DISSERTATION FROM THE
NORWEGIAN SCHOOL OF
SPORT SCIENCES
2023

Nina Sølvberg

Sexual Harassment and Abuse among Adolescent Elite athletes, Recreational athletes, and Reference students

A prospective cohort study among high school students in Norway

NIH NORWEGIAN SCHOOL OF SPORT SCIENCES

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"Always go with the choice that scares you the most, because that's the one that is going to help you grow."

- Caroline Myss

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Nina Sølvberg

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List of papers

Paper I (published)

Sølvberg, N., Torstveit, M.K., Rosenvinge, J.H., Pettersen, G., & Sundgot-Borgen, J. Sexual Harassment and Abuse among Young Elite Athletes, Recreational Athletes, and Reference Students. A Prospective Study. *Medicine and Science in Sports and Exercise. 2022;54(11):*1869-78. doi:10.1249/mss.0000000000002972.

Paper II (under review in Child, Abuse & Neglect)

Sølvberg, N., Torstveit, M.K., Solstad, B.E., Mountjoy, M., Rosenvinge, J.H., Pettersen, G., & Sundgot-Borgen, J. Risk factors for sexual harassment and abuse victimization among adolescent athletes and non-athletes. A one-year follow-up study.

Paper III (under review after minor revisions in Frontiers in Psychology, section Health Psychology)

Sølvberg, N., Torstveit, M.K., Mountjoy, M., Rosenvinge, J.H., Pettersen, G., & Sundgot-Borgen, J. Sexual Harassment and Abuse; Disclosure and Awareness of Report- and Support Resources in Norwegian Sport- and Non-sport High Schools. A Prospective Exploratory Study.

Summary

Background: All athletes have the right to participate in "safe sport". Although sports participation is associated with many health benefits, the sport context also suffers from negative experiences like sexual harassment and abuse (SHA). Adolescence is considered a vulnerable period for experiencing SHA and elite athletes have been highlighted as a risk group. Different definitions and operationalizations of SHA, in addition to methodological shortcomings, have challenged interpretation and comparison of results between studies. Well-targeted preventive measures are needed, hence increased knowledge about prevalence, risk factors, and consequences has been requested. Knowledge about the prevalence of SHA victimization and SHA revictimization in settings where the adolescents are currently active is important for highlighting the magnitude of the problem for policymakers and researchers, underlining the need for more research and interventions to prevent SHA. In addition, knowledge about factors that may increase the risk of SHA victimization, and awareness about report- and support resources in school is necessary for future development of well-targeted prevention programs.

Objectives: The main aim of the Ph.D.-study was to examine the prevalence and magnitude of SHA among adolescent elite athletes, recreational athletes, and reference students in different social settings in Norway. The specific aims for paper I were to examine the 12-month prevalence and 12-month prospective change in SHA victimization, and identify the perpetrators of SHA. In paper II, the aims were to examine the prevalence of SHA revictimization and risk factors for SHA victimization. The aims for paper III were to examine awareness about report- and support mechanisms in school, and disclosure of SHA experiences.

Methods: A prospective cohort study was conducted in Norway, including adolescent elite athletes and recreational athletes attending sport high schools (n = 26), and reference students attending non-sport high schools (n = 6). The sample sizes were n = 919 in paper I, n = 1139 in paper II and n = 1200 in paper III. The gender distribution was 49.9% boys, 49.8% girls, and four participants reported non-binary gender. The participants responded to an online questionnaire in 12th grade (T1, mean age: 17.1 years) and one year later in 13th grade (T2). Experiences of verbal, non-verbal, and physical SHA were measured by 13 items. Leaders and coaches (n = 249) at the participating schools responded to a different version of the questionnaire.

Results: Paper I: The total 12-months prevalence of reported SHA was 38.6% at T1 and 35.1% at T2, with a significant decrease in the school and sport setting from T1 to T2. Girls reported more SHA than boys. The prevalence of SHA was lower among elite athletes compared with recreational athletes and reference students. Verbal- and non-verbal SH was more frequently reported than physical SHA, and SHA occurred more often in free time settings compared to sport and school settings. Peers were most frequently reported as perpetrators, followed by "others", and trainers/teachers/health personnel. **Paper II:** Half of the adolescents who reported lifetime experience of SHA at T1 also reported revictimization at T2. The prevalence of SHA revictimization was higher among girls than boys, and lower among elite athletes compared with recreational athletes and reference students. The combination of being a girl with high level of symptoms of eating disorders and other psychological health problems (measured at T1) was associated with reporting subsequent SHA victimization at T2. **Paper III**: One in ten adolescents in total were aware of reporting systems in their school and one in three were aware of support mechanisms. Half of the coaches and nearly all the leaders reported to know these resources. One in five of the adolescents who reported lifetime experience of SHA had disclosed to someone, mostly to peers and family members. The rate of disclosure was lower in boys compared with girls, and lower among the elite- and recreational athletes compared with the reference students. There was negative change in awareness of support mechanisms and rate of disclosure from T1 to T2.

Conclusions: A high prevalence of SHA victimization and revictimization among adolescent elite athletes, recreational athletes, and reference students, combined with a low rate of disclosure, calls for well-targeted preventive measures. Attention should be directed towards handling symptoms of eating disorders and other psychological health problems in prevention of SHA for girls. Further examination of mental health factors for boys, alongside a history of SHA, should be examined as possible risk factors for subsequent SHA victimization. To lower barriers for help-seeking, increased institutional effort is needed to increase information about available report- and support resources, and advance the relevance of use for adolescents.

Sammendrag (Summary in Norwegian)

Bakgrunn: Alle utøvere har rett til å delta i en trygg idrett. Selv om deltagelse i idrett er assosiert med mange helsefordeler finnes det også negative opplevelser som seksuell trakassering og overgrep (STO) i idrettsmiljøet. Ungdomsårene er ansett som en sårbar periode for å oppleve STO, og eliteidrettsutøvere er fremhevet som en risikogruppe. Forskjellige definisjoner og operasjonaliseringer av STO, samt andre metodiske begrensninger, har utfordret tolkning og sammenligning av resultater fra ulike studier. Målrettede forebyggende tiltak er tiltrengt, og derfor er økt kunnskap om forekomst, risikofaktorer og konsekvenser etterspurt. Kunnskap om forekomst av STO, samt reviktimisering i miljøer der ungdommer oppholder seg er viktig for å fremme omfanget av problemet for politikere, beslutningstakere og forskere, noe som kan understreke behovet for mer forskning og intervensjoner for å forebygge seksuell trakassering og overgrep. For å utvikle målrettede forebyggende programmer i fremtiden trenger vi også kunnskap om faktorer som kan øke risikoen for å oppleve STO, samt bevissthet omkring systemer på skolen for å rapportere om hendelser og å oppsøke hjelp.

Hensikt: Hovedformålet med prosjektet var å kartlegge forekomst og omfang av STO blant unge eliteutøvere, breddeutøvere og referansestudenter i ulike sosiale kontekster i Norge. Hensikten med artikkel I var å undersøke 12-måneders forekomst og 12-måneders prospektiv endring i forekomst av STO, og kartlegge hvem som utøver trakasseringen. I artikkel II var hensikten å undersøke forekomst av reviktimisering, samt risikofaktorer for å oppleve STO. Hensikten med artikkel III var å undersøke kjennskap til rapporteringssystemer og hjelpetilbud på skolen, samt andelen som hadde varslet om sine opplevelser.

Metode: En prospektiv kohortestudie ble gjennomført i Norge med unge eliteutøvere fra toppidrettsgymnas eller eliteidrettslinjer på ordinære videregående skoler, breddeidrettsutøvere fra idrettslinje på ordinære videregående skoler, og referansestudenter fra studiespesialiserende linjer på ordinære videregående skoler. Utvalgsstørrelsen var n = 919 i artikkel I, n = 1139 i artikkel II og n = 1200 i artikkel III. Kjønnsfordelingen var 49.9% gutter, 49.8% jenter, og fire deltagere rapporterte ikke-binær kjønnsidentifisering. Deltagerne svarte på et elektronisk spørreskjema i 2. klasse på videregående (T1, gjennomsnittsalder 17.1 år) og ett år senere i 3. klasse på videregående.

Opplevelser med verbal-, ikke-verbal-, og fysisk STO ble kartlagt med 13 spørsmål. Ledere og trenere på de deltagende skolene (n = 249) svarte på en annen versjon av spørreskjemaet.

Resultater: Artikkel I: Total 12-måneders forekomst av STO var 38.6% på T1 og 35.1% på T2, med en signifikant reduksjon i skolesetting og idrettssetting fra T1 til T2. Jenter rapporterte mer STO enn gutter. Forekomsten var lavere blant eliteutøverne sammenlignet med breddeutøverne og referansestudentene. Verbale- og ikke-verbale former for seksuell trakassering ble oftere rapportert enn fysisk STO, og hendelsene skjedde oftere i en fritidssammenheng enn i idrettssammenheng utenfor skolen eller på skolen. Jevnaldrende ble oftest rapportert som gjerningsperson, etterfulgt av "andre" og trenere/lærere/helsepersonell. **Artikkel II:** Halvparten av studentene som rapporterte livstidsopplevelser med STO på T1 rapporterte også reviktimisering på T2. Forekomsten av reviktimisering var høyere blant jenter enn gutter, og lavere blant eliteutøverne sammenlignet med breddeutøverne og referansestudentene. Kombinasjonen av å være jente med høyt nivå av symptomer på spiseforstyrrelser og andre psykiske helseplager (målt ved T1) var assosiert med rapportering av påfølgende opplevelser med STO på T2. **Artikkel III**: Totalt én av ti ungdommer kjente til et system for å rapportere om STO på skolen, mens en av tre var kjent med et hjelpesystem. Halvparten av trenerne og nærmest alle lederne rapporterte å kjenne til disse ressursene på skolen. En av fem ungdommer som hadde opplevd STO tidligere i livet hadde varslet om dette, fortrinnsvis til jevnaldrende og familiemedlemmer. En lavere andel av guttene hadde varslet sammenlignet med jentene, og en lavere andel av elite- og breddeutøverne hadde varslet sammenlignet med referansestudentene. Det var en negativ endring i kjennskap til hjelpesystemet på skolen, samt andelen som varslet om sine opplevelser fra T1 til T2.

