

Petra Jansen & Stefanie Pietsch

# Enhanced self-compassion in female martial arts athletes

## Abstract

On the one side, studies of martial arts refer to enhanced personal and social opportunities, on the other side they point to an increased aggressiveness or antisocial behaviour. Furthermore, it is often assumed that martial arts entail some aspects of mindfulness, additionally to self-compassion becoming popular in sports. Therefore it is the main goal of this study to investigate if female martial arts athletes differ in their self-compassion compared to female athletes who practice the team sport handball or just the same amount of sports, but not in a team. Ninety-four young women participated and completed the self-compassion scale. The results showed significant higher levels of the positive aspects of self-compassion, namely self-kindness, common humanity and mindfulness for female martial arts athletes compared to the control group. Handball players' levels of self-compassion neither differed from the control group nor from the group of martial arts. The results are discussed as being a promising start to investigate self-compassion in different types of martial arts in further detail.

## Keywords

self-kindness, mindfulness, martial arts, common humanity, self-criticism, team-sport

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## 1 Introduction

The training of martial arts combines physical movements with strategy and a variety of coordinated techniques including physical, mindful, and spiritual practices (Burke, Al-Adawi, Lee, & Audette, 2007). There are many studies about the positive and negative outcomes of martial arts practice. On the one side, the studies refer to enhanced personal and social opportunities, on the other side they point to an increased aggressiveness or antisocial behaviour (Vertonghen & Theeboom, 2010). The specific martial arts techniques are mostly embedded in a philosophy with a system of values and tradition (Green, 2001). Some researchers propose that martial arts in general can be seen as one form of mindfulness and can be classified as mindfulness movements, because they are practiced with a high level of concentration. A positive change in stress perception for martial arts programs which lasted from 10 to 18 weeks has been reported (Naves-Bittencourt et al., 2015). Also, the experience of mindfulness was elevated with martial arts practice (e.g., Caldwell, Emery, Harrison, & Greeson, 2011). Besides mindfulness, the aspect of self-compassion in relation to well-being, stress reduction and for the general health has received a lot of attention in research. Since the first studies on self-compassion in 2003 (e.g., Neff, 2003), there were more than 1600 studies or dissertations until mid-2018 (Bluth & Neff, 2018). But why does the concept of self-compassion receive so much attention in research and the popular media?

## 2 Self-compassion

First of all, self-compassion describes the compassion for the own person when one-self is suffering. It comprises the elements of self-kindness instead of self-judgment, mindfulness instead of over-identification and common humanity instead of isolation (Neff, 2003). Self-kindness means to be gentle with oneself when experiencing pain or a harmful situation, common humanity describes the insight that all humans experience suffering and joy, and mindfulness relates to the non-judgmental presence in the moment. Self-compassion means to be equally kind to the own person as to a friend who is suffering. One recently published meta-analysis on the effect of interventions to enhance self-compassion showed positive results on psychological outcomes. The meta-analysis included randomized controlled trials, and the results showed large effects of self-compassion interventions on eating behavior and rumination (i.e., improvement in ruminative thought patterns). The effects were moderate for self-compassion itself, stress, depression and mindfulness, self-criticism and anxiety (Ferrari et al., 2019). Even at follow-up, self-compassion groups had slightly reduced depression symptoms and their self-compassion values maintained stable. Maybe self-compassion might buffer the manifestation of a depression.

An interesting question is whether interventions to improve self-compassion might be worth applying in a sport context. In many sports, competition is relevant and the pressure is high which often leads to the phenomenon on choking under pressure (Gröpel & Medsagno, 2019), i.e., performing worse than expected given one's skill level.

## 2.1 Self-compassion in sport

Just like mindfulness, the concept of self-compassion is getting more and more popular in sports science: In one study it was shown that for young female athletes, self-compassion is more important for young women's sport performance than self-criticism (Killham, Mosewich, Mack, Gunnel, & Ferguson, 2018). Also, self-compassion and well-being are related in young athletes (Ferguson, Kowalski, Mack, & Sabiston, 2014). In another study, it has been investigated how elite female athletes perceived and experienced mental toughness and self-compassion with regard to their own sport success (Wilson, Bennett, Mosewich, Faulkner, & Crocker, 2019). Among others, the results showed that common humanity, mindfulness and self-kindness were keys to cope with sport-related adversity. The authors assumed that self-compassion might be especially useful for female athletes, because among other aspects they reported more teammate related stressors than men (Nicholls & Polman, 2007). Self-compassion might be helpful for female athletes to handle emotional difficulties they might experience in sport (Mosewich, Crocker, Kowalski, & DeLongis 2013).

