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# Desire for Control Moderates the Relationship between Perceived Control and Depressive Symptomology

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## ABSTRACT



**Background.** The prevalence of psychological difficulties is rising at an alarming rate, with an increasing number of individuals reporting symptoms of depression. A decline in both perceived control and desire for control has previously been associated with the onset of depression. However, previous research has failed to examine whether perceived control and desire for control interact in their relationship with depressive symptomology. **Methods.** A sample of 350 participants completed the Spheres of Control Scale, the Desirability of Control Scale and Beck's Depression Inventory. Process Macro was used to examine whether desire for control moderated the relationship between perceived control and depressive symptomology. **Results.** Desire for control significantly moderated the relationship between perceived control and depressive symptomology. The results indicated that variations in perceived control had a greater effect on the manifestation of depressive symptomology in individuals with lower desire for control than those with higher desire for control. **Discussion.** This study provides novel evidence that desire for control moderates the relationship between perceived control and depressive symptomology. The clinical implications of the results are discussed, with reference to future research. **Conclusions.** The results indicate that individuals with lower desire for control are more sensitive to variations in perceived control, such that decrements in perceived control contribute to a greater increase in depressive symptomology, and vice versa.

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## Introduction

Depression is characterized by low mood, persistent despondency and loss of interest in pleasurable activities, among other symptoms. The prevalence of depressive symptomology is rising at an alarming rate, currently affecting over 21% of the population [1]. It is critical that psychologists endeavor to elucidate the etiology of depression, to aid the development of effective interventions for people with such psychological difficulties [2].

### *Perceived Control and Depression*

Perceived control refers to the extent to which one believes that one possesses the power to affect one's environment. Theorists such as Friedrich Nietzsche have advocated the importance of perceived control in psychological welfare long before the formal inception of psychology as a scientific field. Early researchers in psychology also emphasized the importance of perceived control in psychological welfare [3,4], with such

propositions formalized in Martin Seligman's 'Hopelessness Theory'. This theory argues that the perceived absence of the ability to modulate outcomes in one's environment culminates in a sense of hopelessness, which increases one's propensity to the development of depressive symptomology [5-7].

Hopelessness theory has ascertained overwhelming empirical support over the last 45 years. Contemporary literature indicates that perceived control maintains an inverse relationship with the development of depressive symptomology [8-13]. Moreover, there is strong evidence that this relationship is causal, with decrements in perceived control preceding the onset of depressive symptomology, and vice versa [14-16]. These results indicate that perceived control is critical for psychological welfare and that its absence can culminate in the manifestation of symptoms of depression.

### *Desire for Control and Depressive Symptomology*

Desire for control refers to the extent to which one craves power in their environment. Whilst research on this

topic is scarce, preliminary evidence indicates that there is an inverse relationship between desire for control and depressive symptomology. Specifically, individuals with higher desire for control exhibit fewer symptoms of depression, and vice versa [17-23]. Interestingly, the relationship between desire for control and depressive symptomology appears to be consistent among individuals from both individualistic and collectivistic cultures [24]; these results provide tentative evidence that the relationship between the respective facets may represent a universal phenomenon. However, it is important to note that longitudinal data are currently absent, limiting one's ability to determine whether desire for control causally influences the manifestation of symptoms of depression.

### *Perceived Control, Desire for Control and Depressive Symptomology*

More recently, researchers have begun to examine whether perceived control and desire for control interact in their relationship with depressive symptomology. In a recent article, Myles argued that the upsurge of depressive symptomology, and mental health concerns more generally, in adolescence may be the consequence of large increments in desire for control in the absence of correspondingly high increments in perceived control [22]. Indeed, Amoura ascertained that there may be an interaction between perceived control and desire for control in their relationship with depression [18]. The authors report that individuals with low perceived control and low desire for control experienced the highest number of symptoms of depression, followed by individuals with low perceived control and high desire for control, followed by individuals with high perceived control and high desire for control; the individuals with high perceived control and low desire for control exhibit the fewest symptoms of depression. However, the authors failed to present analyses detailing whether the differences in the mean scores of the depressive symptomology met the threshold for statistical significance. Nevertheless, these results provide some evidence that perceived control and desire for control interact in their relationship with depression.

