BMJ Open Sport & Exercise Medicine

Mental distress is associated with injury and illness in elite Para athletes: a 44-week prospective study over 13 860 athlete days

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To cite: Bentzen M, Kenttä G, Derman W, *et al*. Mental distress is associated with injury and illness in elite Para athletes: a 44-week prospective study over 13 860 athlete days. *BMJ Open Sport & Exercise Medicine* 2025;**11**:e002267. doi:10.1136/bmjsem-2024-002267

Accepted 24 January 2025

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ABSTRACT

Background The interest in elite athletes' mental health has increased over the past decade. However, there is still a paucity in the literature concerning elite Para athletes' mental health and its association with injuries and illnesses affecting athletes' participation in sports.

Objective To assess the weekly prevalence of mental distress and its association with injury, illness, sleep duration, hours of participation in sports and perceived exertion over a 44-week period in a cohort of Swedish elite Para athletes. A secondary aim was to describe the period prevalence of mental distress.

Methods This was a prospective longitudinal study including 59 Swedish elite Para athletes with physical, visual and intellectual impairments. Each week athletes reported mental distress according to 'The four-item Patient Health Questionnaire for Anxiety and Depression' (PHQ-4), sleep duration, hours of sports participation, perceived exertion as well as any new injury or illness. Descriptive statistics and multilevel regression analyses were used to analyse data.

Results The weekly prevalence was 15% for symptoms of anxiety, and 21% for depressive symptoms. The 44-week period prevalence was 58% for anxiety, and 42% for depressive symptoms. Multilevel logistic regression analyses revealed significant associations between reporting symptoms of mental distress with an ongoing injury, illness, and low sleep duration.

Conclusion Elite Para athletes report a moderate rate of symptoms of anxiety and depression, and there were associations between reporting mental distress and experiencing an injury or illness affecting athletes' participation in sports. The findings highlight the importance of longitudinal mental health monitoring and multidisciplinary support systems targeting those athletes reporting mental distress, injury or illness.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The interest in elite athletes' mental health has increased over the past decade with most studies being conducted among non-disabled athletes. Still, there is a paucity in the literature about elite Para athletes' mental health and its association with injuries and illnesses in sports.

WHAT THIS STUDY ADDS

⇒ Results from this study show that elite Para athletes report a moderate rate of weekly symptoms of anxiety (15%) and symptoms of depression (21%). Around half of the study population reported symptoms of anxiety or depression at some point during the study period.

⇒ Athletes who experienced an injury or illness reported a significantly higher rate of mental distress the same week, indicating that mental health is an important factor to include in epidemiological research and practical health interventions. Also, low levels of sleep were related to reporting symptoms of anxiety. Results show that it is crucial to adequately support injured or ill Para athletes experiencing mental distress.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Based on the current findings it could be suggested that it would be valuable for each National Paralympic Committee to longitudinally monitor mental health in elite Para athletes, and have a multidisciplinary and proactive support system in place to protect Para athletes' health.

INTRODUCTION

In the ever-evolving landscape of sports, the holistic well-being of athletes has become an important focus of professional practice and research.[1 2] High demands are placed on elite athletes, and common stressors that have been associated with mental distress are poor performance, competition pressure, sports injuries and illnesses, overtraining and media exposure.[1 3] In addition, athletes may experience challenges related to their daily lives, such as financial stressors, relationships and work/school.[1 3] In the general population, mental health issues have grown to be one of the most common reasons for morbidity and mortality in the young population.[4] To better understand and support the well-being

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of elite athletes, the IOC consensus statement on mental health states that more thorough research of mental health epidemiology in elite athletes is needed, and it has been highlighted that there is particularly sparse data regarding mental health in Para athletes.[1] Interestingly, this research area started to grow after the COVID-19 pandemic and there are now a couple of studies that have assessed Para athletes' mental health,[5 6] although this is still an understudied population with few studies that have assessed the cause and associations of mental distress.[7]

In addition to the stressors described for non-disabled athletes, the Para athlete may be exposed to stressors such as chronic pain, social exclusion and barriers related to accessibility and equity both in sports and in daily life situations.[7 8] In general, there is an unexamined assumption that Para sport participation improves mental health in persons with an impairment, and thus the athlete's psychological well-being.[1] Still, few studies have prospectively monitored mental health among Para athletes.

