Effects of Self-Handicapping Strategies on Anxiety Before Athletic Performance
Guillaume Coudevylle, Kathleen Martin Ginis, Jean-Pierre Famose, Christophe Gernigon

To cite this version:

HAL Id: hal-01343255
https://hal.univ-antilles.fr/hal-01343255
Submitted on 8 Jan 2018

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
Effects of Self-handicapping Strategies on Anxiety Prior to Athletic Performance

Guillaume R. Coudevylle
Université de Montpellier 1, France

Kathleen A. Martin Ginis
McMaster University, Canada

Jean-Pierre Famose
Université de Pau et des Pays de l’Adour, France

Christophe Gernigon
Université de Montpellier 1, France
Abstract

The purpose of the present experiment was to examine whether the use of self-handicapping strategies influences participants’ anxiety levels prior to athletic performance. Seventy-one competitive basketball players participated in the study. A repeated measures design was utilized, such that state cognitive and somatic anxiety intensity and direction were measured before and after participants were given the opportunity to self-handicap. Overall, participants reported their cognitive anxiety to be more facilitating after they had the opportunity to self-handicap. Thus, participants who were given the opportunity to self-handicap (i.e., use claimed and behavioral self-handicaps), reported greater increases in perceptions of cognitive anxiety as facilitating their performance. This study shows the importance of looking at anxiety direction, and not just anxiety intensity, when examining self-handicapping’s effects on anxiety. Implications for sport psychologists are proposed.

Key words: Self-handicapping, Anxiety, Intensity, Direction, Sport
Effects of Self-handicapping Strategies on Anxiety Prior to Athletic Performance

Self-handicapping was first described by Berglas and Jones (1978), who defined the phenomenon as “any action or choice of performance setting that enhances the opportunity to externalize (or excuse) failure and to internalize (reasonably accept credit for) success” (p. 406).

Self-handicaps are used as an impression management strategy (see Kolditz & Arkin, 1982; Prapavessis, Grove, & Eklund, 2004) and provide a means for protecting or even enhancing one’s self- and public image. Self-handicaps also blur the relationship between ability and performance. A self-handicapping athlete who performs poorly can attribute failure to the performance impediment rather than ability or competence, whereas the athlete who performs well creates the impression of being especially competent and talented, because success was achieved despite impediments (see Tice, 1991). Self-handicaps can be defined according to their manifestation. The two manifestations of self-handicaps are behavioral and claimed self-handicaps (see Hirt, Deppe, & Gordon, 1991; Leary & Shepperd, 1986). Examples of behavioral handicaps include alcohol consumption (e.g., Bordini, Tucker, Vuchinich, & Rudd, 1986), the selection of unattainable goals (Greenberg, 1985) or the lack of practice (e.g., Harris & Snyder, 1986; Tice & Baumeister, 1990). Examples of claimed self-handicaps include declarations that one is very anxious (e.g., Smith, Snyder, & Handelsman, 1982) or experiencing various physical and psychological symptoms (e.g., Smith, Snyder, & Perkins, 1983; Snyder & Smith, 1982).

Self-handicapping in sport has been conceptualised as both a trait (e.g., Ommundsen, 2001, 2004; Pulford, Johnson, & Awaida, 2005) and a state phenomenon (e.g., Elliot, Cury, Fryer, & Huguet, 2006; Martin & Brawley, 2002; Standage, Treasure, Hooper, & Kuczka, 2007). Individual studies of self-handicapping have used either or both of these approaches (e.g., Carron, Prapavessis, & Grove, 1994; Greenlees, Jones, Holder, & Thelwell, 2006; Ryska, Yin, & Cooley, 1998). The trait approach is typically concerned with whether dispositional assessments of self-
handicapping tendencies—such as scores on the trait Self-Handicapping Scale (Jones & Rhodewalt, 1982)—are related to sport-relevant psychological and behavioral variables. For example, studies have shown that dispositional self-handicapping tendencies are negatively correlated with precompetitive mood states (Prapavessis & Grove, 1994), perceptions of group cohesion (Carron et al., 1994), practice effort (Rhodewalt, Saltzman, & Wittmer, 1984), and global self-esteem (Prapavessis & Grove, 1998). Other studies have shown that dispositional self-handicapping tendencies are positively correlated with impression management concerns (Hudson, Williams, & Stacey, 1998), a high level of optimal experience during competitive performances (Bailis, 2001), and the use of emotion-orientated coping strategies (Prapavessis, Grove, Maddison, & Zillmann, 2003).

