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Confinement During Covid-19 Outbreak Modifies Athletes' Self-based Goals

Psychology of Sport and Exercise

Nicolas Mascret[a]*

[a]*Aix Marseille Univ, CNRS, ISM, Marseille, France*

*Corresponding author

Nicolas Mascret

Institute of Movement Science, 163 avenue de Luminy, Case 910, 13288 Marseille cedex 9, France

Email: nicolas.mascret@univ-amu.fr

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Highlights

- Different achievement goals may be better suited for different types of situations.
- Athletes' self-based goals changes during the Covid-19 outbreak.
- Athletes focus on avoiding physical regression (self-avoidance goals).
- Self-avoidance goals are not always maladaptive and predict intention to exercise.
- Shifting among multiple goals according to the situation may be beneficial.

Abstract

Because achievement goals are context-specific, the study first investigated the evolution of two achievement goals of 697 regular athletes, namely self-approach goals (improving oneself) and self-avoidance goals (avoiding regression), before and during the confinement situation and the physical exercise restrictions due to the Covid-19 outbreak. Secondly, we sought to examine the potential predicting role of self-approach and self-avoidance goals on athletes' intention to exercise during confinement, while self-avoidance goals were usually not related to this outcome in a more traditional context. Using a retrospective correlational design, the results of repeated measures ANOVA highlighted that self-approach goals scores decreased while self-avoidance goals scores increased and became the athletes' goals with the highest score during confinement. The results of hierarchical regression analyses showed that self-approach and self-avoidance goals were both found as positive predictors of intention to exercise during confinement. This study reinforces the assumptions that (a) a specific achievement setting encourages the adoption of different achievement goals (which was identified here with regular athletes in an unusual context of confinement), (b) self-avoidance goals are not always maladaptive, and (c) shifting among multiple goals according to the requirements of the situation may be beneficial.

Keywords: achievement goals; 3 x 2 model; context; physical exercise; outbreak.

Confinement During Covid-19 Outbreak Modifies Athletes' Self-based Goals

A specific context may more or less influence the psychological characteristics of a sample of individuals. Some contexts may be particularly relevant in relation to their exceptional nature, such as the confinement situation due to the Covid-19 outbreak. Sport is also a compelling context to better understand emotion, judgment, motivation, and behavior (Van Yperen, 2020). Consequently, the present study investigated the evolution of athletes' achievement goals in the specific context of confinement, especially their self-based goals focusing on how an individual is doing relative to his/her own trajectory.

Achievement goals have been investigated for almost 40 years in the academic, sports, and work domains. Achievement goals are "cognitive representation(s) of a competence-based possibility that an individual seeks to attain" (Elliot, 1999, p. 628). They are differentiated according to the definition of competence (absolute, intrapersonal, normative) and its valence (approach, avoidance), leading to six achievement goals (Elliot, Murayama, & Pekrun, 2011). Achievement goals are context-specific aims (Van Yperen, 2006) and a reason activated in a specific achievement setting encourages the adoption of achievement goals (Elliot & Trash, 2001). Empirical research focusing on the influence of a specific context on individuals' adoption of goals have provided interesting results (Hamstra, Van Yperen, Wisse, & Sassenberg, 2014). For example, achievement goal adoption in the academic context was influenced by the perceived classroom environment (Church, Elliot, & Gable, 2001). In the sport literature, achievement goals have been overwhelmingly investigated in the general context of sport (Lochbaum, Jean-Noel, Pinar, & Gilson, 2017). But specific sport contexts may also influence achievement goals adoption. For instance, motivational climate induced by the coach (oriented toward personal development or oriented toward social comparison) was related with achievement goal adoption (for a review see Harwood, Keegan, Smith, & Raine, 2015). Athletes' goal orientations were also different across training and competition (Van de

Pol & Kavussanu, 2011). The question arises whether the confinement situation and the physical exercise restrictions due to the Covid-19 outbreak may impact the achievement goals adoption of regular sportspeople, especially the adoption of avoidance-based goals which focus on failure (Elliot et al., 2011). Answering this question was the first aim of the study. Self-approach (improving oneself) and self-avoidance (avoiding regression) goals were investigated in the present study because the strong constraints on physical exercise due to confinement could promote self-avoidance goals. In contrast, these goals are usually underrepresented among all athletes in a more conventional sport context because they are likely to be prevalent among older athletes on the downside of their sports career (Mascret, Elliot, & Cury, 2015).

