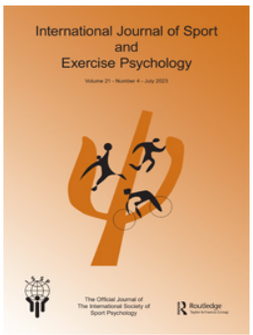

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Longitudinal influence of self-compassion and fears of compassion on prosocial and antisocial behaviour in sport: A conditional latent growth curve modelling analysis

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ABSTRACT

The impact of self-compassion on athlete wellbeing is well established. Much less researched is the impact of self-compassion, and its related fears (hereafter "fears of compassion") on athletes' prosocial and antisocial behaviours. Indeed, sporting contexts offer opportunities for athletes to demonstrate prosocial and antisocial behaviours towards teammates and competitors, and these behaviours could lead to various performance and wellbeing-related consequences. Given the well-documented benefits of a compassion, and the intention to investigate alternative antecedents or predictors of prosocial and antisocial behaviour in sport, we assessed the longitudinal influences of self-compassion and fears of compassion on athletes' prosocial and antisocial behaviours. The study used a repeated measures design, where 324 athletes (174 male, 150 female) from 35 different sports (22 individual sports, 13 team sports) completed surveys at baseline and the 4th and 8th month. Conditional latent growth curve modelling revealed higher self-compassion and lower fears of receiving compassion from others at baseline were associated with greater prosocial behaviours, whilst higher fears of self-compassion were associated with higher antisocial behaviour, over eight months. Results also revealed a trend for antisocial behaviour to increase across the study period. Compassion-based interventions may be of value to athletes to improve prosocial behaviours in sport contexts.

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Self-compassion; fears of compassion; prosocial behaviour; antisocial behaviour; latent growth curve modelling

Sport is a domain where competitiveness, the potential for failure, injury or losing one's position, can pose a challenge to athletes' wellbeing. Sport is also a domain where there is great potential to display prosocial (e.g., praise and helping) and antisocial behaviours (e.g., verbal abuse or retaliation following a foul) that are often frequent and diverse (Kavussanu, 2006). Research has demonstrated contrasting effects of prosocial and antisocial behaviours in sport (e.g., impacting differntly on effort, performance, wellbeing, and cohesion), while a variety of studies have investigated factors that promote or

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inhibit such behaviours (see Kavussanu & Al-Yaaribi (2021) for review). However, there is a lack of longitudinal evidence concerning what influences prosocial and antisocial behaviour in sport, and studies investigating predictors of these behaviours have been predominately focused on moral- and motivation-related factors such as goal orientation and motivational climate, with little consideration of other potential psycho-behavioural characteristics of coaches and athletes that construct the sport environment (Kavussanu & Al-Yaaribi, 2021). In this context, one potential, but previously neglected approach to developing athletes' prosociality is through the cultivation of compassion.

Compassion in sport

Compassion is commonly defined as "a sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it" (Gilbert, 2015, p. 241). It emerged from the mammalian attachment system and can be thought of as a stimulus-response algorithm; for example, a child is distressed and cries, a parent recognises their distress and responds to them with remedial and soothing behaviours (Gilbert, 2015). In sport, compassion-based training which promotes compassion towards oneself (hereafter *self-compassion*; see also Neff, 2003), has recently seen increased interest from practitioners and researchers in the context of improving athlete wellbeing (Mosewich et al., 2019; Röthlin, 2019). A narrative review found that compassion-based training can help maintain athlete's wellbeing and prevent the depression and anxiety which can occur because of excessive self-criticism (James et al., 2022). Whilst compassion-based *and* mindfulness-based trainings for athletes were found to increase self-compassion and flow (Carraça et al., 2021), increase self-compassion whilst reducing rumination and distress (Ferreira et al., 2020), and increase mindfulness, compassion, psychological flexibility whilst reducing distress (Carraça et al., 2019).

Further Quantitative studies of self-compassion in athletes revealed a range of benefits associated with higher levels of self-compassion, such as better wellbeing (Walton et al., 2022), greater mindfulness in sport (Tingaz & Atalay, 2021), greater mental toughness (Wilson et al., 2019), reduced psychological distress (Walton et al., 2020), less concern about body image, fear of failure and negative evaluation (Ferguson et al., 2015; Mosewich et al., 2011; Reis et al., 2019), and less self-criticism and better-perceived sport performance (Killham et al., 2018). Whilst in qualitative research, athletes have identified multiple benefits of self-compassion, including helping them to build positivity, perseverance, responsibility, and limiting rumination (Ferguson et al., 2014) and improve wellbeing and perceptions of performance (Adam et al., 2021). In interviews, athletes highlighted the role of their coach and other athletes in facilitating a shift from self-criticism to self-compassion (Frentz et al, 2020). Compassion training in athletes has also demonstrated improved management of self-criticism, rumination and concern over mistakes (Mosewich et al., 2013).