Unfortunately, the validity of the Self-Handicapping Scale in the sport domain has been heavily criticized (Martin & Brawley, 1999), thus undermining the utility of a dispositional approach. As such, several investigators have utilized a situational approach to study self-handicapping, and have focused on identifying factors that might be associated with athletes’ use of self-handicaps immediately prior to an evaluated event. Within the sport domain, studies have shown that situational use of self-handicaps is associated with performance-avoidance goals (Elliot et al., 2006), low self-efficacy and low self-esteem (Martin & Brawley, 2002). Therefore, the present study utilized a situational approach to examine the relationship between situational manifestations of self-handicapping immediately prior to a basketball task, and state sport competition anxiety.

**Self-handicapping and Anxiety**

Two approaches have been used to study the relationship between self-handicapping and sport competition anxiety. With the first approach, researchers have examined anxiety as a possible determinant of self-handicapping. These studies have shown that trait competition
anxiety is positively correlated with situational manifestations of claimed self-handicapping (Ferrand, Champely, & Brunel, 2005) and that state competition anxiety is positively correlated with trait measures of self-handicapping (Prapavessis et al., 2003). The second approach has been to examine whether the use of self-handicaps can decrease state sport competition anxiety.

Theorists have suggested that self-handicapping can decrease performance anxiety by reducing pressure to perform well (see Leary & Shepperd, 1986; Snyder, 1990). In the one study to use this approach, Ryska and colleagues (1998) hypothesized that among youth athletes who scored high on a trait measure of self-handicapping, those who used more claimed self-handicaps prior to a sport competition would report less sport competition anxiety than those who used fewer claimed self-handicaps. This hypothesis was not supported.

However, Ryska and colleagues (1998) utilised a correlational design whereby athletes completed the anxiety measure just before they competed. To properly test the effects of self-handicapping on anxiety, it would be better to measure anxiety before and after athletes were given the opportunity to self-handicap. Using a pre-test/post-test design it would be possible to determine if athletes felt less anxiety after self-handicapping. In addition, the null findings of Ryska and colleagues could be explained by the fact that they did not analyse the anxiety direction (i.e., how people perceived their anxiety as being favourable for the performance vs. unfavourable for the performance). Indeed, Jones and Swain (1992) showed that simply measuring anxiety intensity does not indicate if anxiety is perceived as unfavourable or favourable to performance (i.e., interpretation of this anxiety). Although there was no relationship between the intensity of cognitive and somatic anxiety and the use of self-handicapping, participants could have interpreted both anxiety states as being more facilitative to performance than they did before self-handicapping.
With the limitations of Ryska and colleagues (1998) in mind, the purpose of the present experiment was to examine whether the use of self-handicapping strategies influences participants’ anxiety levels prior to athletic performance. Specifically, we examined if participants felt less anxiety (i.e., cognitive and somatic) after the use of claimed and behavioral self-handicaps. Additionally, because anxiety is not always perceived in a negative way (Jones & Swain, 1992), we also examined whether self-handicapping was associated with how participants perceived their anxiety. It was predicted that participants would feel less anxiety (i.e., cognitive and somatic) and perceive anxiety to be more facilitating for their performance (i.e., cognitive and somatic) after the use of self-handicapping strategies.

Method

Participants

Seventy-one competitive basketball players, 31 men (M age = 20.5 years; SD = 3.5) and 40 women (M age = 19.3 years; SD = 2.6), participated in the study. All players competed at the French regional level—a sufficiently competitive level to ensure that participants would be personally invested in the experimental task and its outcome. Note that the data from 56 participants represent a secondary analysis of data currently under review (Coudevyille, Martin Ginis, Gernigon, & Famose, 2008).