The second aim of the study was to examine the potential predicting role of self-approach and self-avoidance goals on athletes' intention to exercise during confinement. To date, no study has investigated this issue even before confinement. But self-based goals were previously included in broader goals called mastery-approach goals (striving to develop competence through task mastery and personal improvement) and mastery-avoidance goals (not doing poorly relative to task demands or one's own performance trajectory). The recent review of Lochbaum, Zanatta, and Kazak (2020) highlighted that mastery-approach goals were positively related with intention to exercise (and many other positive outcomes) whereas mastery-avoidance goals were unrelated with intention to exercise, and often associated with negative outcomes such as worry or reduced enjoyment (Gardner, Vella, & Magee, 2017). Similarly, athletes' self-avoidance goals (avoiding regression) were negatively related with happiness (Briki, 2019). We wondered, however, whether self-avoidance goals may for once be positive predictors of athletes' intention to exercise during confinement because they could be more congruent with this particular and temporary context.

Materials and Methods

Participants

A total of 697 French participants (356 men, 341 women, M_{age} = 31.4 years, *SD* = 10.19) voluntarily filled out the questionnaire. Sample size was based on the maximum number of participants that could be recruited during the week of data collection. Participants had to be of legal age (18 years old in France) and had to practice sport or physical exercise on a regular basis before the confinement due to Covid-19 ($M_{time\ of\ practice}$ = 7.15 hours per week, *SD* = 3.53), assessed using a single item "*On average, how many hours per week did you exercise before the start of confinement?*". Two hundred and seventeen athletes were practicing sport and physical exercise at recreational level, 353 at departmental to regional level, and 127 at national to international level.

Procedure

Nonprobability snowball sampling was used to recruit participants (Kosinski, Matz, Gosling, Popov, & Stillwell, 2015). A Web link to access the online questionnaire was sent to a first wave of participants. They were also asked to forward this link to their own network. The completion of the questionnaire was individual and anonymous. Participants signed an informed consent electronically. Data were collected in mid-March 2020 for one week, one month after the implementation of confinement in France. Nonprobability snowball sampling in individual Web-based sessions was selected in the present study because of social distancing rules that have been put in place by the French authorities to control the spread of Covid-19. Concerning physical exercise, the French authorities only allowed short trips linked to individual physical exercise, within the limit of one hour per day and within a maximum radius of one kilometer around home. Collective physical exercise was strictly forbidden. The study was approved by the National Ethics Committee for Research in Sports Sciences (CERSTAPS IRB00012476-2020-13-04-57) and met the requirements of the Declaration of Helsinki. The ecological validity of the present study was represented by the context of

confinement which had not been experimentally manipulated but imposed by the authorities because of the health situation.

Measures and Hypotheses

Self-approach and self-avoidance goals were assessed twice with the two corresponding subscales of the 3 x 2 Achievement Goal Questionnaire for Sport (AGQ-S, Mascret et al., 2015) initially validated in French language. Participants were first asked to answer items on a Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*) assessing retrospectively their self-approach goals (e.g., *"When I was exercising before confinement, my goal was to have better results than I had in the past"*) and self-avoidance goals (e.g., *"When I was exercising before confinement, my goal was to avoid doing worse than I usually do"*) when they had physical exercise prior to the start of confinement. We used a retrospective design to assess self-based goals before confinement because (a) it was not possible to initiate the study before the start of confinement, (b) we were interested in the overall self-based goals adopted when participants had physical exercise before confinement, and (c) retrospective designs have already been used successfully in studies focusing on achievement goals in the sports context (e.g., Dewar & Kavussanu, 2011). Later in the questionnaire, participants answered the same items, but this time adapted when they had physical exercise during confinement (e.g., *"When I am exercising during confinement, my goal is to avoid doing worse than I usually do"*). Using McDonald's omega (Dunn, Baguley, & Brunsden, 2014), internal consistency was good for self-based goals before and during confinement, with ω ranging from .73 to .94. We expected self-approach goals to decrease and self-avoidance goals to increase between the measures before and during confinement due to the Covid-19 outbreak (Hypothesis 1).