Despite the many benefits, it is not uncommon for individuals to experience fearful feelings towards compassion (hereafter *fears of compassion*; see Gilbert et al., 2011). Fears of compassion are barriers and resistances to compassion, which can relate to attachment trauma (e.g., where compassion triggers a grief response), valuing competitiveness (e.g., perceiving compassion as a barrier to success), or misconceptions around the term "compassion" (e.g., perceiving it as a low social rank position) (Gilbert et al.,

2011; Matos et al., 2017; McEwan & Minou, 2022). The latter two barriers of valuing competitiveness and perceiving compassion as a low-rank position may be particularly salient in competitive contexts. Indeed, qualitative research indicated that athletes' worry that being self-compassionate might result in losing performance standards (Ferguson et al., 2015; Sutherland et al., 2014). However, to date, research examining fears of compassion in sport is still in its infancy (e.g., Walton et al., 2022; Zhang & McEwan, 2023).

Compassion and prosociality

Research has supported the role of compassion in developing prosociality, and adopting compassion has consistently been associated with prosociality in general populations (Canevello & Crocker, 2020; Lim & DeSteno, 2016). Cross-sectional evidence suggests that self-compassion promotes various forms of prosociality, including forgiveness (Condon & DeSteno, 2011), volunteering (Omoto & Snyder, 2010), donating behaviours (Runyan et al., 2018), cooperation (Singer & Steinbeis, 2009) and assisting with a fallen shelf in the laboratory (Lindsay & Creswell, 2014). Whilst training in compassion has been shown to increase the sense of social connectedness (e.g., Hutcherson et al., 2008), with a meta-analysis by Luberto et al. (2018) finding evidence of small to medium effect sizes for compassion-based training (i.e., to promote self-compassion and reduce its related fears) to increase prosocial behaviours in general populations. Nevertheless, existing evidence of promoting self-compassion and attenuating fears of compassion to generate greater prosociality has only been established in social and interpersonal contexts, rather than in sport contexts that feature competitiveness and dominant ethics (Hughes & Coakley, 1991) and contains more diverse expressions of prosocial and antisocial behaviour (Kavussanu, 2006). Given the large amount of evidence on the link between compassion and prosociality established in general populations, one would expect an athlete, with greater compassion (e.g., higher self-compassion, lower fears of compassion), to behave in more prosocial and less antisocial ways in sport.

The current study

In the present research, we aimed to investigate the influence of athletes' self-compassion and fears of compassion on the longitudinal change of their prosocial and antisocial behaviours in sporting contexts. This research, therefore, allowed us to examine the generalisability of findings on compassion and prosociality from general populations to athletic populations, which would also address the gap in the literature regarding the lack of knowledge in predictors of prosocial and antisocial behaviour in sport beyond moral- and motivation-related factors (Kavussanu & Al-Yaaribi, 2021). Embracing the trait-like conceptualisation of self-compassion (Neff, 2003) and fears of compassion in sport (Zhang & McEwan, 2023), we assessed athletes' characteristics of self-compassion and fears of compassion once in a baseline survey. To track longitudinal changes in athletes' prosocial and antisocial behaviours in sport, we measured these constructs not only at baseline but also at four- and eight-month follow-ups. Conditional latent growth curve modelling (LGCM) (Preacher et al., 2008) was performed to examine the hypothesis that, athletes with greater self-compassion and lower fears of compassion demonstrate greater prosocial and lowered antisocial behaviour in sport over the study period. Gender is known to be associated

with differing levels of compassion, with a meta-analysis finding that males tend to have higher self-compassion scores than females (Yarnell et al., 2015). Gender and competitive experience were controlled for the longitudinal data analysis to address their potential confounding influence on fears of compassion (Walton et al., 2020) and prosocial and antisocial behaviours (Kavussanu & Al-Yaaribi, 2021).