Measure

State Cognitive and Somatic Anxiety. State anxiety was measured with a French version of the Competitive State Anxiety Inventory – 2 (CSAI-2; Martens, Vealey, & Burton, 1990) -- l’Echelle d’Etat d’Anxiété à la Compétition (EEAC; Cury, Sarrazin, Peres, & Famose, 1999). This questionnaire consists of 7-items measuring cognitive anxiety and 7-items measuring somatic anxiety. For each item, participants indicated the extent to which they were currently experiencing each anxiety symptom, using a Likert scale ranging from 1 (not at all) to 4
Because athletes’ interpretation of anxiety symptoms has been identified as an important dimension for consideration, we also measured the direction of state anxiety using a protocol developed by Jones and Swain (1992). After each CSAI-2 item, participants indicated whether their level of anxiety (i.e., anxiety intensity) would have a favourable or unfavourable effect on their upcoming performance. Responses were made on a Likert scale ranging from -3 (very unfavourable) to +3 (very favourable). To avoid the possibility of participants claiming anxiety symptoms as a form of claimed self-handicap, the anxiety scale was presented confidentially and participants were told that only the researcher would see their responses.

Claimed Self-handicapping. A state measure similar to that used by Martin and Brawley (Study 2, 2002) was used to measure claimed self-handicapping. Yet whereas Martin and Brawley’s scale consisted of just 7 possible impediments, our scale consisted of 13 impediments that athletes may use as self-handicaps such as: “I am feeling tired,” “I have personal concerns in this moment,” “I am not feeling well mentally,” “I am not sufficiently prepared for the test,” “I am feeling well,” and “I am approaching the test under the best conditions.” (Note that the last two items were reverse-scored.) The impediments were those most frequently cited by athletes in Carron and colleagues’ studies of self-handicapping in sport (Carron et al., 1994; Hausenblas & Carron, 1996). In addition, participants were presented with a fourteenth, open-ended item that gave the opportunity to list any other potential impediments to their performance. For each item, participants indicated whether the impediment was present (yes/no), and the extent to which each impediment would interfere with their performance (i.e., perceived impact), using a scale ranging from 0 (not at all) to 6 (extremely). A claimed self-handicapping score was calculated by averaging the impact scores for all impediments that were identified as “present.” Higher scores were indicative of greater claims of performance impediments, and as such, greater self-handicapping.
When athletes use claimed self-handicaps, they cite only one or two performance impediments. It is unusual for an athlete to cite several claimed self-handicaps, probably because only a single self-handicapping claim is needed to protect an athlete’s image, and the use of multiple self-handicaps could have considerable self-presentational liabilities. Given that athletes do not typically endorse multiple self-handicaps, it is inappropriate to calculate an internal consistency index for this type of self-handicapping measure (i.e., because athletes are not expected to respond similarly to all of the scale items). Construct validity for this approach to measuring self-handicapping has been demonstrated by studies that have shown significant correlations between the claimed impact of performance impediments and theoretically meaningful constructs such as self-esteem, self-presentational efficacy, and performance self-efficacy (Coudevyille, Martin Ginis, & Famose, in press; Martin & Brawley, 2002).

Behavioral Self-handicapping. According to Prapavessis and colleagues (2004), a lack of preparatory effort preceding a test constitutes an index of behavioral self-handicapping within the context of sports participation. Thus, for the purpose of the present experiment, behavioral self-handicapping was operationalized as the number of preparatory shots taken during a warm-up period immediately prior to performance the experimental task. A short practice time has been identified as a self-handicapping strategy in previous studies because it is detrimental to performance (see Harris & Snyder, 1986; Tice, 1991). No participant had previous experience with the experimental task.

Studies have provided evidence of the validity of practice time and effort as an index of behavioral self-handicapping. For example, Rhodewalt and colleagues (1984) showed that high self-handicapping swimmers withheld practice effort prior to competitions compared to low self-handicapping swimmers. In addition, other studies have shown that the amount of time spent
warming up/practicing is related to self-handicapping (e.g., Deppe & Harackiewicz, 1996; Tice & Baumeister, 1990).