Among non-disabled athletes, studies have indicated correlations between sports injuries, high training loads, sleep disturbances and increased markers of stress, anxiety and depression.[9–11] Subsequently, the IOC consensus statement on mental health in elite sport recommended monitoring mental distress and its association with other athlete health factors.[1] Longitudinal monitoring of mental health in Para athletes was also recommended in the 'Para sport translation of the IOC consensus on recording and reporting of data for injury and illness in sport'.[12] Such data would allow researchers and clinicians to better understand the consequences of mental stressors and health over time and eventually develop targeted prevention measures. Thus, the aim of this study was to prospectively assess the weekly prevalence of mental distress in Swedish elite Para athletes over 44 weeks, and to examine the association between mental distress, injury, illness, sleep duration, hours of participation in sports and perceived exertion. A secondary aim was to describe the 44-week period prevalence of mental distress.

METHODS

Study design

This longitudinal prospective cohort study is based on the consensus recommendations for collecting and reporting epidemiological research in Para sports.[12] The data collection is part of the Safe and Healthy Para sport project,[13] where 44 weeks of prospective data were collected from May 2022 to March 2023. The study follows the Strengthening the Reporting of Observational Studies in Epidemiology guidelines.[14]

Equity, diversity and inclusion statement

This study included elite Para athletes, which is a marginalised and understudied group in comparison to non-disabled elite athletes. The author team has a diverse background and consists of two women and five men, from Scandinavia and Southern Africa, and represents the following professions: researcher, physiotherapist, physician, sports scientist and sports psychologist.

Patient and public involvement

The data collection method was evaluated by and adapted to Para athletes themselves in a feasibility and usability study,[15] and the research was conducted in close collaboration with the sports context (Parasport Sweden and The Swedish Paralympic Committee).

Data collection

In total, 70 elite Para athletes from the Swedish Paralympic programme were invited to participate in this study. The following inclusion criteria were used; (1) being a classified Para athlete according to the International Paralympic Committee's code for classification[16]; (2) being a candidate for the 2024 or 2026 Paralympic Games; (3) having the accessibility to respond to a weekly online survey in Swedish. In total, 59 athletes with neurological, musculoskeletal, visual and intellectual impairments accepted the invitation and met the inclusion criteria. The methods used in this study are based on the Sports-Related Injury and Illness in Paralympic Sports study (SRIIPS) which have been described in a published study protocol.[17 18]

To collect data on mental distress and the other outcome variables (injuries, illnesses, sleep duration, hours of sports participation and perceived exertion) athletes were asked to fill in a weekly e-dairy in an accessible eHealth application, each Sunday. A reminder was sent each Wednesday for those who had not yet answered.[17] The study coordinator (KF) monitored the reported data each week and data were shared with a multidisciplinary medical team within the Swedish Paralympic Committee. Moreover, athletes could tick a box to indicate the need for medical contact and specify the profession needed. Athletes reporting a life-threatening incident were contacted immediately, and athletes who reported mental distress for more than three subsequent weeks were contacted for follow-up.

Mental distress (symptoms of anxiety and depression) was measured using an adapted version of 'The four-item Patient Health Questionnaire for Anxiety and Depression' (PHQ-4).[19] This measure has previously been used within the sports medicine context, and also successfully validated specifically for use among Para athletes by Meidl *et al*.[5 6 20] An injury or illness was defined as 'any condition that reduces an athlete's normal state of full health, irrespective of its consequences for the athlete's sports participation or performance or whether the athlete sought medical attention'.[12] For the current study, injury and illness were dichotomous variables. Specific and more detailed analyses of the injury and illness data form part of separate sub-studies. Sleep was reported as hours of sleep (0–5 hours, 6–7 hours, 8–9 hours, 10–11 hours, >11 hours), participation of hours in sports including weekly hours in training and competition, while

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perceived exertion was measured by asking the participants to estimate their rating of perceived exertion for the total of training hours reported last week on the Borg CR10 scale ranging from 0 to 10 (0=no perceived exertion, 10=maximal perceived exertion).[21] The use of this scale among Para athletes has previously been described in the SRIIPS study protocol.[17]