Intention to exercise during confinement was assessed based on a French translation of the measure adapted from Chatzisarantis, Biddle, and Meek (1997). Participants responded to

the three items (e.g., *"I plan to exercise at least three times a week during confinement"*) on a 7-point scale ranging from 1 (very unlikely) to 7 (very likely). Internal consistency was high (ω = .97). Physical exercise is defined in the present study as a "planned, structured and repetitive bodily movement, the objective of which is to improve or maintain physical fitness" (Caspersen, Powell, & Christenson, 1985, p. 126). We expected both self-approach and self-avoidance goals to be positive predictors of intention to exercise in the particular context of confinement, whereas self-avoidance goals were not usual predictors of intention to exercise in a more conventional context.

Results

Preliminary analyses were previously conducted. No missing data were found. Two participants were excluded because they were identified as outliers using Mahalanobis distance ($p < .001$) at the multivariate level. Skewness and Kurtosis estimates indicated that the measures of self-approach and self-avoidance goals were normal in distribution. All statistical analyses were conducted using JASP software (version 0.12.2).

A repeated measures ANOVA with the factors Goals (Self-approach, Self-avoidance) and Time (Before confinement, During confinement) revealed a significant effect of Time ($F(1, 1392) = 201.09$, $p < .001$, $\eta_p^2 = .126$) and a significant Goals X Time interaction ($F(1, 1392) = 399.32$, $p < .001$, $\eta_p^2 = .223$). Post hoc comparisons using the Tukey HSD test indicated that the mean score for self-approach goals during confinement ($M = 3.69$, $SD = 1.90$) was significantly lower than before confinement ($M = 5.47$, $SD = 1.51$, $p < .001$). Conversely, the mean score for self-avoidance goals during confinement ($M = 4.72$, $SD = 1.69$) was significantly higher than before confinement ($M = 4.42$, $SD = 1.79$, $p < .001$). Hypothesis 1 was confirmed. Ancillary analyses showed that before confinement self-approach scores were significantly higher than self-avoidance goals ($p < .001$). The pattern was reversed during confinement ($p < .001$). While improving themselves was athletes' goal

with the highest score before confinement, avoiding regression became their goal with the highest score during confinement. Figure 1 illustrates the previous results.

Insert Figure 1 about here

After standardizing the relevant variables to reduce multicollinearity, we conducted hierarchical regression analyses to examine how gender (women = 0, men = 1), age, sport level (Step 1), self-based goals (Step 2), and the interactions between self-based goals and gender, age, and sport level (Step 3) predicted intention to exercise during confinement. Gender, age, and sport level were included in the hierarchical regression analyses to control for these variables. The results showed that self-approach and self-avoidance goals were both positive predictors of intention to exercise during confinement. Hypothesis 2 was confirmed. Ancillary analyses finally showed that results did not change when the control variables were removed. A significant interaction was also found between self-avoidance goals and sport level and was then decomposed by simple slopes analyses (Aiken & West, 1991) at ±1SD. This interaction effect was not represented because simple slope analysis did not reveal significant findings (p = .726 for low sport level and p = .457 for high sport level). Table 1 shows the detailed results of the final regression analyses.

Insert Table 1 about here

Discussion

The results of the present study indicated that the confinement situation and the physical exercise restrictions due to the Covid-19 outbreak influenced self-based goals of regular athletes of different sport levels. Self-approach goals decreased but kept their predicting role on intention to exercise already found in the literature before confinement (Lochbaum et al., 2020). Self-avoidance goals increased, became the goals with the highest score, and appeared to be positive predictors of intention to exercise during confinement.