Konklusjon: Høy forekomst av STO og reviktimisering blant unge eliteutøvere, breddesutøvere og referansestudenter, kombinert med lav grad av varsling, understreker behovet for målrettede forebyggende tiltak. Fokus bør rettes mot å håndtere symptomer på spiseforstyrrelser og andre psykiske helseproblemer i forebygging av seksuell trakassering og overgrep blant jenter. Videre forskning på mentale helse-faktorer blant gutter, samt tidligere opplevelser med STO, bør undersøkes som mulige risikofaktorer for påfølgende opplevelser med STO. For å senke terskelen for å søke hjelp er det behov å øke informasjon om tilgjengelige rapporteringssystemer og hvor man kan søke hjelp hvis man har opplevd STO. Det er også behov for å tilpasse systemene til den unge brukergruppen.

Dissertation at a glace

Theme	Research questions	Results	Implications
Paper I: Sexual harassment and abuse (SHA) victimization.	What is the prevalence of SHA among adolescent elite athletes, recreational athletes, and reference students? What type of SHA do the adolescents experience, in what setting, and who are the perpetrators?	**Total 12-month prevalence of SHA:** T1: 38.6% (♀ 47.6%, ♂ 29.1%) T2: 35.1% (♀ 47.4%, ♂ 22.1%) Lower prevalence of SHA among elite athletes compared with recreational athletes and reference students. Verbal- and non-verbal SH more common than physical SHA. More experiences of SHA in free time than in sport- and school settings. Peers were most frequently reported as perpetrators. Significant decrease in SHA in the school and sport setting from T1 to T2.	Prevention of SHA in adolescent athletes and non-athletes is warranted. Educational programs are needed for leaders, administrators, coaches, teachers, and others working with adolescents.
Paper II: SHA revictimization and risk factors for subsequent SHA victimization.	What is the prevalence of SHA revictimization? Which combinations of demographic- and mental health factors at T1 is associated with subsequent SHA victimization at T2 for adolescents?	**SHA revictimization:** 49.5% Girls: 60.9% Boys: 32.2% Elite athletes: 44.3% Recreational athletes: 49.1% Reference students: 59.4% Significant risk factors for subsequent SHA victimization were a combination of female gender, high level of symptoms of eating disorders, and other psychological health problems. Because of statistical reasons, previous experience of SHA was not included in the main analysis but appeared as a risk factor for subsequent SHA when included in a separate analysis.	Prevention of SHA victimization and SHA revictimization is necessary. Measures aiming to manage symptoms of eating disorders and psychological health problems, in addition to previous experiences of SHA, as possible risk factors for subsequent SHA victimization should be developed and implemented in high school. Health practitioners, teachers and coaches should know signs and symptoms of SHA and mental health issues, to support and guide adolescents to appropriate help.

Theme	Research questions	Results	Implications
Paper III: Awareness of report- and support resources in high school, and disclosure of SHA experiences.	Examine awareness and use of reporting systems and support mechanisms in high school among adolescents and coaches/leaders. Examine disclosure of SHA among adolescents.	**Awareness of reporting systems:** Adolescents: 11.4% Coaches: 51.9% Leaders: 94.9% **Awareness of support mechanisms:** Adolescents: 34.0% Coaches: 51.3% Leaders: 94.9% **Adolescents' disclosure of SHA:** Girls: 25.4% Boys: 12.1% Most frequent points of disclosure were peers, parents/family members, and teachers/coaches.	Increased institutional efforts is needed to lower barriers for help-seeking. Resources should resonate with the users' needs, emphasizing the importance of adolescent user involvement. Peer support is necessary to include in prevention programs as peers may be the first recipient of disclosures about SHA.

SHA: Sexual harassment and abuse; T1: first measurement period; T2: second measurement period (12 months after T1); ♀ = girls, ♂ = boys.

Abbreviations

CFI:	Comparative fit index
EDE-q:	Eating disorder examination questionnaire
HBSC-SCL:	Health behavior in school-aged children - symptom checklist
IViS	Interpersonal Violence against Children in Sport questionnaire
READ:	Resilience scale for adolescents
RMSEA:	Root mean square error of approximation
RSES:	Rosenberg self-esteem scale
SA:	Sexual abuse
SD:	Standard deviation
SES:	Socio-economic status
SH:	Sexual harassment
SHA:	Sexual harassment and abuse
SRMR:	Standardized root mean square residual
SHO:	Seksuell trakassering og overgrep (Norwegian) [Sexual harassment and abuse]
SV	Sexual violence
VTAQ	Violence towards athletes questionnaire
WHOQOL:	World health organization quality of life questionnaire

Nomenclature

Disclosure describes to whom the participants talked about their experiences with SHA, referring to both formal reporting systems and informal disclosures to family, friends, or others.

Elite athletes: students who attended private elite sport high schools or elite sport programs at public sport high schools in Norway.

Perpetrator refers to someone who has committed a harmful act. Used in this study to explain the source of victimization, regardless of severity and type of behavior committed.

Recreational athletes: students who attended general sport programs at public sport high schools in Norway.

Reference students: students who attended general study programs at non-sport high schools in Norway, without sport specialization.

Report is used in this dissertation when describing what the participants have reported in the questionnaire. The results are based on the participants' self-reported experiences.

Reporting system refers to a system in high school to report incidences of unwanted behaviors.

Sexual harassment and abuse (SHA) is used as an umbrella term incorporating acts ranging from unwanted verbal- and non-verbal sexual behaviors like sexual comments and glances to physical sexual abuse like rape.

Support mechanisms refers to systems providing guidance and support to students in need for help, e.g. school nurse, counsellor, psychotherapist etc.

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Introduction

Background

According to the International Olympic Committee, all athletes have the right to participate in "safe sport" explained as "an athletic environment that is respectful, equitable and free from all forms of non-accidental violence to athletes" [1 p. 1021]. Involvement in sport activities is common in Norway where 92% report that they have been a member of organized sports in their child- and/or adolescent years [2]. In addition, sport-specific educational programs are popular in Norway at both elite- and recreational sport levels. Sport participation is associated with many positive health benefits for children and adolescents. However, the sports environment, resembling the society in general, is not free from negative experiences like sexual harassment and abuse (SHA) [1]. The first studies that examined SHA in sports were published in the late 1980s [3]. In the following years, the main focus was SHA in the male coach – female athlete relationship [4-6]. Since then, there has been a significant increase in the number of publications worldwide. In addition, following the #MeToo-movement, increased attention has been directed to SHA in the society in general, through media coverage, and in research. In the field of research, different operationalizations and ways of measuring SHA have challenged the interpretation and comparison of results. Other methodological shortcomings have been a lack of comparison groups, no prospective study design, and most studies have examined lifetime prevalence of SHA. Well-targeted preventive measures have been requested, hence increased knowledge about prevalence, risk factors, consequences, and safeguarding are necessary [1, 7].

Experiences of SHA are associated with increased risk of revictimization [8, 9] and may have short- and long-term mental health consequences [10]. In addition, many victims do not disclose their experiences at all or delay disclosure for a long time [11, 12]. Therefore, it is paramount to prevent experiences of SHA from early age underlining the importance of conducting research among young people. Adolescence is a vulnerable life period where the risk of experiencing SHA is increased [13]. In addition, elite level athletes have been highlighted as a risk group for SHA victimization [1]. Little research has been done including adolescent athletes, hence this was the primary group of interest for this Ph.D.-study.

Adolescents

The word adolescence derives from the Latin word *adolescere* which means "to grow up". Adolescence is the life period between childhood and adulthood, starting with puberty and biological development, and gradually transitions into adulthood with increasing responsibility and changes in social roles [14]. The World Health Association describes adolescence as the ages between 10 to 19 [15]. In this period, adolescents experience various physical-, cognitive-, emotional-, and social changes. Some of these changes continue to develop during the next 10-20 years. This includes important development of the brain like cognitive processing and mature emotion regulation which also affects behavior, decision making, social belonging, and mental wellbeing [14]. Adolescence is also a period where sports tent to get more serious, and the interest in pursuing a dual career with focus on both education and sports has increased [16]. There are many benefits of being a sport school student, but some students may also face academical-, physical-, psychosocial-, and psychological challenges [16].

Dual careers - Norwegian sport high schools

One of the main aims in Norwegian sports is to facilitate the combination of education and elite sport development for future elite athletes [17]. Adolescents in Norway who want to include sports in their education have several options according to their goals and wishes. Private elite sport high schools are tailored for athletes who want to pursue their dream of becoming top-level performing athletes. These schools are evaluated and approved as elite sport high schools by the Norwegian Olympic Sport Centre [17] which is a part of the Norwegian Olympic and Paralympic Committee and Confederation of Sports, and the responsible organ for development and follow-up of elite athletes in Norway. The requirements that needs to be fulfilled are; 1) be open to qualified students from the entire country, 2) have annual plans for the sport activity in school, 3) the teachers, coaches, and staff must have insight to and understanding of the total workload of sports and school for adolescents, 4) the coaches must have high competence in developing sport talents and be ensured continuous development of their coaching practice, 5) the coaches must, in collaboration with the schools, create a stimulating environment where the students experience that their development and mastery is in focus, 6) ensure that the students are closely followed up by the coach(es) in school and ensure good cooperation with the students' sport clubs outside school, 7) have good training facilities, short distances, and good transportation opportunities, 8) practice the

values of top level sports, 9) facilitate a holistic development of young talented athletes, and 10) provide career guidance to the students [17].