Performance. Performance was scored by counting the number of successful shots and passes completed on an obstacle course. Specifically, the performance consisted of 2 free-throws, 1 lay-up, 1 jump shot and 1 three-point shot. The participants scored 1 point for each. Then, for each repetition of the course, participants scored 2 points when they dribbled the ball between three cones, while bouncing the ball between the legs and passing it behind the back. They lost 1 point for each technical error. Performance scores could range from 0 to 11.

The Experimental Task

The task consisted of completing three repetitions of an obstacle course laid out on a standard basketball court. The test began with the completion of two free-throws followed by running to mid-court, and then turning around backwards and performing a backward defensive shuffle to the end of the court. Then, the participant picked up a basketball and dribbled it to mid-court. At mid-court, the participant dribbled the ball between three cones, while bouncing the ball between the legs and passing it behind the back. The participant then continued to the basket and attempted a lay-up. After the lay-up, the participant repeated the entire course again and finished with a jump shot. The course was repeated a third time, finishing with a three-point shot. This is the same task as reported in Coudevyllle and colleagues (in press).

Procedure

To test our hypotheses, anxiety was measured before and after participants were given the opportunity to self-handicap. To maximize the likelihood of self-handicapping, an experimental situation was created in which factors that are known to elicit self-handicapping (for a review, see Prapavessis et al., 2004; Self, 1990) were made salient. Specifically, the testing situation emphasized public performance, an emphasis on results, social comparisons of one’s
Self-handicapping and Anxiety in Sport

performance with others, and public awareness of the use of self-handicaps. Participants performed the test in the presence of spectators, coaches and other players, were told that their test results would be used to identify the best and worst players in the region, and that their scores would be compared with their teammates’ scores (see Coudevylle et al., in press).

After hearing and reading this information, participants completed baseline measures of anxiety intensity and direction. Then, they completed the measure of claimed self-handicapping. To make sure that all participants realized that the questionnaire provided an opportunity to use claimed self-handicaps, participants were told:

“The following questionnaire is intended to assess your general actual state in order to comment on your results today. It will allow those that will evaluate your competence (the experimenter, your trainer, the other players, the spectators) to consider your current personal situation when authenticating your results and comparing them with those of the other participants. Your responses to this questionnaire will be made public along with your results so that those who evaluate your performance will be better able to evaluate your competence.”

Thus, the true purpose of the scale was masked in order to obtain honest replies.

After completing the claimed self-handicapping measure, the experimenter explained (orally and through written instructions) the warm-up procedure. Specifically, participants were told that they could have as many practice shots as they desired to warm-up. To make sure that all participants realized that the number of preparatory shots could serve as a behavioral self-handicap, the experimenter indicated that the number of preparatory shots could provide an explanation for a good or bad performance on the test. He also reminded players that a good warm-up is essential to a good performance. Therefore, participants knew that the lack of practice before the test could be detrimental to their performance (see Harris & Snyder, 1986; Tice, 1991). This was a reasonable claim, given that no participant had previous experience with the
experimental task. As no participant had previously performed the experimental task, one can assume that a warm-up would be essential to successful performance of the task. After hearing and reading this information, participants completed the second measures of anxiety intensity and direction. These measures were administered before rather than after the warm-up (adapted from Elliot et al., 2006; Hirt, Deppe, & Gordon, 1991). This process was used in order to avoid a break between the warm-up and the test, and participants losing the benefits of their preparation.

Participants then warmed-up in two periods. The first warm-up period (15 minutes) consisted of a quick run, stretching and repetitions of the course, but without taking any practice shots. The second warm-up period consisted of taking practice shots. Although participants performed the experiment in groups, they warmed up individually (i.e., no other players were on the court at the same time, but other players were present as observers). The experimenter counted the number of preparatory shots taken as the measure of behavioral self-handicapping. After the participant indicated to the experimenter that she/he was finished warming up, the experimental task proceeded. Once the participant had completed the task, the participant was debriefed regarding the true purpose of the study. Additionally, the first author provided each team with a lecture and proposed a discussion on self-handicapping and its consequences.