### *Current Study*

To the authors' knowledge, there is currently no research examining whether perceived control and desire for control interact in their effect on depressive symptomology. As previously alluded, Myles suggested that desire for control may moderate the relationship between perceived control and the onset of the symptoms of depression [22]. Accordingly, this study aims at examining whether desire for control and perceived control interact in their relationship with depressive symptomology. Specifically, this paper will reanalyze previously collected data in order to examine whether

desire for control moderates the relationship between perceived control and depressive symptomology [22].

## Materials and Methods

### *Design*

A cross-sectional design was used to examine the moderating role of desire for control in the relationship between perceived control and depressive symptomology.

### *Participants*

A total of 350 participants completed three online questionnaires, examining perceived control, desire for control and depressive symptomology, respectively. The sample included 83 males, 266 females and one individual who did not disclose their gender. Additionally, the mean age of the participants was 22.8 years ( $SD = 9.0$ ), ranging from 18 to 67 years. Our sample was recruited largely from Durham University's social media pages, with only individuals over 18 years of age permitted to participate in the study. All participants provided informed consent for their participation in this study.

### *Measures Perceived Control*

Perceived control was examined using the 'Spheres of Control Scale 3' [25,26]. This scale adopts a holistic perspective over perceived control by examining the extent to which individuals perceive their being in control of various domains of their lives. It includes 30 statements and the participants are required to rate their agreement on a 7-point Likert scale; for example, "I can usually achieve what I want when I work hard for it." The reliability of this measure was strong, with an internal consistency of  $\alpha = .804$ . Moreover, there is significant support in the literature for this tool as a valid measure of perceived control [27,28].

### *Desire for Control*

Desire for control was examined using the 'Desirability of Control Scale' [29]. This 20-item scale examines the extent to which individuals crave power within their environment. The items are statements for which the individuals rate their agreement on a 7-point Likert scale; for example, "I enjoy making my own decisions." This scale had strong reliability, with an internal consistency of  $\alpha = .803$ . Moreover, research indicates that this measure represents both a valid [30] and reliable measure of desire for control [31].

### *Depressive Symptomology*

Depressive Symptomology was examined using 'Beck's Depression Inventory 2' [32]. This measure consists of 21 items and requires individuals to rate their agreement with statements such as, "I hate myself". The measure was deemed highly reliable, with an internal consistency of  $\alpha = .929$ . Moreover, the validity of this measure has ascertained significant empirical support in the literature [33].

**Procedure**

Durham University Ethics Committee provided the ethical approval for this study to be conducted. All the individuals participating in the study were informed of the potentially distressing content of the questionnaires and were provided with information regarding the procedure, so that informed consent could be ascertained. Participants then provided demographic information, including their age and gender, prior to completing the Spheres of Control Scale 3, the Desirability of Control Scale and Beck’s Depression Inventory 2. Finally, participants were debriefed on the aims of the study and provided with the contact details of relevant mental health support services.

**Results**

*Preliminary Analyses*

Table 1 displays the means, standard deviations and zero-order correlations between the variables. These preliminary analyses indicate that all variables were significantly correlated ( $p < .01$ ). As perceived control and desire for control did not entail a correlation coefficient higher than 0.9, multi-collinearity was not deemed to be an issue.

**Table 1.** Means, standard deviations (SD) and intercorrelations between the variables (n=350)

Variables	DS	PC	DFC
<b>DS</b>	-	-	-
<b>PC</b>	-.35**	-	-
<b>DFC</b>	-.17**	.49**	-
<b>Mean</b>	9.71	132.89	93.88
<b>SD</b>	9.56	17.40	14.07

*Note.* The table shows the Pearson’s product-moment correlation coefficients between depressive symptomology (DS), perceived control (PC) and desire for control (DFC). \*\*  $P < .01$ .

In addition, the data were examined for normality. Perceived control and desire for control were normally distributed, as indicated by the examination of skew indices. However, depressive symptomology was not normally distributed and had a positive skew of 1.203 (standard error = 0.13); a logarithmic transformation was used to correct for positive skew. A moderation analysis was conducted using Process Macro for SPSS to examine whether desire for control moderated the relationship between perceived control and depressive symptomology [34].