Some public high schools in Norway also have sport programs tailored for elite sport development in specific sports. These programs are considered elite sport programs if they are accepted by the Norwegian Olympic Sport Centre based on the same criteria as described above [17]. Many public high schools also offer sport programs created for recreational athletes and adolescents who want to learn more about physical activity and health in theory and practise, but not necessarily aiming for top sport performance [18].

General study programs in public high schools in Norway do not offer specialized sport practice during school hours except the mandatory physical education classes, but students attending these programs may be involved in sports and competition during free time.

Terminology

The terminology concerning non-accidental violence in sports is inconsistent. Various terms like harassment, abuse, maltreatment, harm, and non-accidental violence are used interchangeably. The World Health Organization (WHO) defines violence as "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation." [19, p. 5]. Violence may broadly be categorized into three groups [19];

1) Self-directed violence is directed towards the person himself/herself, and includes acts like harming yourself, suicidal thoughts, and suicide.
2) Interpersonal violence includes violence directed to family members or intimate partners, often happening at home, or violence happening outside the home towards unrelated community citizens or institutions.
3) Collective violence is committed by groups of people with social, economic, or political motives like hate crimes, terrorist actions, and war.

Interpersonal, non-accidental violence can further be divided into physical-, psychological-, and sexual maltreatment, in addition to neglect [1]. Physical violence includes situations with actual physical contact like hitting, kicking, or pushing. Physical violence may also include implied harm

with possible physical consequences like forced physical training despite injuries or illness, unsuitable training loads, or food restrictions, although these situations are sometimes included in the category of psychological violence. Psychological violence is considered to be the core of the other forms of violence and is described as non-contact situations where a persons' inner life is challenged, consisting of emotions, cognitions, values, and beliefs, and possibly affecting the person's health, development, and safety. Examples include ignoring or excluding a person, humiliation, threats, and verbal abuse. Neglect occurs when someone (an authority person) hinder an athlete's basic needs like proper medical care, food, education, and social interaction [1, 20].

Sexual harassment and abuse

There is no universal definition of SHA. However, there is a fundamental agreement that the situation is based upon abuse of power and subjectively perceived as unwanted and uncomfortable for the victim [4-6]. Peoples' perception of a situation will vary depending on cultural background, personality, social life, former life experiences etc. [4, 6], making SHA as a subjective experience challenging to define and measure.

In a position paper published by the International Olympic Committee's expert writing panel, sexual harassment (SH) was described as "any unwanted and unwelcome conduct of a sexual nature, whether verbal, non-verbal or physical" [1, p. 1021], and sexual abuse (SA) as "any conduct of a sexual nature, whether non-contact, contact or penetrative, where consent is coerced/manipulated or is not or cannot be given." [1, p. 1021]. SHA may be of verbal, non-verbal, or physical character. Verbal behaviors can be expressed orally or in writing, and include unwanted sexual comments, jokes, invitations etc. Examples of non-verbal behaviors include being exposed to uncomfortable sexual glances or gestures, distribution of pictures or videos etc. Physical sexual behaviors may be unwanted hugging, kissing, physical touching, non-consented sexual acts etc. [21]. Some situations are difficult to categorize and may be placed in a gray zone between SH and SA, while other situations are definite SA and may be sentenced according to the Norwegian Penal Code, e.g., distributing sexual pictures without consent and rape (The Penal Code, chapter 26).

Several frameworks have been introduced, suggesting other ways of categorizing the SHA-continuum. Brackenridge [4] introduced the sexual exploitation continuum, which has been one of the main conceptual frameworks used in SHA-research in sports. This continuum consists of stages from sexual discrimination, to SH constituting unwanted or non-consensual sexual attention, to SA

described as manipulative or coerced physical contact or acts of a sexual nature [4]. Fitzgerald [22] introduced a model where SH consists of three dimensions, namely gender harassment, unwanted sexual attention, and sexual coercion. Gender harassment includes insulting, hostile, or degrading verbal- and non-verbal behaviors based on gender. Unwanted sexual attention refers to offensive, unwanted, or unreciprocated behaviors of verbal- and non-verbal nature. Sexual coercion includes pressuring someone into sexual behaviors [22].

Although SHA may be categorized in different ways, is it often a result of a strategically grooming process where the perpetrator slowly approaches a victim to gain his/her trust before engaging in abusive behaviors, often with the use of threats or temptations [23]. The grooming process can be divided into four stages, involving the phases of targeting the victim, building trust, isolating the victim physically or psychologically from other social environments, and finally the abusive act is conducted and the perpetrator attempts to ensure secrecy from the victim [23].

Theoretical framework – the ecological model

SHA in general may be understood from different theoretical perspectives like the natural/biological theory, the organizational theory, the sociocultural theory, the feminist theory, the sex role spillover theory, and the Finkelhor's four-factor theory which was later adapted to the sport setting as the "temporal model of sexual abuse with children and young persons in sport" [24-26]. Furthermore, the ecological model has been used as a multifactorial approach to understand violence as a relationship between various levels in the environment and its influence on a person's behaviour [19]. The ecological model was not used as foundation when planning the Ph.D.-study but was later chosen as a suitable theoretical framework for this dissertation in accordance with the study aims. The model incorporates four levels, i.e. individual, relationship, community, and societal. The individual level concerns personal factors that may contribute to or increase the risk of being involved in violence, either as a perpetrator or a victim. Examples are biological variables such as sex and age, history of harassment or abuse victimization, low education, and personality factors such as impulsivity. The second level, relationship, considers how close relationships may impact the likelihood of violence to occur, e.g., living with abusive family members, or pressure from peers, coaches, or significant others. The third level, community, discovers characteristics of the environments where the relationships develop that may contribute to violent behaviour, e.g., schools, sports arenas, and neighbourhoods. The societal level incorporates the big picture of the

societal climate's significance for violent behaviours to occur. This level involves cultural- and societal norms that may impact SHA, like gender differences, male dominance over women, or acceptance of violent behaviour in the society. The factors connected to these four ecological levels, and the interaction between them, put people at risk for experiencing violence, but may also serve as a framework to facilitate prevention if risk factors are appropriately addressed at multiple levels [19].

Risk factors for sexual harassment and abuse victimization

SHA is rarely reasoned by one single factor, but is a result of multiple factors interacting with each other including the victim, the perpetrator, cultural background, and social setting [4]. Although SHA may happen anywhere and to anyone, some factors are scientifically shown to increase the risk of experiencing SHA.

The individual risk factors with most evidence to increase the risk of SHA are female gender, ethnical minority background, non-heterosexual orientation, having a disability, and previous experiences of SHA [1, 7, 8, 27-30]. Adolescents may be at increased risk of SHA victimization because of their still existing need for care and protection in a vulnerable phase of their life [1]. Adolescents with early pubertal development are considered to be more at risk of experiencing SHA than adolescents with later bodily development, likely because of the development of sexual characteristics that may attract attention and interest, increased cross-gender interaction [31, 32], and a possibly unexperienced way of expressing sexual and relational interest [33]. The prevalence of SHA is presumed to increase during the years of adolescence [31], but the adolescents' perception of severity of SHA is described to decrease as the adolescents get older [34].

Hierarchical relationships with imbalance of power between individuals may also increase the risk of SHA [1]. Examples are relationships between a teacher and a student, a parent and a child, or between peers. In sport, such authoritarian relationships are particularly evident between athletes and authority figures like doctors, physiotherapists, and coaches [35]. Athletes may feel dependent on the coach's knowledge, experience, and expertise to reach top-level performance, leaving the coach in a powerful position, especially if parental control or supervision from others is limited [1, 36]. Situations where an athlete is left alone with the coach or other authority persons, like transport situations, one-to-one training sessions, doctor- or physiotherapy appointments, are considered especially vulnerable [35]. Elite athletes, performing at high levels (national/international), are

considered a particularly vulnerable group for SHA victimization in sports because of the amount of time spent in the environment and commitment put into the sport, including training, competitions, and travels [1, 28]. The athletes' dedication to the sport, obedience to coaches, willingness to make sacrifices, and pushing physical and mental limits are important factors for top sport performance but may also contribute to increased acceptance of inappropriate behaviors [35, 36]. Furthermore, early sport specialization [30], the masculine hierarchical sport system [1], and normalization of unacceptable behaviors within the sport context may increase the risk of SHA if athletes are socialized into an environment where certain behaviors may be tolerated as something you "just have to deal with" [35]. In sport organizations with lack of reporting procedures and policies, there may be increased risk of SHA because formal regulations, clear expectations of appropriate behavior, and possibilities for disclosure are missing [1, 35, 36]. A "culture of silence" in sports may also hinder disclosure and facilitate further abuse [7, 35].

Psychological consequences of sexual harassment and abuse victimization

Experiencing SHA may have short- and long-term physical, psychological, social, and performance-related consequences [10]. SHA victimization is associated with various symptoms of psychological health problems, but also clinical diagnoses like anxiety, depression, posttraumatic stress disorders, and eating disorders have been reported in athletes [37, 38]. Other psychological consequences includes low self-esteem, feelings of shame and guilt, social isolation and loneliness, difficulties regulating emotions, poor body image, symptoms of anxiety and depression, anger and irritability, low well-being and quality of life, sleep disturbance, symptoms of post-traumatic stress disorder, and suicidality [4, 39-42]. In addition, athletes may suffer from reduced joy of doing sports, impaired performance, increased willingness to cheat or use doping products, and premature termination of their sport career [1].