Method

Participants

Demographic details of gender, age and years of experience with competitive sport were collected in the survey. Participants were 324 sport participants (174 male, 150 female) from 35 different sports (22 individual sports, 13 team sports), with an average age of 29.55 (SD = 15.68) and 11.55 years of competitive sport experience (SD = 9.01). Among these participants, 185 were university athletes, 96 were competing at the regional level, and 43 were competing at national or international level. Among the 324 participants recruited at the baseline survey, 185 completed Time 2 survey and 156 completed all three waves of the survey, representing 57% and 48% retention rate in four- and eight-months.

This three-wave sample, based on Monte Carlo power analysis accounting for missing/dropout data, allowed over .83 power to detect a small-to-moderate conditional effect (i.e., regression coefficient = .2, alpha = .05) of compassion-related study predictors on the trajectories of prosocial and antisocial behaviour in sport. Projected by a well-fitted parallel latent growth curve model (i.e., mean/variance of latent intercept and slope = 0/.5 and .2/.1, respectively; see Muthén & Muthén's (2002)), with coefficients between latent change variables (i.e., latent intercepts and slopes; see Preacher et al. (2008)) set at −.10 based on the small, negative correlation of prosocial and antisocial behaviour in sport documented in the literature (e.g., Kavussanu & Boardley, 2009). Figure 1 illustrates the parallel latent growth curve model we adopted to estimate conditional effect of study predictors via Monte Carlo power analysis.

Measures

Prosocial and antisocial behaviour in sport

We used the *Prosocial and Antisocial Behaviour in Sport Scale* (PABSS; Kavussanu & Boardley, 2009) to assess reported prosocial behaviours towards teammates (four items; e.g., "Encourage a teammate") and opponents (three items; e.g., "Asked to stop play when an opponent was injured") and antisocial behaviours towards teammates (five items; e.g., "Swore at a teammate") and opponents (eight items; e.g., "Deliberately fouled an opponent"). Players reported how often they had engaged in each behaviour this season on a 5-point Likert scale from 1 (*never*) to 5 (*very often*). The PABSS has been used extensively in sport, demonstrating very good reliability and validity (see Kavussanu & Al-Yaaribi (2021), for a review). In this study, we implemented the PABSS at all three waves of data collection (see Procedures). Following recommendations (e.g., Jones et al., 2019; Sagar et al., 2011), we generated average scores for prosocial and antisocial behaviours.

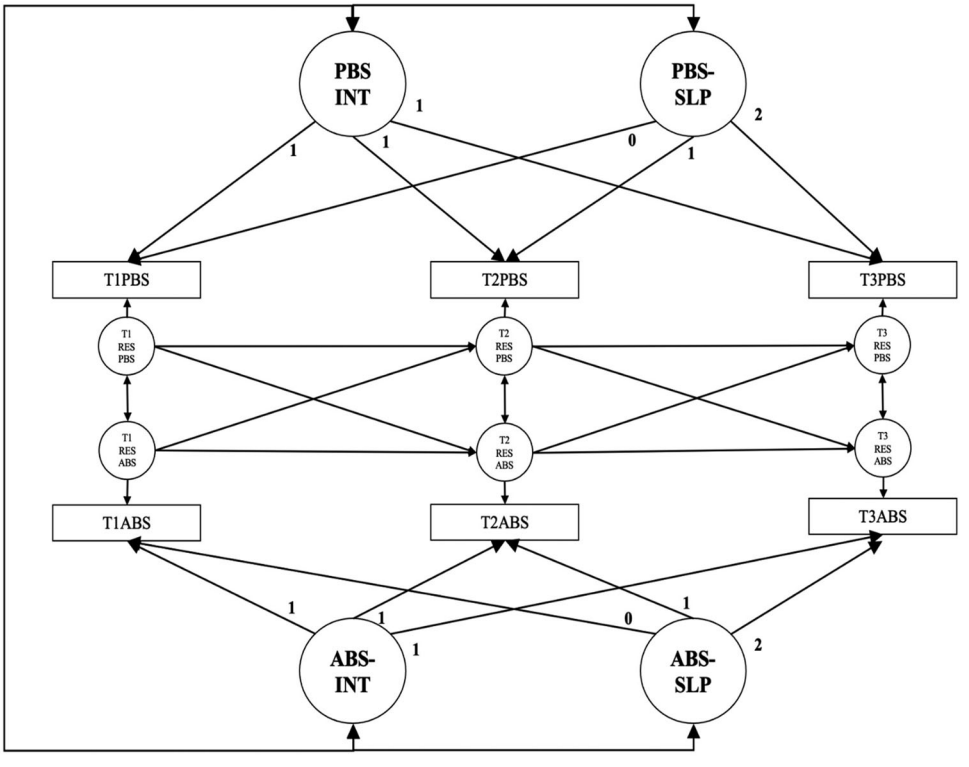

Figure 1. Latent growth curve model with structured residuals for prosocial and antisocial behaviour in sport over the study period.