Results

Descriptive statistics for the self-handicapping measures are shown in Table 1. On average, men cited 4.67 performance impediments were present and women indicated the presence of 3.95 performance impediments. The mean impact of these impediments was 3.85 for men and 3.83 for women, indicating that participants perceived the impediments would have a moderate impact on their performance. With regards to behavioral self-handicapping, men took an average of 21.64 practice shots and women took an average of 15.15 shots. Descriptive statistics for the anxiety measures are shown in Table 2. Because there were sex differences on
several of the dependent measures, sex was subsequently treated as an independent variable in the following analyses.

To determine if participants felt less anxiety (i.e., cognitive and somatic) and perceived anxiety to be more facilitating after the opportunity to self-handicap, separate 2 (gender) × 2 (time) repeated measures ANOVAs were conducted on cognitive and somatic anxiety intensity and direction. The ANOVA for cognitive anxiety intensity showed a main effect for gender \([F(1, 69) = 5.04, p < .05]\), but not for time, and no interaction effects \((ps > .05)\). The ANOVA for cognitive anxiety direction showed a main effect for gender \([F(1, 69) = 7.92, p < .01]\), and a main effect for time \([F(1, 69) = 5.91, p < .05]\), but no interaction effects \((p > .05)\). As shown in Table 2, women perceived more cognitive anxiety than men and perceived their anxiety to be less facilitating. Overall, participants reported their cognitive anxiety to be more facilitating after they had the opportunity to self-handicap. The ANOVAs for somatic anxiety intensity and direction showed no main effect for gender, or time, and no interaction effects \((all ps > .05)\). Thus, participants who were given the opportunity to self-handicap (i.e., claimed and behavioral self-handicapping) reported greater increases in perceptions of cognitive anxiety as facilitating their performance.

**Discussion**

The purpose of the present experiment was to determine if participants felt less anxiety and perceived anxiety to be more facilitating after the use of claimed and behavioral self-handicaps. The results provided minimal support for our hypotheses. Claimed self-handicapping did not have any effect on the intensity of cognitive or somatic anxiety, and behavioral self-handicapping did not have any effect on the intensity of somatic anxiety. However, participants
who engaged in more behavioral self-handicapping (i.e., took fewer preparatory shots), reported
greater increases in perceptions of cognitive anxiety as facilitating their performance.

Our failure to find an effect of self-handicapping on anxiety intensity is contrary to
theorizing (Leary & Shepperd, 1986; Snyder, 1990) but is consistent with the null findings
reported by Ryska and colleagues (1998). These results could be explained by the fact that the
measure of anxiety intensity does not indicate if this anxiety is perceived as unfavourable or
favourable to performance (Jones & Swain, 1992). Indeed, although there was no difference on
the intensity of cognitive and somatic anxiety after the opportunity to self-handicap, participants
interpreted their cognitive anxiety states as being more facilitative to performance than before
self-handicapping. Our results showed that to examine the influence of self-handicapping
strategies on anxiety, it is necessary to analyse the direction of this anxiety. It seems that the
effects of self-handicapping on anxiety are reflected in improvements in athletes’ perceptions of
their anxiety--self-handicapping may help athletes feel more ready and optimally aroused for the
upcoming challenges of an evaluated performance. This interpretation is consistent with Bailis’
(2001) finding that athletes who scored higher on a dispositional measure of self-handicapping
reported higher levels of optimal experience during competitive performances than athletes who
were less prone to self-handicapping. Our study is the first to demonstrate the effects of self-
handicapping on anxiety direction and our results speak to the importance of looking beyond
anxiety intensity (Jones & Swain, 1992) when examining self-handicapping’s effects on anxiety.

Self-handicapping affected the perceived beneficence of cognitive, but not somatic
anxiety. There are at least two plausible explanations for this finding. First, as shown in Table 1,
athletes already had fairly positive perceptions of their somatic anxiety at baseline. Thus, there
may have been little space for improvement in anxiety perceptions after self-handicapping. A
second possibility reflects differences in factors that underlie cognitive and somatic anxiety.
Cognitive anxiety--like self-handicapping--stems from worries about evaluative aspects of an upcoming performance. In contrast, somatic anxiety stems from conditioned responses to aspects of competition, such as the presence of an audience (Martens et al., 1990; Jones, 1995). As self-presentational concerns regarding an upcoming sports performance have been shown to be more strongly correlated with cognitive than somatic sport competition anxiety (Bray, Martin, & Widmeyer, 2000; Wilson & Eklund, 1998), it makes sense that a strategy designed to allay self-presentational concerns (i.e., self-handicapping), would have greater effects on cognitive than somatic elements of anxiety.