Data analysis

Descriptive statistics were used to present demographic data (sex, age, impairment type, age and sport), to calculate weekly prevalence (proportion of athletes reporting mental distress each week) and total period prevalence (proportion of athletes reporting mental distress over 44 weeks). The weekly scoring of mental distress according to the PHQ-4, includes responses to four items in total (two for depression and two for anxiety). On each item, the participants were asked how often they had been bothered with any symptom during the past week (not at all, several days, more than half the days or nearly every day). Following the measurement guidelines,[19] a total score of each variable was calculated, with total scores ≥3 classified as a symptom of anxiety or depression. To explore the occurrence of symptoms of anxiety and depression from PHQ-4 scores, two different criteria were chosen: (1) frequency level of symptoms: 0–1=no symptoms; 2=mild symptom; ≥3=clear symptoms and (2) dichotomous variable symptoms (no/yes): no=0–1; yes=≥2.[19] The dichotomous variable for symptoms was used in the regression analysis.

To explore mental distress and its association with injury, illness, sleep, hours of sports participation and perceived exertion over the 44-week period, multilevel logistic regression was conducted.[22] The observations were nested for each participant over the 44 weeks, with participants treated as higher-order units. The analyses explored only the within-participant effects as the purpose of this study was to examine the occurrence of individual events over time.[23 24] Results of the multilevel logistic regression are presented for the two models predicting potential significant effects and OR for each variable (injury, illness, sleep, hours of sports participation and perceived exertion for either anxiety or depression). The effect size of the OR was evaluated according to existing guidelines: an OR about 1.5 has a small effect size, an OR about 2.5 has a medium effect size, an OR about 4 has a large effect size and finally, an OR about 10 has a very large effect size.[25 26] Further, an OR close to 1 means no association between variables, no effect.[27] A significance level of <0.05 was used for all analyses, and the statistical software used was IBM SPSS Statistics V.28.0.0.0 (IBM, Boston, Massachusetts, USA) and Mplus V.8.10 (Muthén & Muthén, 1998–2023).

RESULTS

Of the 59 elite Para athletes, 54 responded to at least one weekly report. Of these, nine were excluded due to answering at ≤5 time points. This resulted in a total sample of 45 participants included in the analyses. These participants were invited to answer a total of 1805 weekly reports, where 1457 were returned (81% weekly response rate).

The majority of participants were male (64.4%), had a neurological impairment (55.6%), were in the age range 35–65 years (40%) and participated in a Paralympic Summer sport (64.4%) (table 1). The following Paralympic Summer sports were represented: Para athletics, Boccia, Para cycling, Equestrian, Goalball, Para judo, Para shooting, Para swimming and Para table tennis. Furthermore, the following Para Winter Sports were represented: Wheelchair curling, Para ice hockey, Para alpine skiing and Para cross country skiing. On average, athletes participated in sports 8.4 (SD=±5.74) hours/per week. The average weekly perceived exertion of sports participation was 4.71 (SD=±2.23). Most of the athletes slept 8–9 hours per night (52.5%). Over the 44 weeks, an injury was reported by 29 athletes, resulting in a period prevalence of 64.4% (223 total athlete weeks with an ongoing injury). In total, 34 athletes reported an illness (period prevalence: 75.5%; 153 total athlete weeks with an ongoing illness). Six athletes requested contact with a sports psychologist and were followed up, and an additional five athletes were contacted due to reporting mental distress over several weeks.

Descriptive data of mental distress

The average weekly prevalence for symptoms of anxiety was 14.5% (range 2.9%–32.1%), which was scored in 14.7% (n=216) of all weekly reports. Of these symptoms, 11.0% (n=162) were mild and 3.7% (n=54) classified as clear symptoms of anxiety. The total period prevalence of athletes reporting anxiety was 57.8%. Regarding depression, the average weekly prevalence of symptoms was 21.2% (range 7.1%–39.3%), which was scored in 21.0% (n=309) of all reports. Of these, 10.7% (n=157) were mild and 10.3% (n=152) were clear symptoms of depression. The period prevalence of athletes reporting symptoms of depression was 42.2%. All weekly rates of symptoms and depression are presented in figure 1 alongside information about the Paralympic cycles, and other important happenings in Sweden that may compromise training behaviour and mental health. The overall data indicates a drop in mental distress during holidays.