Note: PBS, Prosocial Behaviour in Sport; ABS, Antisocial Behaviour in Sport; T1, Time 1; T2, Time 2; T3, Time 3; RES, Residuals; INT, Intercept; SLP, Slope. Factor loading was fixed to 1 for all time points when estimating the intercepts (aggregation of PBS/ABS) and constrained to 0, 1, 2 for time 1, 2, 3, respectively, when estimating the slopes (rate of change in PBS/ABS).

Self-compassion

We assessed dispositional self-compassion using the *Self-compassion Scale – Short* (SCS-S; Raes et al., 2011). The SCS-S is a short and validated version of Neff's (2003) Self-compassion Scale and has been used successfully in sport (e.g., Amemiya & Sakairi, 2020). Players responded in twelve items about how they react towards personal failures and distress (e.g., "When I fail at something important to me, I become consumed by feelings of inadequacy") on a 5-point Likert scale from 1 (*almost never*) to 5 (*almost always*). Since SCS-S assesses the trait-like elements of self-compassion, we implemented the SCS-S at baseline only, with higher mean scores reflecting greater self-compassion.

Fears of compassion in sport

The *Fears of Compassion in Sport Scale* (FCSS; Zhang & McEwan, 2023) was used to assess fear of self-compassion in sport (four items; e.g., "I fear that if I become too compassionate to myself, I will lose my self-criticism and my flaws will show") and fear of receiving compassion from others in sport (six items; e.g., "Feelings of kindness from

others are somehow frightening"). Players rated the extent to which they agreed on each item from 1 (*don't agree at all*) to 5 (*completely agree*). The FCSS has demonstrated very good reliability, validity and measurement invariance across different sports and participating levels (Zhang & McEwan, 2023). We calculated an average score for each of the two subdimensions. Similar to the SCS-S, we assessed the FCSS at baseline only.

Procedures

With institutional ethics approval, we delivered an online data collection via Qualtrics which contained a baseline survey and two surveys at four- and eight-month follow-ups. Participants were recruited by advertising the study through social media and email to sport science students in UK universities. Only those aged over 18 and regularly participating in sports were eligible to participate. To encourage participation and increase retention rate, we offered ten £10 Amazon vouchers in a prize draw for those who completed all three surveys. Each data collection window lasted for a calendar month, with a reminder sent one week prior to closing each survey.

Data analysis

Missing data, descriptive statistics and correlations between study variables were checked in IBM SPSS Version 27. We then used Mplus (Muthén & Muthén, 2015) Version 8 for the main analyses. We applied LGCM (Preacher et al., 2008) to estimate the trajectory of participating athletes' prosocial and antisocial behaviours in sport over the study period. With repeated measures of study variables (i.e., prosocial and antisocial behaviours) in three time points, we modelled a linear parallel LGCM to assess the latent *intercept* (i.e., an indication of aggregation) and latent *slope* (i.e., an indication of rate of change) of prosocial and antisocial behaviour in sport across the study period (see also Stenling et al., 2016). To address the time-varying and intercorrelated nature of prosocial and antisocial behaviour in sport, we applied cross-lagged structural residuals to the parallel LGCM (see Schlueter et al., 2018). Figure 1 presents an illustration of the conceptual model testing linear trajectories of participating athletes' prosocial and antisocial behaviour in this study.

To assess whether the time intercept and slope of athletes' prosocial and antisocial behaviour was fixed (i.e., homogeneous among participants) or random (heterogeneous among participants) over the study period, we tested and compared five models. Model 1 (M1) specified fixed intercepts and slopes for both prosocial and antisocial behaviour. Model 2 (M1) introduced random intercepts to build on M1. Model 3 and 4 (M3, M4) built on M2 by adding in a random slope for prosocial behaviour (M3) and antisocial behaviour (M4), respectively. Model 5 (M5) extended M2 by specifying random slopes for prosocial and antisocial behaviours simultaneously. Since the athletes' data were nested within different sports ($n = 35$ clusters) but we were only interested in the within-level effects, we controlled for sport-type clusters using the TYPE = COMPLEX command function in the Mplus when conducting LGCM analysis. Following recommendations (Hu & Bentler, 1999), Chi-square (χ^2), comparative fit index (CFI), standardised root mean square residual (SRMR), and root mean square error of approximation (RMSEA) were

checked to assess and compare model fit, with ≥ .95 CFI, ≤ .08 SRMR, ≤ .06 RMSEA, indicate good model fit. The best-fit model was selected for further interpretation and analysis.

