so may help

identify why some men, and not others, may be more able to resist high levels of mesomorphic internalization.

In addition to advancing the empirical and theoretical literature, the current results also highlight avenues of future enquiry about the internalization of the mesomorphic ideal. First, autonomy may moderate relationships internalization has with other variables, both those that predict internalization (such as pressure in the current study) and those that are proposed to follow internalization, such as exercise behaviors, supplement use, and weightlifting. Second, the drive for muscularity may provide the basis for other indirect relationships internalization shares with other variables. Third, although we examined autonomy and the drive for muscularity, other variables may be associated with the direct and indirect relationships between pressure and internalization. For example, there are other variables, in addition to autonomy, included in SDT that may help develop the understanding about why some men, but not others, internalize a mesomorphic ideal. One possible set of moderators from SDT may be the three basic psychological needs (Deci & Ryan, 2000). Basic Needs Theory, a sub-theory of SDT, identifies that the satisfaction of three basic psychological needs (autonomy, competency, and relatedness) is crucial for well-being (Deci & Ryan, 2000). According to the theory, when the social environment is pressured, controlling, or unsupportive, psychological need satisfaction is thwarted (Deci & Ryan, 2000). From a SDT perspective, the muscular ideal is saturated with references to the three basic needs. Images of muscular male bodies display mastery and competence, independence and autonomy, and popularity and relatedness. Unflattering comparisons with the male physique ideal may signal a perceived lack of need satisfaction, because such communication may indicate lower levels of relatedness, competence, and autonomy. It may be that basic psychological needs moderate the internalization and perceived

pressure relationship. Consistent with thinness literature, perhaps the path between perceived pressure and internalization may be stronger in men whose needs are thwarted compared with those whose needs are not (see Thøgersen-Ntoumani et al., 2010).

Consistent with previous research, friends, family, dating partners, and the media were the pressure sources included in this study (e.g., Helfert & Warschburger, 2011; Tylka, 2011). The PSPS-M gives us insight into multiple intra-individual pressure sources and only one environmental factor (i.e., the media). This limited attention to environmental sources reduces the media to a mere epiphenomenon, rather than viewing a collection of environmental factors that may influence internalization (Gill, 2008). Further research on a wider variety of intra-individual and especially environmental pressure sources will help establish if these are the only or most salient ones with respect to the internalization of muscularity. Alternatively, perhaps the sources are context specific. For example, coaches and teammates may be more relevant pressure sources for athletic populations than parents or friends. The benefit from further exploring a larger range of variables in various populations is the generation of knowledge about the mechanisms and predictors related with the internalization of the mesomorphic ideal and the intra-individual and environmental variables under which the preoccupation is likely to emerge. This knowledge may give rise to interventions to help men who are affected by the internalization of the mesomorphic ideal.

Although the results add to literature regarding the internalization of the mesomorphic ideal, the cross-sectional design means causality cannot be inferred and the direction of tested relationships should be viewed with caution (Maxwell & Cole, 2007). The vast majority of research in the area has been descriptive, and in some cases for good reasons. It would be unethical, for example, for an experiment to proceed that involved an intervention designed to

increase people's preoccupation with a muscular physique because of the known likely negative physical, behavioral, and psychological consequences (e.g., exercise dependence, anxiety).

Given that such experiments should not be approved, descriptive research represents the best evidence available to guide theory development and practical applications. Nevertheless, there are various types of descriptive research methods (e.g., qualitative, longitudinal) and each has strengths and weaknesses. For example, although longitudinal time-lag studies may allow for variables measured at earlier time points to predict variables at later time points, they may suffer from increased drop-out rate and loss of statistical power. Adopting a variety of methods may help account for the limitations of specific methods.