Mental distress and its association with injury, illness, sleep and perceived exertion

Multilevel regression analyses revealed that athletes who experienced an illness reported a significantly higher rate of anxiety symptoms within the same week (OR 2.64, medium effect size; CI 1.69–4.12, p<0.001). Further, athletes who reported an injury also reported symptoms of anxiety within the same week to a higher degree (OR 1.75, small effect size; CI 1.17–2.62, p=0.007). Moreover, athletes reporting lower levels of sleep had a higher likelihood of also reporting symptoms of anxiety within the same week (OR 1.64, small effect size; CI 0.48–0.77,

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Table 1 Athlete demographics and weekly distribution of athletes reporting symptoms of anxiety and depression presented for each category

	Number of participants	Symptoms of anxiety*	Symptoms of depression*
Sex			
Male	29 (64.4%)	118 (8.1%)	169 (11.5%)
Female	16 (35.6%)	98 (6.7%)	140 (9.6%)
Age category			
18–25	13 (28.9%)	45 (3.1%)	110 (7.5%)
26–34	14 (31.1%)	79 (5.4%)	64 (4.4%)
35–65	18 (40.0%)	92 (6.3%)	135 (9.2%)
Type of sport			
Summer	29 (64.4%)	137 (9.4%)	199 (13.6%)
Winter	16 (35.6%)	79 (5.4%)	110 (7.5%)
Impairment category		†	†
Visual	11 (24.4)		
Neurological	25 (55.6%)		
Musculoskeletal	7 (15.6%)		
Intellectual	2 (4.4%)		

*Any symptoms of anxiety and depression categorised as a dichotomous variable as described in the Methods section.
†Due to a small sample of athletes in each impairment category mental distress is not reported to protect athletes confidentially.

p<0.001). Also, a significant association between symptoms of anxiety and fewer hours of participation in sports was present, although the OR yielded a very small effect (OR 1.06, very small effect size; CI 0.91–0.98, p=0.004).

Concerning symptoms of depression, athletes who reported an injury also reported depressive symptoms to a higher degree within the same week (OR 2.64, medium effect size; CI 1.87–3.73, p<0.001). Finally, athletes who reported an illness also had a higher likelihood of reporting symptoms of depression the same week (OR 1.98, small effect size; CI 1.30–3.02, p<0.001). There was no association between the duration of sleep, perceived exertion and depression. Finally, a significant association between symptoms of depression and training a few hours was present, although the OR yielded a very small effect (OR 1.03, very small effect size; CI 0.94–1.00, p=0.03) (table 2).

DISCUSSION

This study observed a 15% weekly prevalence of symptoms of anxiety and a 21% weekly prevalence of symptoms of depression in a population of Swedish elite Para athletes. Athletes who experienced an illness or injury reported significantly more symptoms of anxiety within the same week compared to healthy subjects, whereof the effect size was medium for illness and small for injury. Also, athletes who reported an injury or illness reported experiencing symptoms of depression in the same week to a higher level compared to healthy subjects, whereof the effect size was small for illness and medium for injury. Furthermore, athletes reporting lower levels of sleep reported symptoms of anxiety in the same week to a greater extrent, where the effect size was small.

Weekly rates of mental distress

The findings of this study align with those reported in a prior investigation that assessed the mental health of Swedish elite Para athletes before and during the 2022 Paralympic Winter Games in Beijing.[5] A total of 16% of the athletes reported symptoms of anxiety in the weeks preceding the Paralympic Games, mirroring the current findings where 15% of athletes reported a weekly prevalence of symptoms of anxiety. In contrast, 48% of the participants in the previous study reported symptoms of anxiety *during* the Games.

The same pattern was observed for depression, where the weekly prevalence of symptoms of depression in the present study (21%) was similar to the 19% of athletes reporting depressive symptoms the weeks before the Games.[5] Again, the prevalence of depressive symptoms increased during the Games to 38%.[5] The study period of the present study was just after the Paralympic Games 2022 for the Winter Para athletes and almost two years ahead of the Summer Paralympic Games 2024 for the Summer Para athletes. These results indicate that especially participation in major competitions seems to expose the Para athlete to various mental health struggles. Another interesting indication of the descriptive weekly rates in this study is that rates of mental distress seem to decrease during holidays. A majority of elite Para athletes in Sweden work or study at the same time as they are elite athletes,[28] and a reduction in reported mental