Safeguarding

Every child and adolescent has the right to participate in a sport environment which is safe and free from SHA and other unacceptable situations [1]. Safeguarding is about promoting physical and mental wellbeing, and ensuring human rights with measurements and policies directed towards peoples' safety [43]. Safeguarding includes handling issues like different forms of harassment and abuse, bullying, and discrimination, but is also about taking initiatives for prevention. The International Safeguarding Children in Sport Founders Group developed eight safeguards that sport organizations should have in place when working with children and adolescents to create a safe sport environment [44]. These safeguards are 1) develop a safeguarding policy, 2) have procedures for responding to concerns, 3) provide advice and support, 4) understand, address, and minimize risk, 5) have guidelines for acceptable and unacceptable behavior, 6) safely recruit and train staff, and communicate safeguarding principles, 7) work with and share safeguarding with partners, and 8) monitor, evaluate, and learn [44].

Norwegian sports operate with a zero tolerance-policy for discrimination and harassment, meaning that such acts should always lead to a reaction [45]. The Norwegian Olympic and Paralympic Committee and Confederation of Sports have therefore developed guidelines and a reporting system to make the process of reporting, handling, and reacting to unwanted behaviors easier and safer. The guidelines are specifically related to bullying, racism and discrimination, violence and threats, and SHA [45]. The newly developed reporting system "MittVarsel" is a digital portal where people can report about unwanted and unacceptable behaviours. All sports federations and sport regions in Norway implemented "MittVarsel" in 2022, with an ongoing aim of implementing the reporting system in sport clubs in the following years, accompanied by courses and training to facilitate use of the portal [46].

According to the Norwegian Education Act (chapter 9A, section 3), Norwegian high schools also have zero tolerance against offensive behaviors like bullying, violence, discrimination, and harassment. The schools are required to work systematically to promote well-being and safety and create a good physical- and psychosocial learning environment for the students.

Prevalence of sexual harassment and abuse - review of the literature

Table 1 Summary of studies presenting prevalence rates of sexual harassment and abuse for adolescent athletes/adolescents involved in sports (≤19 years). The studies are presented in descending order according to year of publication.

Author, year, country	Study design	Participants (n, gender, age in years (SD))	Instrument	Prevalence	Response rate
Strandbu et al, 2023 [47] Norway	Cross-sectional online questionnaire	*n* = 2 283 ♀: 1003 (47%) Age: 13–19 Mean age: n/a Students involved in organized sports	3 items from the study "Young in Oslo 2021"	**12-month sexual violations in sports**: 11% ♀: 12% ♂: 8%	53.0%
Daignault et al., 2023 [48] Canada	Cross-sectional online questionnaire	*n* = 1057 ♀: 764 ♂: 292 Intersex: 1 Age: 14–17 Mean age: 15.3 (SD=1.1) Athletes involved in organized sports	VTAQ	**Lifetime SV by teammates in the sport context:** 22.7% **Lifetime SV by coaches in the sport context:** 12.1%	83.8%
Vertommen et al. 2022 [49] Belgium	Cross-sectional online questionnaire	*n* = 769 ♀: 256 ♂: 507 Intersex: 5 Age: 13-21 * Mean age: 15.9 (SD=1.3) Secondary school students currently or previously involved in organized sports	VTAQ	**Lifetime SV in sports:** 26.8% ♀: 32.0% ♂: 24.2%	96.0%
Marsollier et al., 2021 [50] Switzerland	Cross-sectional online questionnaire	*n* = 210 ♀: 117 ♂: 92 Age: 14-18 Mean age: 16.5 (SD=1.2) Athletes involved in organized sports	14 items, based on the IViS.	**Lifetime SV in sports**: 28% ♀: 35.8% ♂: 17.4%	63.8%

Bermon et al., 2021 [51] Sweden	Cross-sectional online questionnaire	*n* = 480 ♀: 229 ♂: 251 Age: < 20 ** Mean age: n/a Elite athletics athletes (international sample) participating in the U20 World Athletics Championship.	Study-specific items derived from previous studies.	**Lifetime SA inside athletics**: 10% ♀: 7% ♂: 12% **Lifetime SA outside athletics**: 16% ♀: 15% ♂: 18%	36.3%
Demers et al., 2021 [52] Canada	Cross-sectional online questionnaire	*n* = 1140 ♀: 818 ♂: 321 Age: 13-18 Mean age: 15.2 (SD=1.2) Athletes involved in organized sports.	VTAQ: 14 items.	**Lifetime SV from peers in sports**: 22.4% ♀: 22.9% ♂: 21.0% **Lifetime SV from a coach in sports:** 11.9% ♀: 13.2% ♂: 8.2%	n/a
Parent & Vaillancourt-Morel, 2020 [53] Canada	Cross-sectional online questionnaire	N= 1055 ♀: 763 ♂: 292 Age: 14-17 Mean age: 15.3 (SD=1.1) Athletes involved in organized sports.	VTAQ: 14 items.	**Lifetime SV in sports:** 28.2% ♀: 29.2% ♂: 25.3% **Lifetime SH in sports:** 27.1% ♀: 28.0% ♂: 24.7% **Lifetime SA without contact in sports:** 2.0% ♀: 1.9% ♂: 2.5% **Lifetime SA with contact in sports:** 2.1% ♀: 2.6% ♂: 0.7%	n/a
Ohlert et al. 2018 [54] Germany	Cross-sectional online questionnaire	Subgroup 16-17 years presented here. *n* = 419 ♀♂ *n* = n/a Age: 16-17 Elite athletes on national teams or recruiting squads	IViS: 19 items, derived and adapted from Vertommen et al, 2016.	**Lifetime total SV in organized sports:** 37.0% **Lifetime mild SV in organized sports:** 17.7% **Lifetime moderate SV in organized sports:** 8.6% **Lifetime severe SV in organized sports:** 10.5%	n/a for the subgroup sample Total sample: 20%

Parent et al., 2016 [55] Canada	Cross-sectional written questionnaire	*n* = 6 268 (total sample) *n* = 2 707 (athlete sample) ♀♂ *n* = n/a Age: 14-17 Mean age: 15.4 High school students and athletes involved in organized sports	SA: 2 items derived from previous studies. 12 months SH: 3 items derived from SEQ.	**Lifetime SA in sports:** **Total sample:** 10.2% (♀ 14.6% ♂ 3.9%) **Athletes:** 8.8% (♀ 13.8% ♂ 3.2%) **Lifetime SA in sports by a coach:** **Total sample:** 0.5% (♀ 0.4% ♂ 0.7%) **Athletes:** 0.8% (♀ 0.7% ♂ 0.9%) **12-month SH in sports from a coach:** **Total sample**: 0.4% (♀ 0.2% ♂ 0.6%) **Athletes**: 0.4% (♀ 0.2% ♂ 0.7%)	Nearly 100%
Fasting et al, 2003 [6] Norway	Cross-sectional written questionnaire	Subgroup 15-18 years presented here *n* = 178 elite athletes *n* = 118 controls ♀: 100% Age: 15-18 Elite national team or recruiting squad athletes, and non-athlete controls	11 items derived from previous studies.	**Lifetime SHA by men in sports (at work):** Athletes: 46% (Controls: 42%) **Lifetime SHA from male peers in sports (at work):** Athletes: 33% (Controls: 32%) **Lifetime SHA from male authority figures in sport (at work):** Athletes: 17% (Controls: 9%) **Lifetime SHA by men outside sports (outside work):** Athletes: 83% (Controls: 77%)	Athletes: 87% Controls: 73%
Sundgot-Borgen et al., 2003 [38] Norway	Cross-sectional written questionnaire	Subgroup 15-18 years presented here *n* = not reported for the 15-18-year subgroup ♀: 100% Elite national team or recruiting squad athletes, and non-athlete controls	11 items derived from previous studies.	**Lifetime SHA: ***** Athletes: 56% (Controls: 57%)	Athletes: 88% Controls: 71%

♀ female; ♂ male; IViS: Interpersonal Violence against Children in Sport questionnaire; SA: sexual abuse; SD: standard deviation; SEQ: sexual experience questionnaire; SH: sexual harassment; SHA: sexual harassment and abuse; SV: sexual violence; VTAQ: violence towards athletes questionnaire.

Adolescent athletes: recruited from a sport environment.

Adolescents involved in sports: recruited from non-sport environments like school.

* Included because the mean age was below 19 years. ** Included because the World Athletics defines U20 athletes as "18 or 19 years on 31 December in the year of the competition" [56, p.8]. *** Combined measure of experiences inside and outside sports.

Table 2 Summary of studies presenting prevalence rates of sexual harassment and abuse among adults retrospectively reporting experiences from childhood/adolescent sports (before the age of 19 years). The studies are presented in descending order according to year of publication.