## 2.2 Self-compassion in martial arts

We assume that martial arts athletes show more self-compassion than other athletes. All martial arts share the goal of defending oneself from a physical threat and some of them include a high sense of spirituality. Martial artists spend a lot of time with themselves, while practicing throws and specific combinations and are paying focused attention to the position of their own body (Callan, 2018). The focused attention to the own body is one central concept in all mindfulness concepts. Because mindfulness is one aspect of self-compassion it is assumed that also self-compassion in general is enhanced. During a competition, the contact with the partner is very conscious and they have to be aware of their own position and power the whole time. They also have to demonstrate high self-kindness, another aspect of self-compassion, if they lose in a direct combat.

Because it is well-known that sports in general can enhance the mood of each athlete, two control groups who do the same amount of sports, were integrated in this study. The first control group comprised athletes who practice a team sport. We might assume that those athletes feel a higher common humanity due to the social affordance of the team. Furthermore, we selected a control group of physical education students, who practice all kinds of different sports but do not have a high emphasize on mindfulness, common humanity or self-kindness. In contrast to the combat sport and team sport group, they don't have a specific team or training group, but constantly changing sport groups.

## 3 Methods

### 3.1 Participants

Ninety-four young women participated in this study, among them  $n = 32$  physical education teacher education students ( $M_{\text{age}} = 20.47$  years,  $SD = 2.48$ ),  $n = 30$  handball players ( $M_{\text{age}} = 21.53$  years,  $SD = 3.98$ ) and  $n = 32$  martial arts athletes ( $M_{\text{age}} = 21.25$ ,  $SD = 2.24$ ). There was no significant age difference between the three groups,  $F(2, 91) = 1.08$ ,  $p = .345$ , partial  $\eta^2 = .023$ . From the martial arts athletes, 23 women practiced judo, four kick-boxing, two taekwondo and three boxing. The 32 students of physical education were included if they practiced one hour of sport beside their practical courses of physical education at most. Six of them practiced volleyball, five dancing, four tennis, three swimming, two of them practiced running, climbing or badminton, and one of them either soccer, basketball, gymnastics, athletics, rowing, cross-country skiing, or cross-fit. Regarding the practice of sport per week measured in hours there was a significant difference between the three groups,  $F(2, 91) = 8.15$ ,  $p = .001$ ,  $\eta_p^2 = .152$ . The handball players ( $M = 4.67$ ,  $SD = 1.93$ ) practiced less than the martial arts athletes ( $M = 6.03$ ,  $SD = 1.98$ ) and the physical education students ( $M = 6.91$ ,  $SD = 2.60$ ), both Bonferroni corrected post-hoc tests  $p < .05$ . The practice of martial arts athletes and physical education students did not differ ( $p > .100$ ). Regarding the practice of any kind of sport in years, there was no difference between the three groups (martial arts athletes:  $M = 11.38$ ,  $SD = 4.25$ , handball players:  $M = 12.23$ ,  $SD = 4.73$ , physical education teacher education students:  $M = 10.22$ ,  $SD = 3.17$ ),  $F(2, 91) = 1.90$ ,  $p = .155$ ,  $\eta_p^2 = .040$ . All athletes gave their written consent for participation. The experiment was conducted according to the ethical guidelines of the Helsinki declaration.

### 3.2 Material

**Demographic questionnaire.** With this questionnaire, the age, the type of sport, the duration and frequency and the type of studies or profession were registered.

**Self-compassion scale (SCS; Neff, 2003).** The self-compassion scale comprises the following six subscales: self-kindness (“When I’m going through a very hard time, I give myself the caring and tenderness I need”), self-judgment (“I’m disapproving and judgmental about my own flaws and inadequacies”), common humanity (“When I’m down and out, I remind myself that there are a lots of other people in the world feeling like I am”), isolation (“When I’m feeling down I tend to feel like most other people are probably happier than I am”), mindfulness (“When something upsets me I try to keep my emotions in balance”) and over-identification (“When I’m feeling down I tend to obsess and fixate on everything that’s wrong”). Responses to the 26 items are given on a scale from 1 = *almost never* to 5 = *almost always*. For the original version, an internal consistency of  $\alpha = .92$  for the overall score has been reported and Cronbach’s  $\alpha$  of the six subscales varies between .80 and .88 (Neff, 2003). New results support the use of one total score as well as the six subscales (Neff, Tóth-Király, Yarnell, Arimitsu, & Castilho, 2018). For this study, we used the German translation of the SCS (Hupfeld & Ruffieux, 2011), with Cronbach’s  $\alpha$  varying between .70 (over-identification) and .83 (self-kindness) for the six subscales.