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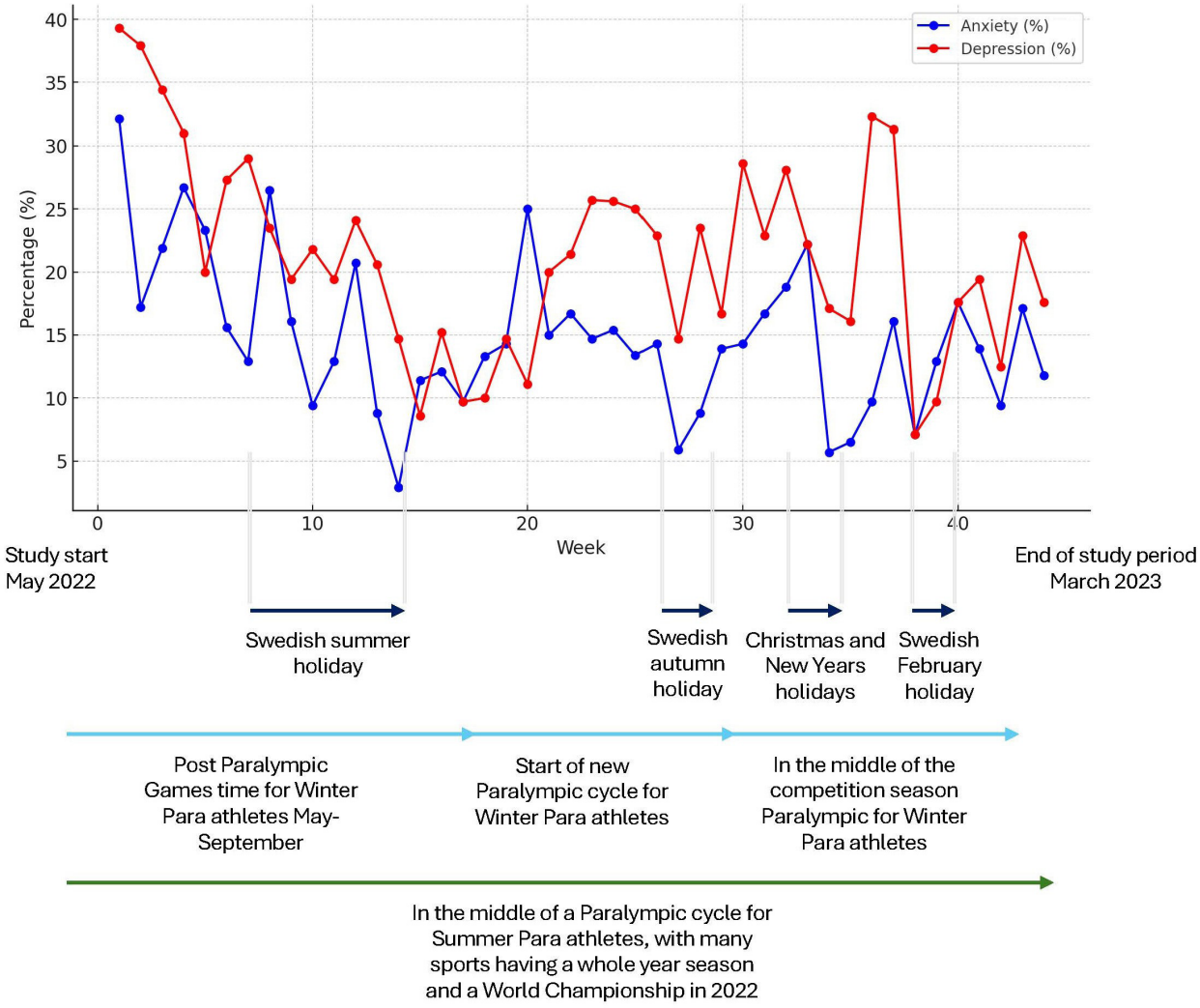

Figure 1 Weekly prevalance of Para athletes reporting symptoms of anxiety and depression over 44 weeks.

distress symptoms during or just after holidays may indicate that there is more time for recovery. Moreover, these findings highlight the need for future prospective longitudinal monitoring including major events and different training periods more specifically. Such monitoring facilitates the identification and timely provision of mental health support for athletes at risk.

Few studies have prospectively reported the weekly prevalence of mental distress among Para athletes. In non-disabled athletes, a similar study reported that 37% of the athletes had symptoms of anxiety/depression throughout the year.[29] In the present study of Para athletes, 58% of the athletes reported symptoms of anxiety and 42% symptoms of depression at some point during the 44-week study period, indicating that Para athletes report a slightly higher rate of mental distress compared with non-disabled athletes, and therefore there is a need to better understand mental health problems in Para athletes.