Consistent with the majority of drive for muscularity research, we sampled undergraduate students (Edwards et al., 2014). Typically, previous studies have recruited students from psychology and health science departments, our demographic consisted of sports students, almost all of whom were physically active. Although knowledge about this population has value, it limits the generalizability of the findings to other community and student samples (e.g., inactive students from other academic disciplines or academic levels). Further, we asked participants to identify their national identity. We did not ask participants to identify their ethnicity, sexual orientation, or family background. Examining whether the pathways tested in the present study exist among other socio-economic groups, cultures, subcultures, and ethnicities will contribute to knowledge. Future research may also include racialization and acculturation because assessing these factors may provide a more complete picture. Second, there are numerous proximal and distal variables (e.g., personality characteristics, men's oppressive beliefs) that may contribute a fuller model (Benford & Swami, 2014; Swami & Voracek, 2013). Finally, the SATAQ-IR represented, at the time of data collection, the most specific measure of

men's mesomorphic internalisation. Future research may use muscularity subscales of the SATAQ-4 because it may be a more robust measure of mesomorphic internalisation (Schaefer et al., 2015).

Vartanian (2009) has argued that there is a need to examine variables that may explain variation in internalization levels among men. The current results extend research by revealing that both direct and indirect pathways (via the drive for muscularity) exist between pressure and internalization. Further, these pathways were moderated by autonomy, albeit in different directions. The current study highlights that attempts to help men who have strongly internalized the mesomorphic ideal would benefit from being multifaceted, to: (a) increase autonomy, and (b) reduce drive for muscularity. Each strategy on its own may be insufficient, but together they will provide for stronger interventions. Additional research will assist in the development of frameworks that synthesize knowledge in ways that assist men whose quality of life may be influenced by the internalization of the mesomorphic ideal.

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Table 1

*Means, Standard Deviations, and Correlations among the Measured Variables*

Measure	<i>M</i>	<i>SD</i>	RAI	DMS-A	PSPS-M	SATAQ-IR
RAI	11.34	5.09				
(range = -24 to +20)						
DMS-A	3.46	1.23	.07			
(range = 1 to 6)						
PSPS-M	18.87	6.52	-.23*	.39*		
(range = 8 to 40)						
SATAQ-IR	32.65	8.61	-.03	.61*	.48**	
(range = 11 to 55)						

*Note.* \*  $p < .05$ ; \*\* $p < .01$ . RAI = Relative Autonomy Index, DMS-A = Drive for Muscularity Scale Attitude Subscale, PSPS-M = Perceived Sociocultural Pressure Scale-Modified, SATAQ-IR= Sociocultural Attitudes towards Appearance Scale Internalization Revised subscale.

Table 2

*Coefficients, Standard Errors (SE), Significance Levels, and 95% Bias Corrected and Accelerated Bootstrapped Confidence Intervals for Internalization of the Mesomorphic Ideal*

Variable	Coefficient	SE	<i>p</i>	95% CI
Constant	10.65	.11	.001	4.11-17.20
DMS-A	2.14	.72	.003	0.73-3.55
PSPS-M	.71	.15	<.001	0.42-1.00
RAI	.21	.27	.430	-0.31-0.73
DMS-A X RAI	.12	.06	.042	0.01-0.23
PSPS-M X RAI	-.03	.01	<.020	-0.05- -0.01

*Note.* RAI = Relative Autonomy Index, DMS-A = Drive for Muscularity Scale Attitude

Subscale, PSPS-M = Perceived Sociocultural Pressure Scale-Modified.

Table 3

*Conditional Direct Effects of Perceived Pressure on Internalization at Various Values of Autonomy.*

Percentile values of moderator	RAI value	Effect (SE)	<i>p</i>	95% CI
10 <sup>th</sup>	3.75	0.60 (0.12)	<.001	0.39-0.82
25 <sup>th</sup>	9.08	0.45 (0.07)	<.001	0.32-0.58
50 <sup>th</sup>	12.67	0.36 (0.06)	<.001	0.24-0.48
75 <sup>th</sup>	15.00	0.28 (0.08)	<.001	0.13-0.43
90 <sup>th</sup>	16.67	0.23 (0.09)	<.01	0.06-0.41

*Note.* RAI = Relative Autonomy Index. Table 3 presents percentile values of the moderator for the direct path between Perceived Pressure and Internalization.