Once the best-fit model of athletes' prosocial and antisocial behaviour over time was determined, we used the four latent variables generated via the LGCM analysis (i.e., time intercepts and slopes reflecting aggregation and rate of change for prosocial and antisocial behaviour over time) as the dependent variables for further analyses (see Figure 1). Particularly, we built on the best-fit LGCM model by regressing the four latent variables of self-compassion, fear of self-compassion, and fear of receiving compassion from others. We also modelled gender and years of competitive sports experience as covariates to control for demographic differences. The *Full Information Maximum Likelihood* (FIML) approach with robust estimations (i.e., MLR in Mplus) was used, which is considered one of the most appropriate strategies to deal with missing data (Newman, 2014) and to mitigate possible influence of data non-normality (Satorra & Bentler, 1994). The same criterion (i.e., χ^2, CFI, SRMR, RMSEA) was employed to assess model fit. Correlation coefficient (r), standardised beta coefficient of regressive path (β), precise p-value and 95% confidence interval (CI) of regression coefficients were reported when appropriate.

Results

Preliminary analyses

The correlation between baseline self-compassion and prosocial behaviour at baseline, four- and eight-months was moderate and positive. The correlation between baseline fear of self-compassion and antisocial behaviour in sport at baseline, four- and eight-months was weak-to-moderate and positive. No consistent correlation was found between fear of receiving compassion from others and prosocial and antisocial behaviours in sports over the study period. Internal consistency (i.e., Cronbach's alpha) of the study measures ranged from good to excellent. *Table 1* presents the details of descriptive statistics, internal consistencies, and zero-order correlations of the study measures.

Trajectory of prosocial and antisocial behaviours in the sport over the study period

Testing and comparison of the five LGCM models (M1–M5) assessing changes of prosocial and antisocial behaviours in sport over time indicated a random intercept (i.e., aggregation over the study period) and random slope (i.e., rate of change over the study period) model fit the data best; M5: $\chi^2 = 2.55$, df = 2, CFI = 1.00, RMSEA = .03, SRMR = .02 (see *Table 2* for all fit indices and comparisons). We therefore interpreted the M5 for trajectory of participants' prosocial and antisocial behaviour in sports during the study period. The mean of slope for antisocial behaviours in sport was positive and significant ($\text{slope}_{\text{mean}} = .19, p = .01$), suggesting an increasing trend in antisocial behaviours among participating athletes over the study period. The variance slope for prosocial behaviours in sport was significant ($\text{slope}_{\text{variance}} = .10$, $p = .04$), indicating individual differences of pattern in change on prosocial behaviour over time. The variances of intercepts for prosocial ($\text{intercept}_{\text{variance}} = .42$, $p = .00$) and antisocial

Table 1. Descriptive statistics and zero-order correlation between study variables.

		Mean	SD	1	2	3	4	5	6	7	8	9
1	SCSS-S	2.90	.62	(.84)	−.20**	−.24**	.27**	.34**	.35**	.00	.05	−.04
2	FSCS	2.48	.94		(.77)	.42**	−.02	−.04	−.04	.18**	.18*	.17*
3	FCOS	2.09	.86			(.85)	−.14*	−.15*	−.12	.10	.11	.18*
4	T1 PBS	4.04	.75				(.86)	.64**	.56*	.11	.09	.04
5	T2 PBS	3.93	.78					(.87)	.49**	.03	.12	.07
6	T3 PBS	3.91	.76						(.85)	.15	.11	.12
7	T1 ABS	1.66	.62							(.95)	.79**	.61**
8	T2 ABS	1.73	.71								(.93)	.70**
9	T3 ABS	1.99	.90									(.91)

Note: SCSS-S, Self-Compassion Scale – Short; FSCS, Fear of Self-Compassion in Sport; FCOS, Fear of Compassion from Others in Sport; PBS, Prosocial Behaviour in Sport; ABS, Antisocial Behaviour in Sport; T1, Time 1; T2, Time 2; T3, Time 3. Cronbach's alpha coefficients are presented in parentheses. ** $p < .01$; * $p < .05$.

Table 2. Model-fit indices and χ^2 difference tests of nested models for the latent growth curve model with structured residuals.