These results reinforced the fact that achievement goals are context-specific. Benita and colleagues (2014, 2017) highlighted that adopting mastery-approach goals in a controlled context (with constraints) promoted lower positive emotional experiences than in an autonomous context (with choice and volition). The strong constraints associated with physical exercise, implemented by the French authorities to limit the spread of Covid-19, may be experienced by regular athletes as a form of controlled context which have impacted both their self-based goals and their predicting role on intention to exercise. Moreover, self-avoidance goals combine positive (intrapersonal) and negative (avoidance) components and, theoretically, positive or negative outcomes may be induced depending on the predominant component (Senko & Freund, 2015). In the context of physical exercise during confinement, self-avoidance goals were more likely to be positive predictors of intention to exercise because they were more functionally-congruent with the context (Conroy, Cassidy, & Elliot, 2008), which was not the case before confinement. The present study conducted with athletes in the particular context of confinement reinforces the general assumptions that "different achievement goals may be better suited for different types of situations" (Barron & Harackiewicz, 2001, p. 708), that mastery-avoidance goals – especially self-avoidance goals – are not always maladaptive (Mascret, Nicolleau, & Ragot-Court, 2020; Senko & Freund, 2015), and that shifting among multiple goals according to the requirements of the situation may be beneficial for individuals, which was specifically identified here with regular athletes.

Some limitations of the present study need to be acknowledged. First, the study used a retrospective design and the particular context of confinement could have been influenced athletes' answers when they were asked to remember and to rate their self-based goals before confinement. Secondly, the study did not investigate participants' types of sport. It would have been interesting to examine for instance whether the pattern of results remained the same between individual and team sports.

While improving themselves was the goal with the highest score before confinement, avoiding regression became the athletes' goal with the highest score during confinement and predicted their intention to exercise during this period. This is of particular broad interest because these results confirmed that human beings are capable of changing their goals in order to adapt as well as possible to a particular situation, here a situation as exceptional as confinement linked to a pandemic.

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Table 1. *Summary of hierarchical regression analyses predicting intention to exercise during confinement*

	Intention to exercise	
	R^2 (ΔR^2)	β
Step 1	.006 (-)	
Gender[1]		-0.03
Age[1]		.10**
Sport level		.03
Step 2	.188 (.182***)	
Self-approach goals[1]		.51***
Self-avoidance goals[1]		.38***
Step 3	.201 (.013)	
Self-approach goals X Gender		.07
Self-avoidance goals X Gender		-0.03
Self-approach goals X Age		-0.01
Self-avoidance goals X Age		-0.01
Self-approach goals X Sport level		-0.19
Self-avoidance goals X Sport level		-0.21*

Note. *$p < .05$, **$p < .01$, ***$p < .001$

[1]The β coefficients from the final regression equation
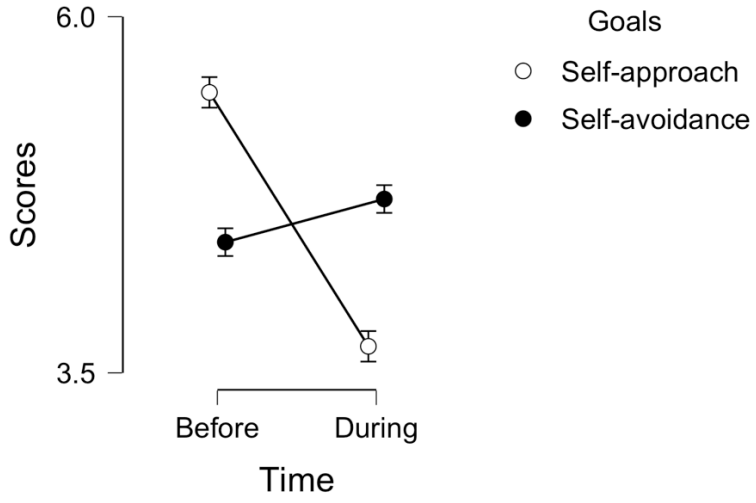
Figure 1. *Self-based goals scores before and during confinement.*