Author, year, country	**Study design**	**Participants (n, gender, age in years (SD))**	**Instrument**	**Prevalence**	**Response rate**
Pankowiak et al., 2023 [29] Australia	Cross-sectional online questionnaire	*n* = 886 ♀: 561 ♂: 308 Gender diverse: 17 Mean age: 42 (SD=15) Adults who participated in community sport as a child (<18 yrs)	VTAQ: 14 items	**SV in total in sports**: 38.1% ♀: 40.3% ♂: 33.0% Gender diverse: 58.8% **SH**: 37.6% ♀: 39.6% ♂: 32.7% Gender diverse: 58.8% **SA no contact**: 4.1% ♀: 5.0% ♂: 2.4% Gender diverse: 6.3% **SA with contact**: 4.0% ♀: 4.4% ♂: 3.2% Gender-diverse: 6.7%	n/a
Schipper-van Veldhoven et al., 2022 [57] The Netherlands	Cross-sectional online questionnaire	*n* = 3959 ♀: 1950 ♂: 2009 Age: 18 to 50 Adults who participated in organized sport as a child (<18 yrs)	Modified version of the IViS: 21 items.	**Sexual transgressive behaviors in sports.** **Total:** 15.5% * ♀ 20.2% Mild: 10.3% Moderate: 1.3% Severe: 8.5% ♂**:** 11.0% Mild: 5.1% Moderate: 0.5% Severe: 5.4% **With impact:** 7.2% ** ♀**:** 10.5% ♂: 4.0%	Two population panels 1: 42% 2: 75%
Timon et al., 2022 [37] The USA	Cross-sectional online questionnaire	*n* = 473 ♀: 330 (69.8%) ♂: 142 Non-binary: 1 Age: 18-71 Mean age: 29 (SD=9.9) Former athletes who participated in organized sport at the elite level as a child (<16 yrs)	6 items derived from previous studies.	**Contact sexual assault in a sport context**: 3.8%	31%

Hartill et al., 2021 [58] The UK/ International	Cross-sectional online questionnaire	*n* = 10 302 ♀: 5152 ♂: 5077 Other: 35 Age: 18-30 Mean age: 24.4 Adults who participated in sport as a child (<18 yrs).	9 items on non-contact SV and 6 items on contact SV, inspired by previous studies.	**<u>Inside sports:</u>** **Total non-contact SV**: 35% ♀: 32% ♂: 38% **Total contact SV**: 20% ♀: 14% ♂: 26% **<u>Outside sports:</u>** **Total non-contact violence**: 52% ♀♂ n/a **Total contact SV:** 41% ♀♂ n/a	n/a
Vertommen et al., 2016 [28] Belgium	Cross-sectional online questionnaire	*n* = 4 043 ♀: 2212 ♂: 1831 Age: 18-50 Adults who participated in organized sport as a child (<18 yrs). Nationality: The Netherlands and Belgium (Flanders).	"IViS": 17 items, derived and adapted from Alexander et al., 2011.	**Total SV in sports**: 14.3% ♀ 17.2% ♂ 10.8% **Mild SV**: 1.6% ♀ 1.9% ♂ 1.1% **Moderate SV**: 7.3% ♀ 8.9% ♂ 5.3% **Severe SV**: 5.5% ♀ 6.5% ♂ 4.4%	Two samples: The Netherlands: 58% Flanders: 25%
Alexander et al., 2011 [59] The UK	Cross-sectional online questionnaire	*n* = 6 124 ♀: 4471 (73%) ♂: 1653 (27%) Age: 18-22 Adults who participated in organized sport as a child (<16 yrs).	Index of possible negative and harmful experiences in sports, derived from the authors' expert knowledge and previous studies.	**Total SH in sports**: 29% ♀: 34% ♂: 17% **Total sexual harm in sports**: 3% ♀: 2% ♂: 5%	< 1% ***

Nielsen, 2001 [60] Denmark	Cross-sectional written questionnaire	*n* = 140 ♀♂ *n* = n/a Age: n/a Adult physical education students who participated in sports as a child (<18 yrs)	10 items on various coach behaviors, derived and adapted from previous studies.	**Coaches behaviors in sports *** **(Perceived severity: V = most severe)** **I - instruction-related behaviors:** 90.7-94.3% ♀ 89.8-96.6% ♂ 91.2-92.6% **II - indirect instructional related behaviors:** 40.0% ♀ 37.3% ♂ 42.0% **III - sexist comments:** 48.2-62.9% ♀ 48.3-52.5% ♂ 48.1-70.4% **IV - non-instructional potentially threatening behavior:** 10.7-37.1% ♀ 11.9-33.9% ♂ 10.0-39.5% **V - verbal or physical advances:** 2.1-13.6% ♀ 3.4-25.4% ♂ 0.0-49.0%	55.3%

♀ female; ♂ male; IViS: Interpersonal Violence against Children in Sport questionnaire; SA: sexual abuse; SD: standard deviation; SH: sexual harassment; SV: sexual violence; VTAQ: violence towards athletes questionnaire.

* The total measure is based on the frequency of occurred situations, regardless of whether the situation had an impact on the individual or not.

** The "impact" measure included situations which the participants reported as having had an impact on them.

*** Although the response rate was very low and indicated exclusion, the study was included because it was distributed to about 250 000 students, resulting in a high sample size despite low response rate.

A literature search was conducted May 03, 2023 in the electronical databases PubMed, Web of Science, and SportDiscus, aiming to review the literature concerning prevalence of SHA among adolescent athletes (recruited from a sport environment)/adolescents involved in sports (recruited from non-sport environments like school). Detailed information about the combination of terms used for the database search, and inclusion and exclusion criteria are presented in appendix 1. Table 1 and 2 summarize studies published in year 2000 or later with a sample size above 100 participants and a response rate ≥20%, which reported prevalence of SHA among adolescent athletes/adolescents involved in sports (≤19 years) at the time the study was conducted (table 1) or adults who retrospectively reported experiences from participating in sports before the age of 19 (table 2). The age of 19 was selected to correspond with the definition of adolescents from the World Health Association [15]. In studies presenting results from several samples or age groups, only relevant age-groups were extracted for the purpose of this dissertation.

Study- and sample characteristics

In total, 18 cross-sectional studies fulfilled the inclusion criteria, eleven studies including adolescent samples and seven studies involving adults who retrospectively reported childhood experiences. Twelve studies originated from Europe (Belgium x 2, Switzerland, Sweden, Germany, Norway x 3, the Netherlands, the UK x 2, and Denmark), four from Canada, one from Australia, and one from the USA. Three of these studies included international samples. Vertommen et al. [28] included participants from the Netherlands and Belgium (Flanders), Bermon et al. [51] included an international sample of elite junior athletes competing at the U20 World Athletics, and Hartill et al. [58] included samples from six European countries; Austria, Belgium, Germany, Romania, Spain, and the UK. The samples were adolescents involved in organized sports at the time of conducting the study (recruited though social media, e-mail list of sport partners, flyers on sport competitions etc.) [48, 50, 52, 53], secondary- or high school students involved in organized sports (recruited via school) [47, 49, 55], or adolescent elite athletes on a national team or a recruiting squad (recruited during championships or though National Olympic Sport Federations or the similar) [6, 38, 51, 54]. The retrospective studies included adult samples recruited though social media or child protection organizations' membership database [29], national panels [28, 57, 58], National Olympic Sport Federations [37], or university databases [59, 60]. The sample size ranged from 140 [60] to 10 302 [58]. Among the studies presenting response rate, the response rate ranged from 20% [54] to nearly

100% [55]. All studies included more than one gender, except Fasting et al. [6] and Sundgot-Borgen et al. [38] which only included females.

Instruments

The studies used various instruments to measure SHA. Five studies used the Violence Towards Athletes Questionnaire (VTAQ) [29, 48, 49, 52, 53] which was the first validated instrument for measuring different types of violence, including sexual violence, against children and adolescents in sports [61, 62]. Four studies used the Interpersonal Violence against Children in Sport questionnaire (IViS) or modified versions of the IViS [28, 50, 54, 57], and nine studies used study-specific items derived from former studies and expert knowledge [6, 37, 38, 47, 51, 55, 58-60]. Most studies used an online version of the questionnaire, except four studies which used a paper-and-pencil version [6, 38, 55, 60].

Prevalence

The definitions and terms used to describe the outcome measure varied in the included studies. Most studies used the term sexual violence, but some studies also utilized the terms sexual abuse [29, 51, 55], sexual assault [37], sexual harassment [29, 55, 59], sexual harassment and abuse [6, 38], sexual transgressive behaviors [57], sexual harm [59], sexual violations [47], or described various behaviors specifically [60]. All studies presented a low threshold measure (no experience vs. one or more experiences), but four studies also presented categories taking frequency and/or severity into account [28, 54, 57, 60]. Two studies reported SHA experienced during the previous 12 months [47, 55] while the rest of the studies presented lifetime prevalence, a measure of experiences which had occurred any time during their involvement in sports.

The use of different definitions, terms, samples, and ways of reporting the results leads to a great variation in prevalence rates and makes comparison between studies difficult. However, the included studies which examined adolescent athletes/adolescents involved in sports reported a prevalence rate of sexual violence or SHA between 12.1% [48] and 56% [38], SA between 0.8% [55] and 10% [51], and SH at 27.1% [53]. Some studies examined specific perpetrators only, like SHA from a coach [6, 48, 52, 55, 60]) or peer athletes [6, 48, 52]. Sundgot-Borgen et al. [38] presented a total prevalence rate of SHA inside and outside sports, contributing to the highest reported prevalence rate.

The included retrospective studies presented a prevalence rate of sexual violence or SHA between 14.3% [28] and 38.1% [29], SA or sexual harm between 3.0% [59] and 4.1% [29], and SH between 29% [59] and 37.6% [29].

Three studies also reported prevalence rates outside the sport setting, which showed a higher prevalence of SHA outside sports compared with inside sports [6, 51, 58]. The same applied for Sundgot-Borgen et al.'s study [38], although the results comparing contexts were only presented for the total sample, not stratified by age groups.

Gender differences

The results varied in terms of gender differences, where most studies presented a significantly higher prevalence rate among girls compared with boys [28, 29, 49, 50, 57] while some studies found no significant gender difference [51, 53]. Depending on type of harassment/abuse measured or perpetrators involved, some studies also reported mixed results. Demers et al. [52] found a significantly higher rate of sexual violence for girls when perpetrated by a coach, but no gender difference when perpetrated by peers. Parent et al. [55] reported significantly higher rates for SA in total for girls, but no gender difference in SA or SH perpetrated by a coach. Strandbu et al. [47] reported a higher rate of sexual comments for girls, but no gender difference in sexual touching or SA. Alexander et al. [59] found higher rate of SH for girls, but a higher rate of sexual harm for boys. Hartill et al. [58] also reported a significantly higher prevalence of sexual violence among boys than girls in sports, but the opposite outside sports [58].

Research gaps

The literature review above confirms that this field of research has methodological challenges like different definitions and operationalizations of SHA and use of different measurement instruments. Five of the included studies examined elite athlete samples, but only three studies used a control group of non-athletes [6, 38, 55].