Mental distress and association with injury and illness

Reporting an ongoing injury or illness was significantly related to the presence of symptoms of anxiety and depression. A strength of the present study is the inclusion of illness, as most studies within the sports medicine field have only focused on injuries and mental distress.[30] In the current study, illness was the associated variable showing the strongest association with symptoms of anxiety, with a medium effect size. A plausible reason for this might be that for athletes, an illness may cause concerns regarding its severity, feelings of uncertainty regarding recovery time and worries about performance and persistent side effects of disease or medications used in management. For example, studies during the COVID-19 pandemic showed that especially anxiety rates increase during illness presence.[31] In the Para population, other factors related to illness, such as increased spasticity during an infection, may further compromise mental health and it is recommended that future qualitative studies examine in-depth how Para athletes themselves experience how an injury and illness in sports may affect their mental health.

In the current study, the variable showing the strongest association with symptoms of depression was injury, with a medium effect size. This association between injury and symptoms of depression is similar to previous

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Table 2 Multilevel logistic regression analysis of the association between mental distress (symptoms of anxiety and depression) and outcomes variables

	OR	(95% CI)	P value	Effect size
Symptoms of anxiety				
Injury	1.75	(1.17 – 2.62)	0.007	Small
Illness	2.64	(1.69 – 4.12)	<0.001	Medium
Sleep hours*	1.64	(0.48 – 0.77)	<0.001	Small
Hours of sports participation*	1.06	(0.91 – 0.98)	0.004	Very small
Perceived exertion	1.03	(0.90 – 1.05)	0.436	Very small
Symptoms of depression				
Injury	2.64	(1.87 – 3.73)	<0.001	Medium
Illness	1.98	(1.30 – 3.02)	<0.001	Small
Sleep hours*	1.09	(0.75 – 1.13)	0.414	Very small
Training hours*	1.03	(0.94 – 1.00)	0.030	Very small
Perceived exertion	1.02	(0.96 – 1.09)	0.560	Very small

*Reversed regression scale, meaning athletes with fewer hours of sleep and training are more likely to experience mental distress.

findings among non-disabled elite athletes.[32] Moreover, it has been shown that symptoms of depression during an injury in non-disabled athletes are related to prolonged recovery times, decreased rates and success of return to sport, and higher rates of injury recurrence.[33] For the Para athlete, an injury may also cause difficulties during activities of daily living, for example, difficulties in executing wheelchair propulsion following a shoulder injury or difficulties walking without prosthesis following a leg injury,[34] which hypothetically could increase the rate of symptoms of depression.

Fewer hours of sleep were associated with increased symptoms of anxiety. This is in line with previous research, indicating that poor sleep is associated with poor recovery and higher markers of anxiety among non-disabled athletes.[35] In Para athletes, low levels of sleep and poor sleep quality have been reported in a number of previous studies,[36–38] but few have assessed the association with mental health. Since the association in this study had a small effect size, there is a need for further research in this area. Regarding the association between few training hours and mental distress, it could be suggested that athletes who experience mental distress do not have the same stamina to train or alternatively, athletes may be anxious about their level of under-preparedness. Due to a small effect size, the latter associations need to be further investigated.

Practical implications and future research

Results from this study highlight the importance of closely monitoring mental health symptoms in elite Para athletes. Supporting injured or ill Para athletes already experiencing mental distress requires a multidisciplinary approach involving collaboration among specialised healthcare providers, psychologists and knowledgeable coaches. For example, interventions such as mindfulness- and acceptance approaches have gained attention in both research and practice with the aim of enhancing athletes' mental health.[39] It can be argued that especially these transdiagnostic interventions would benefit from multidisciplinary collaboration and have the potential to address mental distress issues related to injury, illness and poor sleep. In addition to sports-related mental distress, the Para athlete may also experience mental distress related to having a disability.[4] Furthermore, as recent research has also shown that many Para athletes use prescribed medications,[18] there is a need to carefully manage medications to prevent adverse effects that could exacerbate depressive symptoms. Another important finding is that 25.5% of those reporting anxiety had 'clear' symptoms of anxiety whereas 48.6% of those with depression had 'clear' symptoms of depression, indicating that especially athletes reporting depressive symptoms should be taken seriously and followed up. Also, athletes reporting symptoms of anxiety should be followed up, but it is important to be aware that occasional anxiety has been suggested to be a normal part of life,[40] which athletes also could be educated about.