Model	χ^2	df	CFI	RMSEA	SRMR	Comparison	Adjusted $\Delta\chi^2$	Δdf
Fixed intercepts, fixed slopes (M1)	259.11	12	.24	.26	.18			
Random intercepts, fixed slopes (M2)	18.05	9	.97	.06	.06	M1 vs. M2	207.66**	3
Random intercepts, random PBS slope, fixed ABS slope (M3)	11.49	6	.98	.05	.04	M3 vs. M2	7.72	3
Random intercepts, fixed PBS slope, random ABS slope (M4)	8.18	6	.99	.04	.05	M4 vs. M2	7.73	3
Random intercepts, random slopes (M5)	2.55	2	1.00	.03	.02	M5 vs. M4	5.61	4
						M5 vs. M3	8.18	4
						M5 vs. M2	14.91*	7

Note: LGCM, Latent Growth Curve Modelling; PBS, Prosocial Behaviour in Sport; ABS, Antisocial Behaviour in Sport. Robust estimates were used. ** $p < .01$; * $p < .05$.

behaviours ($\text{intercept}_{\text{variance}} = .75$, $p = .00$) were both significant, reflecting the existence of individual differences in aggregated prosocial and antisocial behaviour among the participating athletes over time. Prosocial behaviour's intercept and slope were weakly and positively correlated ($r = .06$, $p = .04$). Effects of autoregressive residuals of prosocial and antisocial behaviours in sport were weak-to-moderate, negative between Time 1 and Time

Table 3. Estimates from the best-fit latent growth curve model with structured residuals (M5) for prosocial and antisocial behaviour in sport over the study period.

	Estimates	SE	*p*-value
Means			
PBS intercept	−.01	.08	.95
PBS slope	.04	.05	.49
ABS intercept	.01	.21	.99
ABS slope	.19	.07	.01**
Variances			
PBS intercept	.42	.10	.00**
PBS slope	.10	.05	.04*
ABS intercept	.75	.12	.00**
ABS slope	.10	.07	.13
Correlations			
PBS intercept with PBS slope	.06	.03	.04*
PBS intercept with ABS intercept	.08	.04	.21
PBS intercept with ABS slope	−.01	.06	.90
PBS slope with ABS intercept	.05	.04	.21
PBS slope with ABS slope	.04	.15	.82
ABS intercept with ABS slope	.10	.12	.40
Autoregressive residuals			
T1 PBS to T2 PBS	−.18	.09	.04*
T2 PBS to T3 PBS	−.63	.10	.00**
T1 ABS to T2 ABS	−.29	.13	.02*
T2 ABS to T3 ABS	−.67	.32	.04*
Diagonal residuals			
T1 PBS to T2 ABS	.03	.30	.93
T2 PBS to T3 ABS	.03	.30	.93
T1 ABS to T2 PBS	−.11	.32	.72
T2 ABS to T3 PBS	−.11	.32	.72
Synchronous residuals			
T1 PBS to T1 ABS	−.01	.23	.99
T2 PBS to T2 ABS	−.03	.06	.58
T3 PBS to T3 ABS	−.04	.19	.85

Note: PBS, Prosocial Behaviour in Sport; ABS, Antisocial Behaviour in Sport; T1, Time 1; T2, Time 2; T3, Time 3. ** $p < .01$; * $p < .05$.

2 and strong, negative between Time 2 and Time 3. No significant effect of prosocial and antisocial behaviours in sport was found for residual diagonal effects and synchronous correlations. *Table 3* displays all statistics for the best-fit LGCM model.

Effects of self-compassion, fear of self-compassion and fear of receiving compassion

Building on the best-fit LGCM model (M5) by specifying regressive paths from self-compassion, fear of self-compassion, fear of receiving compassion, and covariates (i.e., gender, years of sport experience) to the intercepts and slopes of prosocial and antisocial behaviour in sport yielded a well-fitted model ($\chi^2 = 15.80$, $df = 12$, CFI = .99, RMSEA = .03, SRMR = .02). Self-compassion predicted increased intercept ($\beta = .18$, $p = .00$; 95% CI [.06, .29]) and slope ($\beta = .32$, $p = .04$; 95% CI [.01, .64]) of prosocial behaviour in sport, suggesting higher levels of self-compassion were associated with greater aggregated prosocial behaviour and predicted faster rates of increases in prosocial behaviour during the study period. Moreover, fear of receiving compassion from others predicted decreased intercept of prosocial behaviour in sport ($\beta = -.16$, $p = .04$; 95% CI [−.31, −.01]), revealing that the more fearful one was towards receiving compassion from others the lower the individual was in aggregated prosocial behaviour over the study period.