In Norway, there have been some research on SHA among high-school students and university students in general [63, 64] and among elite adult athletes [6, 38]. However, the studies in the sport setting dates more than two decades back in time, and research among adolescent athletes have been missing apart from a recently published study including secondary- and high school students involved in organized sports in Norway [47].

The International Olympic Committee stated in 2016 in their consensus statement on harassment and abuse in sport that "prevalence of all forms of non-accidental violence in countries for which there are currently no data" is needed [1 p. 1025]. Six years later, in 2022, Schmidt et al. highlight the still existing need for more knowledge about the prevalence of interpersonal violence in sports (particularly among boys), risk factors, and psychological consequences [7]. To our knowledge, there are no prospective prevalence studies investigating SHA among athletes. This is necessary to examine SHA over time and investigate possible risk factors and consequences of SHA victimization [65, 66].

This study contributes to fill some research gaps in terms of examining the prevalence, possible risk factors, and elements of safeguarding in and outside sports. The study also makes new contributions in terms of methodology with a prospective research design and use of three comparable groups of elite athletes, recreational athletes, and general reference students. Consequently, this study can contribute to a base of knowledge which may help to prioritize future research and serve as a foundation to create interventions and preventive measures.

Aims of the dissertation

The general research aim of the PhD-study was to examine the prevalence and magnitude of SHA among adolescent elite athletes, recreational athletes, and reference students in different social settings in Norway.
The dissertation is based on three papers which described the prevalence of SHA in different social contexts over time (paper I), examined SHA revictimization and individual risk factors for SHA victimization (paper II), and finally looked into the organizational school context examining disclosure and awareness of report- and support resources in school (paper III).

The specific aims for the three papers were as follows:

Paper I: To examine the 12-month prevalence of reported SHA among elite athletes, recreational athletes, and reference students in three different social settings, to identify the perpetrators of SHA, and the 12-month prospective change in SHA victimization while attending high school.

Paper II: To prospectively examine 1) the prevalence of male and female elite athletes, recreational athletes, and reference students who experienced sexual revictimization, and 2) which combinations of demographic- and mental health factors were associated with subsequent SHA victimization.

Paper III: To examine high school students' disclosure of SHA, and awareness of reporting systems and support mechanisms in school among students, leaders, and coaches.

1. the awareness and use of reporting systems and support mechanisms for SHA in the school system among adolescent elite athletes, recreational athletes, and reference students at baseline (T1) and follow-up (T2).
2. awareness of reporting systems and support mechanisms for SHA in the school system among leaders and coaches at T1.
3. the proportion of adolescents who disclose their experiences with SHA at T1 and T2, and who they disclose to in the school setting.
4. if the adolescents perceived that measures for SHA were implemented or informed in the participating schools at T2.

Methods

Study design

The overall study included quantitative and qualitative research methods. The quantitative part was a prospective cohort study with two measurement points, one year apart, with use of questionnaires for data collection. The qualitative part of the study was conducted between the two quantitative waves. We invited a sample of adolescents who reported experiences of SHA in the questionnaire at T1 to participate in individual interviews. In addition, a sample of leaders and coaches at the schools were invited to participate in separate individual interviews. Only the quantitative part will be addressed in this dissertation.

Study flow

The first data collection (T1) was conducted between October 2019 and May 2020 (figure 1). Because of practical challenges for some schools to participate in the study in the autumn semester, we expanded the data collection into the spring semester 2020. This resulted in further postponement due to the onset of the COVID-19 pandemic and school lockdown in March 2020 in Norway. Consequently, the T1-data collection was finished in May 2020. The follow-up data collection, T2, was conducted 12 months after the first data collection in each school.

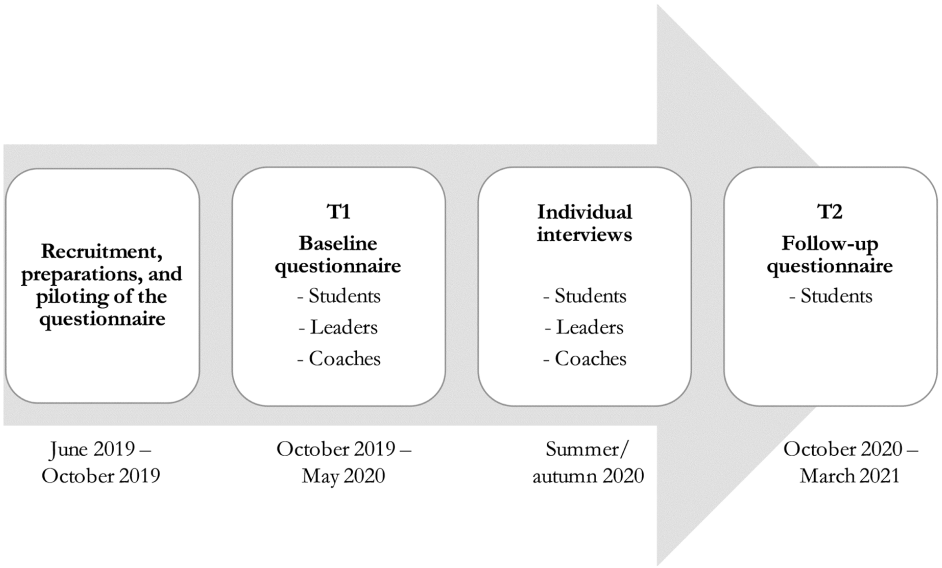

Figure 1 Study flow

Recruitment and procedure

All private and public elite sport high schools in Norway, verified by The Norwegian Olympic Sport Centre per September 2018, were eligible for participation (n = 32). All high schools with general study programs in the county Buskerud (n = 14) and a sample of high schools with general study programs from the counties Oslo and Østfold (n = 13) were invited as a reference group. In total, 26 sport high schools and six non-sport high schools accepted the invitation to participate (figure 2).

The school principals were contacted by e-mail in the beginning of June 2019 with an invitation for their school to participate and an information letter about the study. Follow up telephone calls were made to non-responding schools. School visits were scheduled with the accepting schools during autumn 2019 where a presentation about the study and the participants' rights were given before the students received an e-mail with a written information letter and a link to an online questionnaire. The students who chose to participate opened the link and signed electronical informed consent. The study-specific questions would not open unless consent was signed. The students responded to

the questionnaire during a school lesson with members of the project group present in the classroom. All students were encouraged to stay in the classroom until the session was finished, regardless of their choice to participate or not. Twelve months later, all students were invited to T2, regardless of their status of participation at T1. The procedure was similar at T2, though with digital presentations due to the COVID-19 pandemic, as will be described below. One hundred gift cards (values of NOK 150,-, 250,-, and 500,-) were randomly distributed to the participants who completed the questionnaire at T1 and T2, respectively.

The coaches and leaders received an e-mail with a written information letter and a link to the coach/leader-version of the questionnaire at the same time as the students at their respective schools. The coaches and leaders could answer the questionnaire when they had opportunity following our school visit.

COVID-19

The COVID-19 pandemic and the following school lockdown in Norway resulted in a change in the data collection procedure. Five schools attended T1 digitally, meaning that we presented the study through a digital platform (Teams) and were available for questions on Teams, e-mail, and phone throughout the session. All schools, except one, participated digitally at T2. The procedure for answering the questionnaire was the same regardless of physical or digital information meetings. During the first part of the lockdown, all schools had home schooling and consequently the students listened to the presentation and answered the questionnaire by themselves in their own home. Later in the lockdown, some schools operated with smaller groups physically present at school, but in different rooms, hence we organized the presentation digitally in each room with a teacher present.

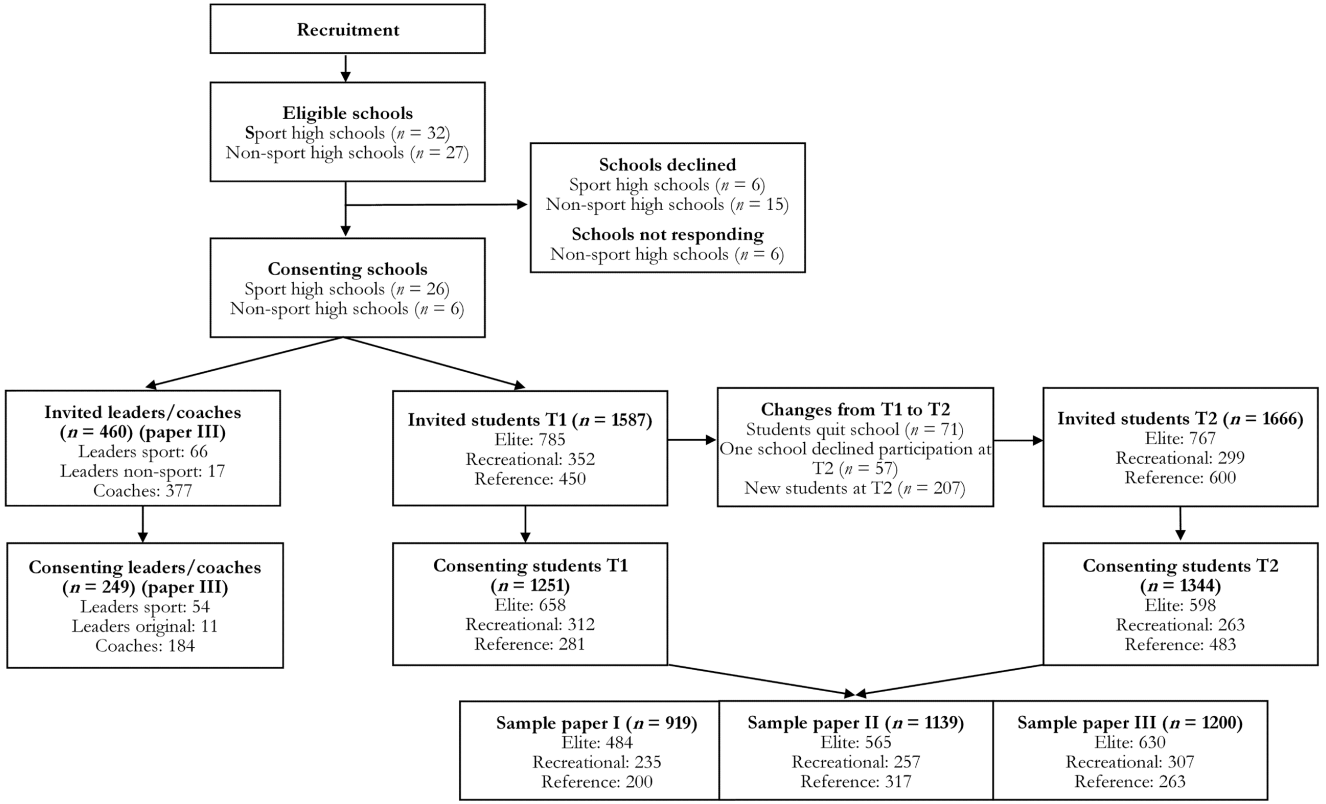

Figure 2 Recruitment of schools, and inclusion and exclusion of participants in the study.
T1: first measurement point; T2: second measurement point