### 3.3 Procedure

The data were retrieved within a larger study investigating the effect of stereotypes in cognitive performance of female athletes. The athletes completed the self-compassion scale either at the laboratory at the university or their own sports club in a single session.

**Statistical analysis.** The SCS total score was calculated and a univariate analysis with the factor “group” was conducted. Furthermore, a multivariate analysis of variance with the factor “group” was run with the six subscales of the SCS as dependent variables. Because the participants differed in the amount of sports they practiced per week, the same analyses were run with hours practiced sports per week included as a covariate.

## 4 Results

Descriptive statistics are presented in table 1.

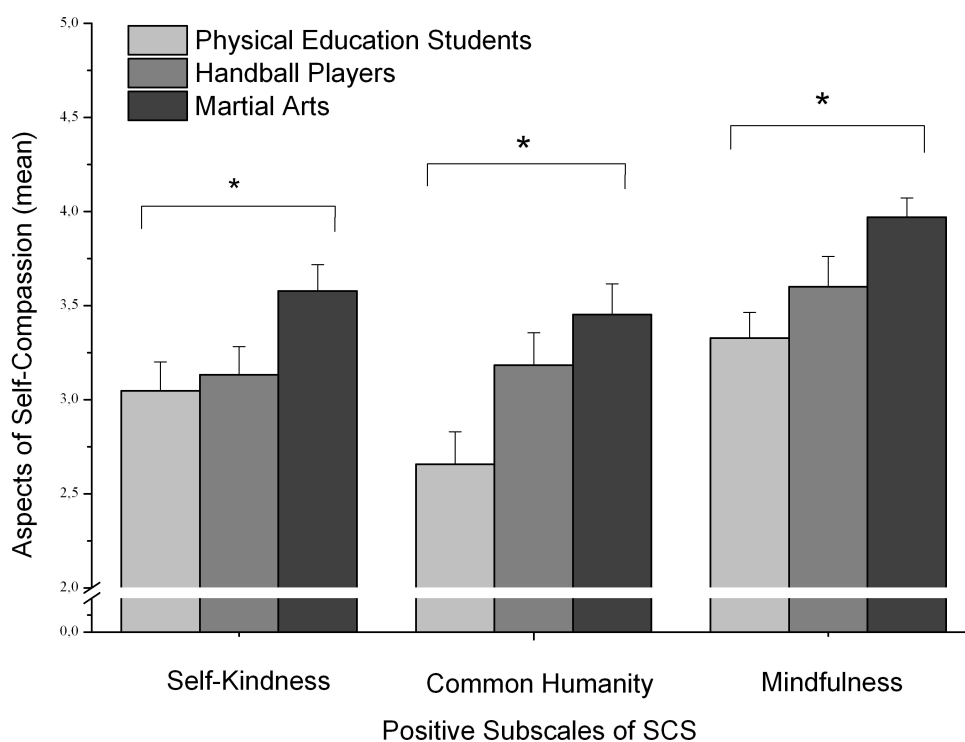
*Table 1: Means and standard deviations (in parentheses) of the six SCS subscales split by sport group*

	Self-Kindness	Self-judgment	Common Humanity	Isolation	Mindfulness	Over-Identification
<b>Control Group (n = 32)</b>	3.05 (.87)	2.81 (1.13)	2.65 (.98)	2.40 (1.08)	3.32 (.77)	3.05 (.88)
<b>Handball Players (n = 30)</b>	3.13 (.82)	2.78 (.86)	3.18 (.94)	2.70 (.99)	3.60 (.88)	3.25 (.77)
<b>Martial Arts (n = 32)</b>	3.58 (.86)	2.29 (.77)	3.45 (.92)	2.39 (1.06)	3.97 (.58)	3.07 (.80)

A univariate analysis of variance with the overall score of SCS showed a significant effect of the factor group,  $F(2, 91) = 3.41, p = .037, \eta_p^2 = .070$ . The mean score for the control group seemed to be lower ( $M = 2.88, SD = 0.49$ ) than for the handball players ( $M = 3.11, SD = 0.38$ ) and the martial arts athletes, ( $M = 3.13, SD = 0.35$ ). However, the Gabriel post-hoc test failed to show a significant difference between the control group and the group of martial arts athletes,  $p = .059$ , and between the control group and the handball players,  $p = .103$ . There was also no significant difference between handball players and martial arts athletes,  $p = .996$ .