*Moderation Analysis*

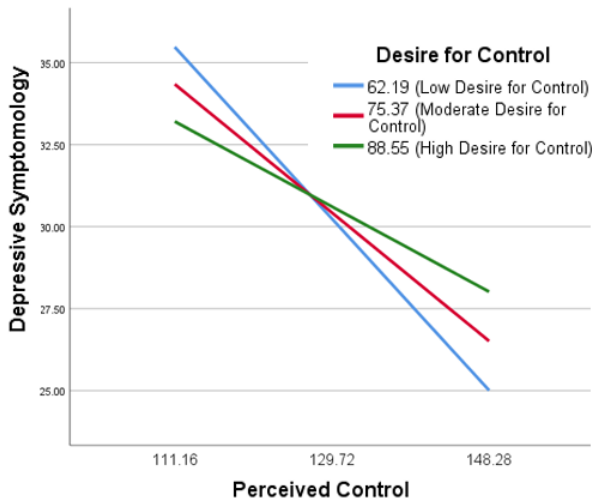
The direct effects of perceived control and desire for control on depressive symptomology were examined. Perceived control had a direct effect on depressive symptomology ( $b = -.6175$ , 95% CI [-.885, -.3501],  $t = 4.5408$ ,  $p < .0001$ ), indicating that perceived control entails an inverse relationship with depressive symptomology. Desire for control also maintained a direct effect on depressive symptomology ( $b = -.6858$ , 95% CI [-1.1238, -.2478],  $t = -3.0794$ ,  $p = .0022$ ), suggesting that there is an inverse relationship between desire for control and depressive symptomology.

The results indicated that there was a significant effect of the interaction between perceived control and desire for control on depressive symptomology ( $b = .0054$ , 95% CI [.002, .0088],  $p = .0021$ ). Critically, the amount of variance accounted for by the model significantly increased by 2.26% with the inclusion of the interaction term, indicating that the inclusion of desire for control as a moderating variable is appropriate,  $F(1, 352) = 9.5929$ ,  $P = .0021$ ,  $\Delta R^2 = .0226$ . Overall, the model accounted for 16.99% of the variance in depressive symptomology.

Further analyses were conducted to probe the interaction between desire for control and perceived control in their relationship with depressive symptomology. Simple slopes were used to examine the moderating effect of desire for control in the relationship between perceived control and depressive symptomology. Accordingly, the effect of perceived control on depressive symptomology was examined when desire for control was one standard deviation below the mean, at the mean and one standard deviation above the mean. The results indicated that the relationship between perceived control and depressive symptomology was significant at one standard deviation below the mean ( $b = -.2820$ , 95% CI [-.3583, -.2057],  $t = -7.2677$ ,  $p < .0001$ ), at the mean ( $b = -.2109$ , 95% CI [-.2706, -.1513],  $t = -6.9567$ ,  $p < .0001$ ) and at one standard deviation above the mean ( $b = -.1398$ , 95% CI [-.2131, -.0666],  $t = -3.755$ ,  $p = .0002$ ). Moreover, the Johnson-Neyman output indicates that the effect of perceived control on depressive symptomology was significant at low, moderate and relatively high levels of desire for control ( $p \leq .05$ ). However, at very high levels of desire for control, such that participants score above 97 out of 112 on the Desirability of Control Scale [29], the effect of perceived control on depressive symptomology was no longer statistically significant ( $p > .05$ ).

Inspection of Figure 1 provides greater insight into the nature of the moderating role of desire for control in the relationship between perceived control and depressive symptomology. Figure 1 indicates that perceived control maintains an inverse relationship with depressive symptomology, irrespective of the extent to which

participants crave control. However, fluctuations in perceived control entail a greater influence over variations in depressive symptomology in participants with lower desire for control, compared to individuals with higher desire for control.



**Figure 1.** The Moderating Effect of Desire for Control in the Relationship between Perceived Control and Depressive Symptomology

## Discussion

The results indicate that both perceived control and desire for control maintain inverse relationships with depressive symptomology, such that decrements in the control-related facets are associated with increments in the symptoms of depression. Furthermore, the current study extends previous data by demonstrating that desire for control moderates the relationship between perceived control and depressive symptomology. Specifically, fluctuations in perceived control entail a greater influence over variations in depressive symptomology in individuals with lower desire for control, compared to individuals with higher desire for control. To the authors' knowledge, this is the first study to demonstrate the moderating role of desire for control in the relationship between perceived control and depressive symptomology.