Participants

Adolescent athletes and students

The adolescents were eligible for participation at T1 if they attended 12nd grade in one of the consenting high schools, were 16 years of age or older, and understood written Norwegian language. Depending on what type of school the students attended, they were categorized into three groups (elite athletes, recreational athletes, and reference students). The students who attended private elite sport high schools or elite sport programs at public sport high schools were defined as elite athletes. These students are evaluated before acceptance to the schools based on their former academic- and sport-related results, knowledge about what it requires to live as a high-level performing athlete, motivation for combining sports and education, long-term goals, and ability to prioritize and conduct good quality training [17]. Students attending general sport programs at public sport high schools were defined as recreational athletes. The elite- and recreational athletes could represent any type of sport. Students representing general study programs at non-sport high schools, without sport specialization, were designated as reference students.

The higher number of invited reference students at T2 (n = 600) compared with T1 (n = 450) was related to the onset of the COVID-19 pandemic where changes in the school system and restricted possibilities for physical meetings made it challenging to reach all the students at the day of arranging the survey at one of the non-sport high schools. These reference students were invited to participate at T2, in addition to new students enrolled at the participating schools between the two measurement points (figure 2). There were no exclusion criteria for participation. The total response rate was 78.8% at T1 and 80.7% at T2. Stratified by school groups, the response rate was 83.8% among the elite athletes, 88.6% among the recreational athletes, and 62.4% among the reference students at T1, and 78.0%, 88.0%, and 80.5%, respectively, at T2. The response rate was significantly higher among those who received a physical school visit compared with those who attended T1 digitally due to the COVID-19 lockdown (86.3% vs 56.3%, p≤.001, Phi: -.318, unpublished).

Those who reported non-binary gender identification were described separately in paper I, treated as missing for the gender variable in paper II, or excluded from the analyses related to gender differences in paper III because of a low number of participants (n = 4). In addition, some participants were excluded from the statistical analyses because they quit school during the follow-up period, their school withdrew from the study, they dropped out of the questionnaire, or did not

respond to relevant items in the questionnaire. Consequently, the number of participants for statistical analyses were 919, 1139, and 1200 in paper I, II, and III, respectively (Figure 2).

Leaders and coaches

All principals and administrative leaders/head of sports at the participating high schools, and coaches with 20% or more employment status at the sport high schools were eligible for participation. The participants had to understand Norwegian written language, otherwise no exclusion criteria were set. The response rate was 54.1% in total for the sample of leaders and coaches.

Questionnaire

Two separate questionnaires were created in SurveyXact (Rambøll, Aarhus, Denmark), one adolescent version (appendix VII) and one leader/coach version (appendix VIII). The adolescent version took 30-40 minutes to complete and the leader/coach version took five-ten minutes to complete. Both questionnaires were in Norwegian language and were feasible on computer screens, tablets, and smart phones. The following paragraphs describe the content in the adolescent version of the questionnaire.

Demographic variables (paper I, II, and III)

The first part of the questionnaire collected demographic information; gender, age, sexual orientation, school affiliation (elite-, recreational-, non-sport high school), living status, and whether they had immigrated to Norway.

Physical activity, training, and sport performance (paper I, II, and III)

The adolescents were asked to think four weeks back in time and state how many hours and minutes of physical activity they did per week (e.g., five hours and 30 minutes), number of training sessions per week, and hours and minutes of training per week. Physical activity was described in the questionnaire as all bodily movement, e.g. walking, biking, skating, dancing, outdoor activities, and training/sports. Training was described as more planned and regular than physical activity, and something you do to maintain or improve physical fitness, e.g. various sports, strength training,

endurance training etc. In addition, the adolescents were asked to state type of sport(s) and competition level if they competed in their sport.

Sexual harassment and abuse (paper I, II, and III)

No standardized and validated instrument for measuring SHA in sports was available at the time of planning this study. Therefore, the items used to measure SHA in this study were derived from previous research among adult athletes in Norway [6] and inspired by more recent studies in Norway [63, 64, 67] to adjust to an adolescent sample of athletes and non-athletes.

The definition of SH in the Norwegian Equality and Anti-Discrimination Act (chapter 2, section 13, third paragraph) was given in the introductory text for the SHA-section in the questionnaire: "Sexual harassment means any form of unwanted sexual attention that has the purpose or effect of being offensive, frightening, hostile, degrading, humiliating or troublesome". It was clearly stated in the text that the participant should think about experiences that personally felt unwanted, and which they did not want to take part in at that specific time. SHA was measured in three separate social contexts, as explained in the introductory text in the questionnaire;

In school included school hours, and/or arrangements related to school such as training camps, travels, and graduations.

Sports outside school included for instance club training, free training, and fitness center.

Free time included work and time spent with friends and family.

Next, thirteen questions covering possible unwanted sexual experiences were listed. Three items measured verbal SH, six items measured non-verbal SH, and four items measured physical SHA (table 3). The questions were answered dichotomously (no/yes). Those who answered yes to one or more items were categorized as having experienced SHA. The items representing verbal, non-verbal, and physical SHA, respectively, were summed to differentiate types of SHA. Related to each of the thirteen questions, a positive answer led to follow-up questions about when they had experienced that situation (last 12 months or earlier in life), how often (one time, a few times, often/regularly), where (in school, sports outside school, free time), and who the perpetrator was (male or female friend/classmate/teammate, teacher/trainer/instructor, entourage/health personnel (nurse, physio, doctor, psychologist, nutritionist etc.); family members; employer; others). For presentation of the

results, the perpetrator categories were categorized as peers, trainers/teachers/health personnel, and "others". A single item also asked if the participant believed he/she had sexually harassed others.

Table 3 Items in the questionnaire measuring sexual harassment and abuse, categorized as verbal sexual harassment, non-verbal sexual harassment, and physical sexual harassment and abuse. Each item was formulated "Have you experienced [item x]"

	Items	Verbal	Non-verbal	Physical
1	Unwanted sexual comments (remarks/messages/jokes/teasing) about your body, appearance, private life, sexual orientation? E.g., "whore", "gay", "cock", "bitch" etc.	X		
2	Unwanted sexual approaches and/or proposals/invitations (oral, written, or digital) to do sexual favors with an offer/promise of rewards or privileges? E.g., more playing time, better grades etc.	X		
3	Rumors spread about your performance (school, sports, culture etc.) and/or you as a person because of your gender or sexual orientation? E.g., "football is not for girls".	X		
4	Unwanted sexual staring/glances or body movements?		X	
5	Someone showing you sexual pictures or videos (including online/social media) without you wanting them to?		X	
6	Indecent exposure of private body parts/genitals?		X	
7	To be pursued by a person and/or receiving unwanted gifts/letters etc.?		X	
8	Humiliating treatment or exposure to an unwanted situation of sexual character which influenced your self-respect and/or had a negative impact on your performance (school, sport, culture etc.)?		X	
9	Unwanted taking or distribution of sexual photos/videos of you on mobile/internet/social media?		X	
10	Unwanted physical contact like touching (pinching, being picked on), hugging, or kissing against your will?			X
11	To be coerced into unwanted sexual acts (e.g., touching of breasts or genitals, sexual intercourse with objects or body parts, masturbation, licking of genitals) without your consent.			X
12	Rape (i.e., sexual acts with use of violence of threats, physical or online, or sexual acts with people who are unconscious or unable to give consent (e.g., in sleep, drunk, fear). Rape is also using violence or threats to make people have sexual acts with others or himself/herself, and any form of sexual acts with children under 14 years.			X
13	Attempt at rape (i.e., attempts at rape that is interrupted/fails because the victim manages to oppose the situation)			X

Mental health measures (paper II)

World Health Organization Quality of Life questionnaire (WHOQOL-BREF)

Based on the two previous weeks, the questions "How would you rate your quality of life?" and "How satisfied are you with your health?" from the WHOQOL-BREF were scored on a Likert-scale from 1=very poor/unsatisfied to 5=very good/satisfied. Higher scores indicate higher overall quality of life and satisfaction with health, respectively [68].

Rosenberg Self-Esteem Scale (RSES)

Feelings of self-acceptance and self-worth was measured via RSES, a ten-item scale scored on a Likert-scale from 1=strongly agree to 4=strongly disagree. Five items are positively formulated, e.g., "I feel that I have a number of good qualities", and five items are negatively formulated, e.g. "I certainly feel useless at times" [69]. The positively loaded items were reversed before creating a global score by summing all item scores. The global score ranged from 10-40 where a higher score indicates higher self-esteem. Coefficient alpha .89 in the current study.