Table 4

*Conditional Indirect Effects of Perceived Pressure on Internalization at Various Values of Autonomy*

Percentile values of moderator	RAI value	Effect (SE)	95% Confidence Interval
10 <sup>th</sup>	3.75	0.19 (0.05)	0.10-0.31
25 <sup>th</sup>	9.08	0.24(0.04)	0.16-0.33
50 <sup>th</sup>	12.67	0.26 (0.04)	0.19-0.35
75 <sup>th</sup>	15.00	0.29 (0.05)	0.21-0.39
90 <sup>th</sup>	16.67	0.30 (0.05)	0.21-0.41

*Note.* RAI = Relative Autonomy Index. Table 4 presents percentile values of the moderator for the indirect path between Perceived Pressure and Internalization through the Drive for Muscularity.

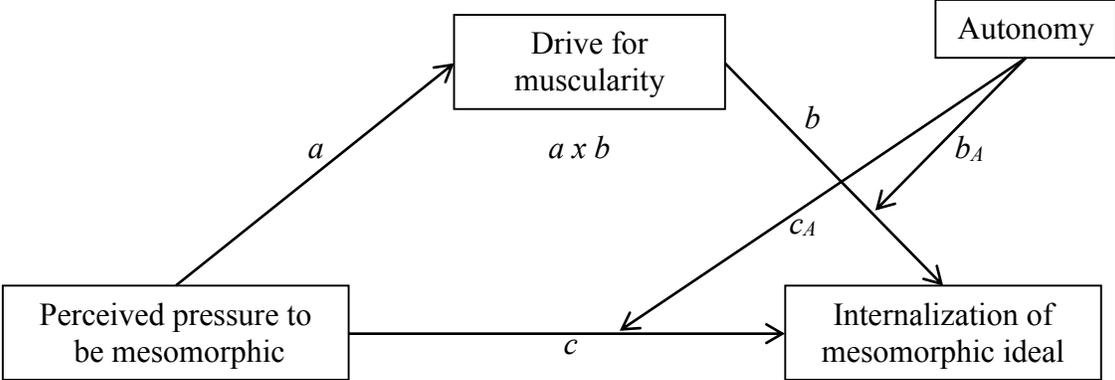


Figure 1. The hypothesized model containing the direct and indirect pathways tested in the current study.

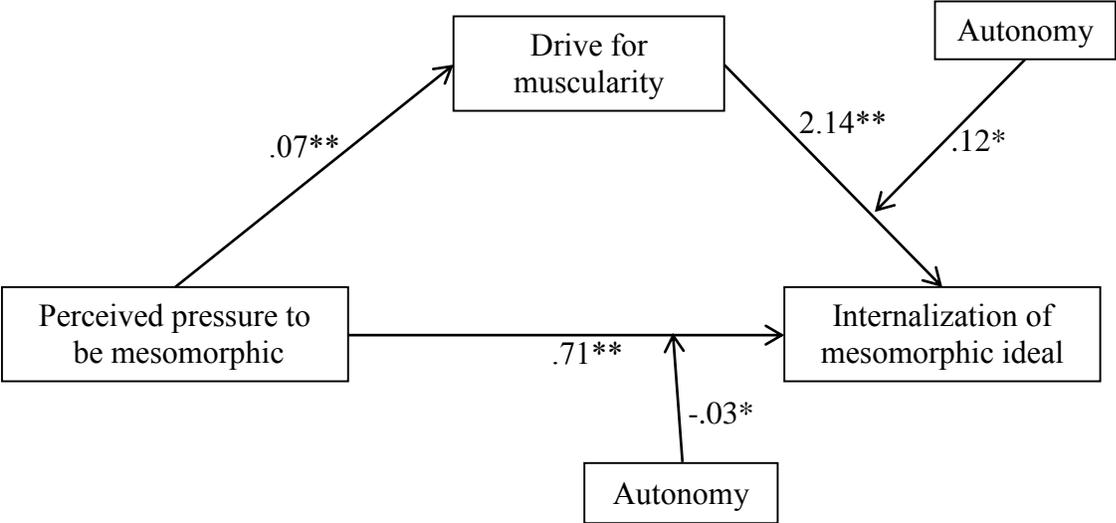


Figure 2. Model containing unstandardized coefficients for direct and indirect pathways, \*  $p < .05$ ; \*\*  $p < .01$ .