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Mental health in student-athletes in Norwegian lower secondary sport schools

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ABSTRACT

Objectives The Norwegian sport school system offers a method for helping young dual-career athletes achieve their best both in academia and sports. However, there remains a concern that pursuing dual careers at a young age may leave some student-athletes vulnerable to poor mental health outcomes. The aim of this study was to investigate the association between gender, grade, and sport type and problematic scores on school burn-out, sport burn-out, self-esteem and psychological distress in student-athletes within a sample of Norwegian lower secondary schools.

Methods A sample of 642 student-athletes (ages 12–14) in grades 8–10 across 8 Norwegian lower secondary sport schools completed questionnaires on burn-out, self-esteem and psychological distress at the beginning of the school year.

Results Females were more likely to report high levels of sport-related burn-out and psychological distress, and low self-esteem; older student-athletes were more likely to report severe school-related and sport-related burn-out; and individual sport student-athletes were more likely to report high levels of psychological distress.

Conclusions Lower secondary sport schools in Norway may seek to be aware of the challenges facing student-athletes for informed practical steps to protect their mental health and maximise their outcomes as school students and athletes.

INTRODUCTION

Mental health problems among the general youth population have increased in the Nordic countries in the past decades.¹ Approximately 15%–20% of Norwegian children and adolescents have reduced function due to symptoms of anxiety and depression, and around 7% have symptoms that meet the requirements for a psychiatric diagnosis.² Although it has been suggested that being involved in competitive sports may protect adolescent student-athletes from mental health issues, simultaneously achieving in both sports and school may also leave student-athletes vulnerable to mental health problems due to the intense or even competing demands of both education and sports.³

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ There is a debate regarding whether specialised sport schools in Norway are helpful to student-athletes or add additional pressure, which may put student-athletes at risk of poor mental health.

WHAT THIS STUDY ADDS

⇒ This report shows that student-athletes have high levels of school-related burn-out. Female and older student-athletes were particularly at risk of burn-out while psychological distress was higher among individual sport student-athletes.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study demonstrates that student-athletes' mental health may require special attention, especially in regard to managing school expectations alongside their sporting careers.

Earlier studies have shown that the pressure associated with competitive sports and progressively increasing training loads may predispose young student-athletes, especially to burn-out in sports and school.⁴ Burn-out has been found to be associated with several negative mental health outcomes in adolescence, including depression and anxiety.⁵ By definition, sport burn-out is a combination of physical and emotional exhaustion, devaluation of sports, and a reduced sense of accomplishment.⁶ Burn-out can also occur in school. School burn-out has been described as a phenomenon in which minor school-related stress escalates and ends in burn-out and other severe negative psychological symptoms. Similar to sport burn-out, school burn-out consists of school-related exhaustion (ie, chronic fatigue due to overtaxing schoolwork), school-related cynicism (ie, a distant or indifferent attitude towards school and a loss of interest in schoolwork) and feelings of inadequacy (ie, perceptions of reduced competence and success in school).⁷ Generally, burn-out can be understood as a consequence of a mismatch between the situational demands in sports (eg, competitions



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and trainings) and school (eg, exams) and the available resources (eg, social support and feelings of competence) the student-athletes have to cope with these demands.⁸

Self-esteem is a core personality trait reflecting individuals' affective evaluation and appreciation of themselves as a person. High self-esteem is often regarded as essential for ensuring good mental health and functioning during adolescence and later in life while low self-esteem may be a risk factor for mental health disorders and burn-out.⁹ Psychological distress refers to symptoms of anxiety and depression. Although psychological distress does not necessarily correspond to a clinical diagnosis of a mood disorder, high levels of psychological distress are associated with the experience of depression or anxiety-related symptoms and may develop into more severe health outcomes over time.¹⁰ Psychological distress has often been used as a measure to indicate poor mental health among adolescent populations in Norway.²

The current study

Being aware of which student-athletes are most at risk of developing mental health problems, such as sports or school burn-out, is an important consideration for educators aiming to ensure the best health, education and sport outcomes for their student-athletes. International studies have suggested that student-athletes in higher school grades, female student-athletes and student-athletes participating in individual sports (vs team sports) may be more likely to experience burn-out symptoms, but this has not been replicated in the Norwegian lower secondary sport school context.¹¹ Similarly, female athletes may report lower levels of self-esteem and higher levels of psychological distress than males.^{3 12} Therefore, the aim of the present research was to investigate the association between gender, grade and sport type and problematic scores on various scales measuring school burn-out, sport burn-out, self-esteem and psychological distress among student-athletes in a sample of Norwegian lower secondary schools.