The multivariate analysis with the six subscales using Pillai's trace showed a significant effect of group,  $F(12, 174) = 2.63, p = .003, \eta_p^2 = .154$ . A significant effect could be carved out for self-kindness,  $F(2, 91) = 3.75, p = .027, \eta_p^2 = .076$ , common humanity,  $F(2, 91) = 5.85, p = .004, \eta_p^2 = .114$  and mindfulness,  $F(2, 91) = 5.85, p = .004, \eta_p^2 = .114$ , but only marginal for self-judgment,  $F(2, 91) = 3.04, p = .053, \eta_p^2 = .063$ , and neither for isolation,  $F(2, 91) = 0.82, p = .446, \eta_p^2 = .018$  nor for over-identification,  $F(2, 91) = 0.56, p = .573, \eta_p^2 = .012$ . Qualitatively identical results were obtained if the hours of sports practiced per week were considered as a co-variate.

Because there was homogeneity of variance for self-kindness and common humanity, the Gabriel post-hoc test was used, for mindfulness due to non-homogeneity of variance, the Games-Howell post-hoc test was applied. For all three measurements, there was a significant difference between the martial arts and the control group (all  $ps < .05$ , see figure 1).



**Figure 1:** Means and standard error for the three positive subscales of the SCS split by sport group

Because there were more judokas than other martial arts athletes in the sample, a possible difference between judo athletes and the other martial arts athletes was investigated as an exploratory analysis. There were no group differences in the six subscales and the overall score (all  $ps > .192$ ).

## 5 Discussion

Our results demonstrate that female martial arts athletes reported higher scores in the positive aspects of self-compassion, namely self-kindness, common humanity and mindfulness, than a control group of female athletes who practices sports as often as the group of female martial athletes. However, there was no significant difference to female athletes who practice a team sport (handball). Also, the enhanced self-compassion of the female athletes did not appear in significant differences regarding the negative aspects of self-compassion, i.e., judgment, isolation and over-identification.

### Self-compassion in martial arts

To the best of our knowledge, this is the first study showing enhanced positive aspects of self-compassion in female martial arts athletes compared to a control group. However, this is only in comparison to athletes who do not participate in a team sport but receive 85% of their sports training during their studies (six hours compared to one hour they were allowed to complete). Those students do not have any extensive experience in team sports. But whereas the martial arts athletes showed more positive aspects of self-compassion than the control group, the handball players did not show an enhanced common humanity, which was assumed in the hypotheses. Consequently, we might conclude that the team vs. individual sports aspect is not the relevant factor for the enhanced self-compassion of the female martial arts athletes. Another aspect which should be taken into account in further studies is that only the martial arts athletes and handball players participate in competitions.

The second point which is interesting here is that significant differences between the female martial arts athletes and the control group were especially found in the positive facets of self-compassion: there were no differences regarding possible sufferings but the positive aspects of self-kindness were enhanced. Maybe the effect was not that high for the negative aspects of self-compassion because athletes still believe that self-criticism is in some ways needed to flourish and to show the best performance in sports (Ferguson et al., 2014). Some individuals might find it difficult to express compassion towards the own person (Gilbert, McEwan, Matos, & Ravis, 2011). Also mindfulness is augmented in this specific sport group. This gives a hint that martial arts can really be classified as some kind of mindful-sports (Naves-Bittencourt et al., 2015). Mosewich, Ferguson, McHugh, and Kowalski (2019) suggest that a self-compassion intervention in sports is effective when an identification of personal strengths and challenges through incorporating self-awareness into programming is integrated. Maybe this is one of the reasons why female arts athletes possess higher self-kindness, mindfulness and common humility than other young women practicing sports on their own.

### Limitations

The main focus of the paper was to investigate the self-compassion construct in martial arts. Until now, it has not been investigated if martial arts athletes really report more self-compassion than other athletes. One study demonstrated a positive association between mindfulness and the amount of aikido training (Lothes, Hakan, & Kassab, 2013). But self-compassion is more than mindfulness because it is related to the appreciation of the own person whereas mindfulness is more related to attention control (Hölzel et al., 2011).

However, the study is limited by the fact that only women are investigated and that the control group is composed from sport students, who do not practice a team sport on a regular basis. As with every cross-sectional study, we cannot draw a conclusion on if martial arts training leads to a higher self-compassion or whether people with higher self-compassion choose martial arts as a sport.

## Outlook

This is a promising first study to investigate the different aspects of mindfulness and self-compassion in several types of martial arts. First of all, we did not obtain other results about general well-being or stress resilience, a factor which could have influenced the results (Neff & McGehee, 2010). This should be added in further studies. Second, it has to be investigated in an intervention study if martial arts training leads to an enhanced self-compassion. Furthermore, it is interesting to investigate which martial arts training can improve which aspect of self-compassion.

## Acknowledgement

We are grateful for the participating women.

## Funding

There was no funding for this study.

## Compliance with Ethical Standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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