Furthermore, fear of self-compassion predicted increased intercept of antisocial behaviour in sport ($\beta = .12$, $p = .00$; 95% CI [.04, .19]), indicating that the more fearful one was towards being self-compassionate, the greater aggregated antisocial behaviour the individual demonstrated over the study period. Additionally, compared to females, males had a larger intercept for antisocial behaviour in sport ($\beta = .52$, $p = .00$; 95% CI [.46, .59]), reflecting greater aggregated antisocial behaviour in male compared with female athletes. No other regressive coefficients were significant. *Table 4* displays all regressive statistics for the tested model.

Discussion

Benefits of high self-compassion and low fears of compassion in prosociality have been well documented in social and interpersonal contexts in the general population. This study is the first offering insights into compassion and prosocial and antisocial behaviours in sport and competitive settings and athlete populations. In a sample of 324 UK athletes, we examined whether self-compassion, fear of self-compassion, and fear of receiving compassion from others, predicted the trajectory of prosocial and antisocial behaviour in sport over eight months. Our hypotheses that greater self-compassion, and lower fears of compassion predict greater prosocial and lower antisocial behaviour in athletes received support.

Specifically, athletes with higher levels of self-compassion at baseline reported greater aggregated prosocial behaviour and demonstrated a more accelerated, increasing tendency in prosocial behaviour over the eight-month study period. This finding is consistent with existing literature and supports the positive relationship between self-compassion and prosociality found in general populations (Canevello & Crocker, 2020; Lim & DeSteno, 2016) and extends such knowledge to sport contexts and athlete populations. To the best of our knowledge, this is the first time that higher baseline self-compassion

Table 4. Statistics for regressive paths of self-compassion, fear of self-compassion, and fear of receiving compassion from others in predicting trajectory of prosocial and antisocial behaviour in sport.

	β	SE	*p*-value	95% CI
PBS intercept				
Self-compassion	.18	.06	.00**	[.06, .29]
Fear of self-compassion	.07	.09	.42	[−.09, .24]
Fear of receiving compassion	−.16	.08	.04*	[−.31, −.01]
Male	.03	.07	.67	[−.11, .17]
Years in competitive sport	−.02	.08	.82	[−.17, .14]
PBS slope				
Self−compassion	.32	.16	.04*	[.01, .64]
Fear of self-compassion	.04	.11	.71	[−.18, .26]
Fear of receiving compassion	.01	.14	.93	[−.25, .27]
Male	.05	.18	.76	[−.29, .40]
Years in competitive sport	.11	.10	.31	[−.10, .31]
ABS intercept				
Self-compassion	−.03	.05	.65	[−.13, .08]
Fear of self−compassion	.12	.04	.00**	[.04, .19]
Fear of receiving compassion	.07	.06	.28	[−.06, .19]
Male	.52	.03	.00**	[.46, .59]
Years in competitive sport	−.02	.05	.67	[−.13, .08]
ABS slope				
Self−compassion	−.05	.07	.48	[−.20, .09]
Fear of self−compassion	−.01	.10	.95	[−.21, .19]
Fear of receiving compassion	.13	.12	.28	[−.11, .37]
Male	.28	.19	.14	[−.09, .64]
Years in competitive sport	.06	.05	.24	[−.04, .15]

Note: PBS, Prosocial Behaviour in Sport; ABS, Antisocial Behaviour in Sport; *β*, Standardised Beta Coefficient; SE, Standard Error; CI, Confidence Interval. ** $p < .01$; * $p < .05$.

was found to be linked with an increasing tendency in prosocial behaviour over time and in an athlete population. This novel finding offers greater support to the use of compassion-based training to promote prosocial behaviour.

While studies in social, interpersonal contexts suggested that fears of compassion predict lower prosocial and higher antisocial orientations (Gilbert & Mascaro, 2017), the current study extended this existing literature to sport contexts and athlete populations, revealing that fears of compassion have distinctive influences in prosocial and antisocial behaviours. It seems that fear of receiving compassion from others undermines individuals' prosocial behaviour, while fear of self-compassion contributes uniquely to increased antisocial behaviour. As such, one could argue fear of self-compassion maybe a greater risk factor because high antisocial behaviour (compared with low prosocial behaviour) is probably more detrimental to moral play in sport (Boardley et al., 2020). Coach, practitioners and researchers should consider tackling different fears of compassion for different purposes in future work (i.e., promoting prosocial behaviour, mitigating antisocial behaviour).