METHODS

Recruitment

Participants were recruited in the fall of 2023 from eight lower secondary sport schools: three in Western Norway, one in Northern Norway, two in Southern Norway and two in Central Norway. The sample included 642 student-athletes aged 12–14 years. Of the participating student-athletes, 265 were in grade 8 (aged 12), 227 were in grade 9 (aged 13) and 150 were in grade 10 (aged 14); 369 were male and 273 were female; 486 played team sports (eg, football or handball) and 156 pursued individual sports (eg, cross-country skiing or athletics) at various levels (ie, regional, national and international).

Data collection

The participants completed the following electronic self-report questionnaires: (a) sport burn-out: the Sport Burnout Inventory Dual Career Form; 10 items, 5-point

Likert scale,¹³ (b) school burn-out: The School Burnout Inventory; 10 items, 5-point Likert scale,⁷ (c) self-esteem: the Rosenberg Self-Esteem Scale, 10 items, 4-point Likert scale¹⁴ and (d) psychological distress: Hopkins Symptom Checklist; 10 items, 4-point Likert scale.¹⁵ All these measures have been validated for adolescent populations, and they have been widely used in the Nordic countries.

Data analysis

Scores on school burn-out, sport burn-out, self-esteem and psychological distress scales were assessed in line with published cut-off scores that likely indicate a level of symptoms associated with risk of poor mental health—that is, sum scores on self-esteem of 25 or lower,¹⁶ mean scores on psychological distress of 1.85 or higher¹⁵ and sum scores on burn-out of 30 or higher.^{7 17} We then investigated the likelihood of being considered high risk in each construct, split by grade, sex and sport type, using the χ^2 test.

RESULTS

The frequencies of high-risk scores and χ^2 tests of the association between risk scores and individual differences among student-athletes in lower secondary sport schools are presented in [table 1](#).

Female student-athletes in the surveyed lower secondary sport schools were significantly more likely to report severe sport burn-out, low self-esteem and high psychological distress. Student-athletes in older grades of lower secondary sport schools were more likely to report both school-related and sports-related burn-out. Student-athletes in individual as compared with team sports varied only in terms of psychological distress, as individual sport student-athletes were more likely to report high levels of psychological distress.

DISCUSSION

The current research examined the prevalence of sport and school burn-out, low self-esteem and psychological distress among adolescent student-athletes in Norwegian lower secondary sport schools. Moreover, we compared whether the prevalence of these outcomes differed across sex, grade and individual versus team sports.

The results showed that more than one-third of the student-athletes scored above the cut-off point for severe school burn-out symptoms. Although school burn-out has not been examined in Norway before, this number is relatively high compared with other studies conducted in other Nordic countries, in which the prevalence of school burn-out has been found to be around 10% in the adolescent population.¹⁸ The percentages of student-athletes with severe school burn-out symptoms did not differ between sexes. However, student-athletes in the higher school grades were more likely to demonstrate severe school burn-out symptoms. This may be explained, for example, by the increasing academic demands and pressure as the transition to upper secondary education approaches.¹⁹

Table 1 Percentages of Norwegian student-athletes with high or low scores on school burn-out, sport burn-out, self-esteem and psychological distress scales

		Total	Sex		Grade			Sport type	
			Male	Female	8	9	10	Individual	Team
School burn-out									
Low	%	66.0%	67.2%	32.8%	76.6%	61.2%	54.7%	64.7%	66.5%
	N	424	248	121	203	139	82	101	323
High	%	34.0%	64.5%	35.5%	23.4%	38.8%	45.3%	35.3%	33.5%
	N	218	176	97	62	88	68	55	163
P difference			0.469		<0.001			0.639	
Sport burn-out									
Low	%	90.2%	93.5%	85.7%	94.0%	90.3%	83.3%	89.7%	90.3%
	N	579	345	234	249	205	125	140	439
High	%	9.8%	6.5%	14.3%	6.0%	9.7%	16.7%	10.3%	9.7%
	N	63	24	39	16	22	25	16	47
P difference			0.001		0.002			0.831	
Self-esteem									
Low	%	16.2%	10.6%	23.8%	13.6%	20.3%	14.7%	16.7%	16.0%
	N	104	39	65	36	46	22	26	78
High	%	83.8%	89.4%	76.2%	86.4%	79.7%	85.3%	83.3%	84.0%
	N	538	330	208	229	181	128	130	408
P difference			<0.001		0.113			0.856	
Psychological distress									
Low	%	77.9%	87.0%	65.6%	81.5%	75.8%	74.7%	71.8%	79.8%
	N	500	321	179	216	172	112	112	338
High	%	22.1%	13.0%	34.4%	18.5%	24.2%	25.3%	28.2%	20.2%
	N	142	48	94	49	55	38	44	98
P difference			<0.001		.173			.035	

The prevalence of severe sport burn-out among student-athletes was found to be around 10%, which is aligned with other studies conducted among adolescent athletes in the Nordic countries.¹⁷ Female student-athletes and student-athletes in higher school grades were more likely to demonstrate symptoms of severe sport burn-out. Earlier studies have shown that female student-athletes may be more prone to experience burn-out symptoms in sports, as they often face expectations to excel not only in sports but also in school.²⁰ The fact that older athletes experience more burn-out symptoms in sports may be due to the increasing athletic demands as the transition to senior-level sports approaches.