Another interesting observation was that the analyses showed a main effect for gender on cognitive anxiety (intensity and direction), but no interactive effects with self-handicapping were observed. Gender did not moderate the effects of self-handicapping on anxiety intensity or direction. Although there may be differences in the extent to which male and female athletes use self-handicaps (Hausenblas & Carron, 1996; Hirt, McCrea, & Kimble, 2000), our data suggest that the effects of self-handicapping on anxiety do not differ as a function of gender.

Despite the contributions of our study to understanding the effects of self-handicapping on anxiety, a couple of limitations warrant mention. First, although the internal validity of our study was enhanced by the use of a controlled basketball task, it is not known whether our findings would generalize to real-world basketball games. However, given that athletes are more likely to use self-handicaps when they perceive an event as highly important (Rhodewalt et al., 1984), we suspect that the findings of the present study would be even more pronounced during actual game situations. A second limitation is that we do not know if all participants considered the warm-up to be equally important. A recommendation for future research is that investigators pre-measure athletes’ perceptions of the importance of warming up, and their perceived ideal duration of a warm-up. And finally, as with all self-handicapping studies, it is impossible to know if athletes’
claims of performance impediments and their reductions in practice time were purely motivated by the self-handicapper’s desire for self-enhancement or protection. In future research, it may be helpful to conduct post-experimental interviews in order to better understand athletes’ motives for these behaviours.

From an applied perspective, our results suggest that coaches and sport psychologists need to be prudent when intervening with self-handicapping athletes in order to allow for their psychological protection. Although our results showed that self-handicapping helped to change the direction of anxiety, it is not known if there were negative effects of self-handicapping on performance. Future research is needed to examine whether the anxiolytic benefits of self-handicaps are overshadowed by their performance detriments.
References


Table 1.

Descriptive Statistics for Self-handicapping Strategies and Performance

<table>
<thead>
<tr>
<th></th>
<th>Claimed Self-handicap Impact</th>
<th>Mean Impact</th>
<th>Behavioral Self-handicapping</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Total</td>
<td>4.26</td>
<td>2.16</td>
<td>15.73</td>
<td>7.50</td>
</tr>
<tr>
<td>Men</td>
<td>4.67</td>
<td>2.15</td>
<td>16.77</td>
<td>7.06</td>
</tr>
<tr>
<td>Women</td>
<td>3.95</td>
<td>2.14</td>
<td>14.92</td>
<td>7.82</td>
</tr>
</tbody>
</table>
Table 2.

Means and Standard Deviations for the Measures of Anxiety

<table>
<thead>
<tr>
<th></th>
<th>Pre-Self-handicapping</th>
<th>Post-Self-handicapping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Cognitive Anxiety</td>
<td>13.80</td>
<td>4.24</td>
</tr>
<tr>
<td></td>
<td>Men$^+$</td>
<td>12.41</td>
</tr>
<tr>
<td></td>
<td>Woman$^+$</td>
<td>14.87</td>
</tr>
<tr>
<td>Cognitive Anxiety Dir.</td>
<td>3.32</td>
<td>9.69</td>
</tr>
<tr>
<td></td>
<td>Men$^{++}$</td>
<td>6.45</td>
</tr>
<tr>
<td></td>
<td>Woman$^{++}$</td>
<td>.90</td>
</tr>
<tr>
<td>Somatic Anxiety</td>
<td>11.21</td>
<td>2.98</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>11.19</td>
</tr>
<tr>
<td></td>
<td>Woman</td>
<td>11.22</td>
</tr>
<tr>
<td>Somatic Anxiety Dir.</td>
<td>9.94</td>
<td>7.30</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>11.03</td>
</tr>
<tr>
<td></td>
<td>Woman</td>
<td>9.10</td>
</tr>
</tbody>
</table>

$^*$main effect for time, $p < .05$

$^+$main effect for sex, $p < .05$

$^{++}$main effect for sex, $p < .01$