Indeed, the results from the current study are in line with previous research. An abundance of prior research has demonstrated that depressive symptomology entails an inverse relationship with both perceived control [3-11,13-15,16,22] and desire for control [17-19,22,24]. These results support this literature and theoretical propositions that the absence of perceived control culminates in a sense of hopelessness, and consequently the manifestation of symptoms of depression [5-7]. Moreover, the results indicated that individuals with low perceived control and low desire for control experienced the greatest number of symptoms of depression, followed by individuals with low perceived control and high desire for control, followed by individuals with high perceived control and high desire for

control; individuals with high perceived control and low desire for control exhibit the fewest symptoms of depression. Interestingly, these findings are in line with the information provided by Amoura; however, Amoura failed to determine whether these differences were statistically significant [18].

Elucidating the phenomenological and experiential basis of the moderating effect of desire for control in the relationship between perceived control and depressive symptomology is necessarily speculative, due to the absence of prior literature in this area [18]. However, it is conceivable that individuals with greater desire for control over their lives will more regularly seek out opportunities to exert control over their environment than individuals with lower desire for control (see [22] for an in-depth discussion). Accordingly, during instances of low perceived control, individuals with high desire for control may be more inclined to seek out opportunities to exert control; this would serve to prevent psychological welfare from further deterioration. In contrast, individuals with lower desire for control may be less likely to attempt to find opportunities to exert control, culminating in further psychological distress and elevated depressive symptomology [22]. When perceived control is high, this may be less rewarding for individuals with high desire for control, as a sense of control may be, to some extent, anticipated. However, high perceived control may be particularly rewarding for individuals with lower desire for control, as increments in perceived control may not be anticipated. This theory accounts for the results obtained in the current study from a more phenomenological and experiential perspective.

### Clinical Implications

These results have critical implications for applied psychologists working in clinical settings. Firstly, this study supports the notion that maintaining both perceived control and desire for control is critical for psychological welfare [22]. Accordingly, clinicians should endeavor to bolster these facets in individuals experiencing symptoms of depression through therapeutic interventions, such as cognitive behavioral therapy. Whilst perceived control is a common target for cognitive therapeutic interventions [35-37], desire for control is less frequently targeted in therapeutic interventions. These results indicate that clinicians may be better able to support their clients through the use of therapeutic techniques such as motivational interviewing [38,39] to elevate clients' desire for control.

Furthermore, evidence that desire for control moderates the relationship between perceived control and depressive symptomology also has important clinical implications. These findings indicate that, whilst clinicians should generally endeavor to preserve perceived control in their clients through therapeutic interventions [35,36], they must

be particularly mindful of enhancing perceived control in individuals with low desire for control, since such individuals may experience greater depressive symptomology as a consequence of decrements in perceived control.

#### Limitations

One of the primary limitations concerns the cross-sectional design used to collect the data. Whilst statistical techniques indicate that desire for control moderates the relationship between perceived control and depressive symptomology, longitudinal data would be required to determine whether the effect of these variables on depressive symptomology is causal. Secondly, confounding psychological difficulties may have limited the validity of these results. For example, the control-related facets may also modulate symptoms of anxiety, which may confound symptoms of depression [40], resulting in an apparent relationship between the respective facets and depressive symptomology. Finally, the participants' current medical status was not controlled, and some individuals may have been using antidepressant medication. This may have diminished the observed relationships between the predictor variables and depressive symptomology, as antidepressants can reduce psychological distress [41]. Nevertheless, these limitations are pertinent to the majority of the studies in this area and do not render the results unintelligible, nor do they detract from the relevance of the results to clinical practice.

#### Future Research

Future research must endeavor to determine whether desire for control entails a causal role in moderating the relationship between perceived control and depressive symptomology through the collection of longitudinal data. In addition, future research should explore the therapeutic applications of these data, examining how clinicians can best support clients by bolstering their desire for control. This is a topic that has received little attention in the literature, despite its significant potential in aiding clinicians to support their clients.

## Conclusions

Overall, these findings indicate that both perceived control and desire for control maintain an inverse relationship with depressive symptomology, such that decrements in the control-related facets are associated with increments in the symptoms of depression. However, this study extends the previous research with novel evidence that desire for control moderates the relationship between perceived control and depressive symptomology. Specifically, these results indicate that individuals with lower desire for control are more sensitive to variations in perceived control, such that decrements in perceived control contribute to a greater increase in depressive symptomology, and vice versa.

## Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article. The manuscript was read and approved by all authors.

## Compliance with ethical standards

Any aspect of the work covered in this manuscript has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

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