Around 16% of the student-athletes demonstrated self-esteem scores below the cut-off point for low self-esteem. Although no earlier studies have examined the prevalence of low self-esteem among the Norwegian population, this finding indicates that a subgroup of student-athletes in lower secondary sport schools may demonstrate a level of self-esteem that increases their susceptibility to mental health problems. Female student-athletes were found to be more likely to demonstrate low levels of self-esteem,

which is consistent with studies conducted among the general youth population in Norway.¹²

The prevalence of high psychological distress among the student-athletes was around 22%, which is similar to levels in the general youth population in Norway.² Female student-athletes were more likely to demonstrate symptoms of psychological distress, similar to the general Norwegian youth population. One plausible explanation relevant to the sport school context is that female student-athletes experience more pressure to perform well in sports, school and social relations, making them more vulnerable to mental health problems.^{20 21} Notably, we found that student-athletes competing in individual sports in lower secondary schools were more likely to demonstrate symptoms of psychological distress compared with athletes competing in team sports. This may be due to the additional performance-related stress that individual sport athletes experience.²²

Limitations and future directions

This study has a strong theoretical background, and it employed validated instruments that have been

previously used in adolescent populations in Norway. However, although previous tests provide some value for comparisons, direct comparison with data collected from the general Norwegian youth population may be important to ensure that any differences observed in this research are associated with attending lower secondary sport schools. For example, it is possible that differences between the general Norwegian youth population and the sampled student-athletes could also be due to factors such as socioeconomic status.

Further, the current study used data only from the fall of 2023. To better understand the development of student-athletes' mental health across the school years, it is important to conduct longitudinal studies in the future. Moreover, examining how different factors, such as parenting styles/parental success expectations, might contribute to the development of student-athletes' mental health warrants further attention to adequately design strategies and offer advice that could help protect student-athletes from potentially poor mental health outcomes.²³ Earlier research has shown that these factors can play a protective role against sport and school burn-out among student-athletes in upper secondary education.⁴

Practical implications

Although student-athletes experienced comparable levels of psychological distress to the general student population, the results suggest that they may be at elevated risk of school-related burn-out. From a practical perspective, these findings may suggest that some student-athletes in lower secondary sport schools face difficulties in managing the demands of both school and sport, particularly females and those in higher grades. This finding highlights that it is critical for the lower secondary sport schools to ensure that student-athletes do not face excessive demands beyond their resources and that the schools structure their daily schedules to promote adequate recovery, energy replenishment and leisure time beyond the realms of sports and school. Earlier studies have shown that student-athletes often prioritise sports over school, which may increase their feelings of cynicism toward education, therefore, making them more susceptible for experiencing burn-out in school. Sport schools must ensure that their student-athletes do not feel that the demands of schoolwork exceed their resources; however, it is also vital that they emphasise the importance of schoolwork and achieving an education among their student-athletes. In addition, student-athletes might benefit from the learning skillsets needed to successfully balance the demands of both sports and school (ie, time management skills, career planning and motivation).²⁴ Research on student-athletes in upper secondary sport schools indicates a moderate to poor level of coordination between student-athletes, school coaches, club coaches and schoolteachers.²⁵

Therefore, improving coordination and relational quality between stakeholders is essential. Finally, engaging in periodic discussions within sport schools and between teachers and student-athletes may be valuable strategies for detecting the early signs of both burn-out and psychological distress. For example, a contact teacher/coach could meet with their group of student-athletes regularly to discuss perceived stressors and available coping resources, and student-athletes who might need professional help could be sent to the school nurse.

Contributors Conceptualisation: MS, DJP and CTB; Data curation: MS and DJP; Formal analysis: DJP; Funding acquisition: CTB; Investigation: MS; Methodology: MS and DJP; Project administration: MS and CTB; Resources: CTB; Writing—original draft: MS and DJP; Writing—review and editing: MS, DJP and CTB.

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Competing interests None declared.

Patient consent for publication Not applicable.

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