Another novel finding from the current study is the increasing trend in antisocial behaviour in sport over the eight-month study period, even when controlling for individual differences, such as gender, sporting experience (in years) and changes in prosocial behaviour over time. Importantly, this increasing tendency is invariant, or homogeneous for all participants regardless of levels of self-compassion and fears of compassion. However, no consistent trend was found for prosocial behaviour in sport over the study period. One possible explanation is that the three timepoints for longitudinal

data collection roughly fell at the beginning/early sport season, mid-season and late/post-season depending on the level and type of sport a participating athlete was competing at the time of data collection. With an increase of situational significance towards the later stage of a sport season, athletes may demonstrate more antisocial behaviours in order to achieve dominance and beat their competitors (Hughes & Coakley, 1991). Also, previous research has found that, compared to prosocial behaviour, often, antisocial displays are more frequent and diverse in sports contexts (Kavussanu, 2006). The increasing trend in antisocial, not prosocial, behaviour in sport, could be because athletes have more "opportunities" to demonstrate such antisocial behaviour. The finding infers that, compared to lower prosocial behaviour, higher antisocial behaviour is a greater risk for competitive athletes.

Finally, when controlling for gender and experience in sport, we found a significant gender difference that male athletes demonstrated greater antisocial behaviours over the study period. This finding is consistent with those from Kavussanu and Boardley (2009), who found that male athletes demonstrated greater antisocial behaviours. There were no significant effects for experience in sport, consistent with the findings of Walton et al. (2020), who also failed to find effects of experience level, after hypothesising that elite athletes might be more competitive and therefore less self-compassionate.

Limitations and future directions

While the current study features several key strengths (e.g., longitudinal design, use of LGCM for estimating trajectory of prosocial and antisocial behaviour in sport), there are important considerations we would recommend to researchers. First, the longitudinal design adopted in this study is inappropriate for causal interpretation. Although the findings support the benefits of high self-compassion and low fears of compassion for greater prosocial behaviour and lower antisocial behaviour in sport, the mechanisms of such effects are not fully understood and could be considered in future research, perhaps by adopting an intervention design or test of mediation.

Second, some researchers and theorists take an alternative and more sceptical view of prosociality, which suggests that people are primarily self-interested (e.g., for enhanced reputation and inclusion in groups; Baumeister & Leary, 1995) and that they engage in prosocial behaviour for self-enhancement (e.g., communal narcissism; Gebauer et al., 2012). This is in contrast to the more common views embraced in this research; which is, prosocial and antisocial behaviour are morally driven (Bandura, 1991) and reflect the extent to which an individual cares about and wants to benefit others (Crocker et al., 2017). Future research in this domain could investigate and control for self-interest in prosocial and antisocial behaviour.

In addition, future research could consider using alternative prosocial and antisocial behaviour measures, such as adapting existing measures to coach-ratings rather than athlete self-report thus preventing concern over common methods variances (Chang et al., 2010). Finally, the self-compassion measure used in the study (Raes et al., 2011) is a trait-like measure. Future studies could examine self-compassion using behaviour-based measures (i.e., The Compassion Motivation and Action Scales; Steindl et al., 2021) and offer insights into the compassionate dynamic between athlete and coach (i.e., the Compassionate Coach Scale; Oliveira et al., 2022).

Conclusions

The impact of self-compassion on athlete wellbeing has been an increasing focus for researchers and practitioners, with evidence that incorporating self-compassion in sport can improve wellbeing in athletes (Mosewich et al., 2019). Much less researched has been the impact of self-compassion and fears of compassion on prosocial and antisocial behaviours in sport, even though sporting and competitive contexts offer many opportunities to demonstrate both prosocial and antisocial behaviours. In the current study, we established new evidence that self-compassion at baseline predicted an increase in athletes' prosocial behaviour over eight months from beginning/early to post/end of a sport season. Whilst in contrast, fear of self-compassion and fear of receiving compassion from others predicted higher antisocial behaviour and lower prosocial behaviour in sport, respectively, over the study period. Compassion-based interventions may therefore be of value to athletes, not only to improve wellbeing, but also to improve prosocial behaviour and attenuate antisocial behaviour towards teammates and competitors in sport contexts.

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Data availability statement

All anonymised data will be made available to other researchers on request, solely for the purpose of research.

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