Taken together, it is crucial to ensure that the Para athlete has access to medical care tailored specifically to their needs. Integrated care plans should address coexisting medical and mental conditions, and healthcare providers working with Para athletes should be trained to improve athletes' experiences and interactions within the healthcare system. Additionally, educating coaches to better understand the specific demands of Para sports and the psychological aspects of injury and illness is crucial. Finally, a proactive approach is necessary, with a low threshold for contacting athletes who report mental distress, injury or illness.

As mental distress was associated with both injury and illness, another key factor is primary prevention of injuries and illnesses. Yet, injury and illness epidemiology in Para sport is still a young research discipline with few evidence-based prevention programmes. Until more research is available it can be recommended to educate athletes and coaches in basic prevention measures used for non-disabled athletes, for example, neuromuscular control training, strength training, nutrition, sleep hygiene and recovery strategies including individual and holistic adaptations.[13 41] It is also important that athletes are monitored carefully through regular pre-participation screening assessing both physical and mental health.

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Future research could aim to generate targeted prediction models on mental health based on the reporting that could be used by researchers and clinicians to monitor and alert the individual athlete with person-centred advice and mental health support. Additional digital health data from sports technology devices, for example, heart rate variability, sleep, training load and menstrual cycle tracking could add valuable information to these predictions and advice. As research among non-disabled athletes has shown that environmental factors such as conflicts with coaches and the sports organisation, lack of support from the sports context and poor performance can contribute to mental distress,[42] it could be recommended to also include these factors in the future Para athlete research. It is also recommended to include impairment-related variables such as chronic pain, accessibility within the sports environment and lived experiences from personal guides and healthcare professionals.

Strengths and limitations

A strength of the present study is the use of the adapted version of the PHQ-4,[19] which has been validated for Para athletes,[20] and has been used successfully in two previous studies targeting Para athletes.[5 6] A limitation of the present study is the total population design and relatively small sample leading to the inability to attribute causality. Also, there are several potential confounding factors, such as daily use of certain medications and daily symptoms of spasticity, that may have affected outcomes such as sleep and anxiety. Further, as the analyses are based on relation between variables within the same week, we cannot be sure about the 'cause and effect' of, for example, lower levels of sleep and high anxiety levels. Also, due to the low number of athletes in certain impairment groups, it was not possible to present data of mental distress by impairment category, as it would compromise athlete confidentiality. Therefore, larger multi-centre studies are warranted, especially studies including under-represented groups such as female Para athletes, athletes with intellectual impairments, winter Para athletes and young aspiring Para athletes.

Another limitation is that we did not control for participation in major competitions in the weekly reports, which is recommended in future studies. However, this is a challenge due to the inclusion of athletes participating in multiple Winter and Summer Para sports. This is also the reality that the National Paralympic Committee's face when planning and delivering medical services. Still, the data from the present study are valuable for planning medical services at a group level, as well as having the possibility to clinically target individual athletes. The inclusion of many sports, and both a Summer and Winter Paralympic cycle, also highlights the high burden that is placed on staff to follow-up various athletes and sports.

CONCLUSION

This study revealed that Swedish elite Para athletes reported a moderate rate of weekly symptoms of anxiety (15%) and depression (21%). Around half of the population reported symptoms of anxiety or depression at some point during the study period. Significant associations between reporting mental distress and experiencing an injury or illness were present. Lower levels of sleep duration were also associated with symptoms of anxiety. These findings highlight the need for longitudinal mental health monitoring in elite Para athletes, and multidisciplinary and proactive support systems tailored to the needs of those reporting mental distress, injury or illness.

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Acknowledgements Thanks to Parasport Sweden and The Swedish Paralympic Committee for collaborating in this project.

Contributors KF, MB and GK contributed to conceptualisation and methodology. MB contributed to formal analysis. All authors contributed to data collection and interpretation of results. All authors have read and agreed to the published version of the manuscript. KF is the guarantor of this study.

Funding This project is funded by research grants from The Swedish Research Council of Sports Science, Folksam, Promobilia and Norrbacka-Eugeniastiftelsen.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval This study involves human participants and was approved by Swedish Ethical Review Authority (2021-05827-01), and adheres to the Declaration of Helsinki ethical recommendations. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

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