Eating Disorder Examination Questionnaire (EDE-q)

Symptoms of eating disorders was measured using the EDE-q 6.0 [70]. Twenty-two items address various eating disorder characteristics and were scored on a 7-point Likert scale where 0 indicates "no days"/"not at all" and 6 indicates "every day"/"markedly". Six free-response items measure the frequency of different disordered eating behaviours but are not presented in this study. The mean score of the four subscales; restraint, eating concern, weight concern, and shape concern were summed and divided by four to create a global score. Higher score indicates more eating disorder symptoms. Coefficient alpha was .95) in the current study.

Health Behavior in School-aged Children - symptom checklist (HBSC-SCL)

Subjective health complaints were assessed using the eight-item scale HBSC-SCL [71]. The participants indicated how often during the last six months they had experienced four somatic symptoms and four psychological symptoms. Two sport-specific items were added (feeling of exhaustion, and physical injuries), but only the original items were used in the analyses. The response options were; 1=about every day, 2=more than once a week, 3=about every week, 4=about every month, to 5=rarely or never. The scale was reversed before summing the items belonging to the

somatic subscale (headache, stomach-ache, backache, and dizziness) and psychological subscale (feeling low, irritability or bad temper, nervousness, and difficulties sleeping), respectively. Higher scores indicate greater complaints. Coefficient alpha in the present study was .75 for the somatic subscale and .82 for the psychological subscale.

Resilience scale for adolescence (READ)

Resilience was measured with READ [72]. The participants scored 28 positively formulated items using a 5-point Likert scale ranging from 1 (totally agree) to 5 (totally disagree). The scale was reversed before the analyses so that a higher score represented higher resilience. The scale is divided into five subscales; 1) personal competence, 2) social competence, 3) structured style, 4) family cohesion, and 5) social resources. The mean score of each subscale was summed and divided by the number of subscales (five) to obtain a global score. Coefficient alpha was .95 in the present study.

Disclosure of sexual harassment and abuse (paper III)

The participants who reported one or more experiences of SHA received a single item measuring disclosure, i.e. "Did you disclose to someone about your experiences?". The response options were *yes* and *no*. A positive response was followed by the question; "who did you disclose to?". Multiple answers were possible with the response options; friends/peers, coach/teacher, employer, health personnel, parents/family, others, and reporting system.

Reporting systems and support mechanisms in school (paper III)

Two items measured awareness of the schools' reporting system and support mechanisms; "Does your school have procedures/systems for reporting sexual harassment?" and "Does your school have emergency procedures and/or support mechanisms for people who experience sexual harassment or report/disclose experiences with sexual harassment?". The response options were *yes*, *no*, and *I do not know*. The participants who answered *yes* to the latter question received the following follow-up question; "Would you use this support system?". If no, an optional comment box was provided where the students could describe why they would not use the system if they needed help. For result presentation, we categorized similar comments into categories and quantified by counting the number of comments in each category.

Preventive- or informative measures for sexual harassment and abuse in school (paper III)

The questionnaire at T2 included an item asking if the student perceived that their school had implemented measures related to SHA/unwanted sexual experiences the last year. An optional comment box was provided to the participants who answered yes, asking them to describe these measures. For presentation of the results, the adolescents' descriptions were categorized into similar themes and quantified by counting the number of comments associated with each theme.

Leader and coach version of the questionnaire (paper III)

The leader/coach version of the questionnaire (appendix VIII) included questions about demographics (age, gender, profession, migration status), sports (sport related education, experience with sports and coaching), awareness of incidences with SHA at their school, and awareness of reporting systems and support mechanisms.

Piloting of the questionnaire

The student version of the questionnaire was piloted by three newly graduated elite sport high school students, and three reference students attending high schools not eligible for the main study. The adolescents responded to the questionnaire and made notes if they had any questions or concerns. Few minor changes and exemplifications were added to the questionnaire to increase understanding, and additional response options were added to demographical questions as a result of the adolescents' feedback. Following our experiences and questions arising during the T1 data collection, small specifications and simplifications were added to the questionnaire at T2. Because we measured only 12-month experiences of SHA at T2, the questions regarding lifetime exposure of SHA were removed in the T2 version. We also added a question in the T2 version about whether preventive- or informative measures of SHA were implemented in the schools the last 12 months, i.e., following our school visit at T1, and six items measuring the students' own experiences with answering a questionnaire about sensitive topics (appendix VII).

The leader and coach-version of the questionnaire was piloted by one administrative leader at a non-sport high school, and two sport teachers at recreational sport high schools not eligible for participation in the main study. No changes were done to the leader/coach-questionnaire following the pilot.

Statistics

We did not perform power calculations for sample size estimation because of the explorative purpose of the study and the aim to invite the total population of 12th grade elite athlete students in Norway. We used M*plus* version 8.4 to conduct invariance analyses of the SHA measure, and SPSS version 24 and 28 (IBM, Armonk, New York, USA) for all other analyses. Descriptive data were presented as number and percentages or mean with standard deviation (SD). A p-value ≤.05 were considered statistically significant in all three papers. Coefficient alpha was presented as measure of reliability of the mental health instruments, based on the internal consistency between scale items. Because of a large sample size and little missing data, <5% on relevant variables, complete-case analyses were used, i.e. participants with complete dataset on relevant variables (paper I and III) [73]. Missing data were treated by surrogated splits in paper II [74].

Paper I: The items covering 12-month experiences of SHA at T1 and T2 was used in paper I. Independent-sample t-test were used to analyze differences in continuous data. Pearson Chi-Square test for independence with Bonferroni correction and Fisher's exact test were used to analyze differences in categorical data. Changes from T1 to T2 were analyzed with McNemar test for paired nominal data. The results were presented as mean and standard deviation (SD) or number and percentages. Because the participants could mark several response options within the different social settings, types of SHA, and perpetrators of SHA, we did logistic regression analyses adjusted for clustering to analyze these variables. Results from the logistic regression analyses were presented as odds ratio with 95% confidence interval.

Paper II: A categorical multiple-group confirmatory factor analysis of the SHA measure at T1 and T2 was conducted to provide evidence of construct validity. Furthermore, we conducted multiple-group and longitudinal measurement invariance analysis of the SHA measure [75, 76]. Standardized model fit measures were used to evaluate the fit of the models (Comparative Fit Index (ΔCFI<.01); Root Mean Square Error of Approximation (ΔRMSEA<.015); Standardized Root Mean Square Residual (ΔSRMR<.03 for metric and <.01 for scalar)) [75, 76]. Chi-Square Test of Independence was used to analyze group differences. SHA revictimization was measured as the percentage of students who reported 12-months SHA at T2 among those who had already reported lifetime SHA at T1. Classification and Regression Tree analysis was used to test interaction between independent variables at T1 (gender, school group, WHOQOL-quality of life, WHOQOL-satisfaction with

health, RSES, EDE-q, HBSC-SCL somatic subscale, HBSC-SCL psychological subscale, and READ) and the outcome variable SHA at T2. Data-driven cut-points were used, and a stopping rule of minimum 100 cases in parent node and 50 cases in child nodes. To avoid overfitting and increase the predictive accuracy, we applied tree pruning which allows the tree to grow until reaching the stopping rule before removing non-significant nodes. The default setting of maximum one standard error of difference in risk between the pruned tree and the subtree with the smallest risk was applied [74]. Prevalence differences with corresponding 95% confidence intervals were calculated. Non-binary gender participants were treated as missing on the gender variable as the groups size was too small for meaningful comparisons (n = 4).

Paper III: The items covering lifetime experience of SHA was used in paper III. Differences in numerical data for boys were analyzed using ANOVA with Bonferroni post-hoc test, and Welch test with Games-Howell post-hoc test was used for girls because of unequal variances. Eta-squared was presented as effect size. Pearson Chi-Square test for independence was used for analyses with categorical data, presented with Phi or Cramer's V effect sizes. The response options "*no*" and "*I do not know*" for the questions about report- and support resources were merged for analytic purpose. The total sample of adolescents (n = 1200) and leaders/coaches (n = 249), respectively, was used to analyze awareness of report- and support systems. The questions about disclosure were only given to the adolescents who reported experience of SHA. Consequently, the analyses regarding disclosure included the subsample of participants with experiences of SHA (n = 696). Changes from T1 to T2 were analyzed with McNemar test and included the subsample of participants who responded to both T1 and T2 on disclosure (n = 308), reporting systems and support mechanisms (n = 907), and preventive measures (n = 907).

Unpublished results: Results incorporated in this dissertation which was not included in the papers are marked with (unpublished). Pearson Chi-Square test for independence was used to analyze group differences and the results were presented as percentages with Phi effect size. Paired Sample T-test was used to analyze differences in numerical data from T1 to T2, presented with mean values and Cohen's d effect size.

Ethics

The study was approved by the Regional Committees for Medical and Health Research Ethics (No. 8673, appendix II) and The Norwegian Center for Research Data (No. 960987, appendix III). The study was also registered in Clinical Trials (NCT04003675, appendix IV) and conducted according to the Helsinki Declaration. Participation was voluntary and all participants signed informed consent based on a written information letter and an oral presentation about the study and the participants' rights. According to the Norwegian Health Research Act (chapter four, section 17), adolescents aged 16 and older may consent to participate in medical and health related research without parental consent. The participants could withdraw from the study at any time without needing to provide a reason and were informed that this would not have any negative consequences. All collected data were de-identified.

Due to the sensitive themes of the study, the students were encouraged to talk to someone if they felt affected by the content in the questionnaire. The students were provided with contact information to the project leader and a nurse on the respective schools. They were also informed about the additional option to mark a specific item at the end of the questionnaire if they wanted a conversation with the project leader. This simultaneously gave the project leader permission to contact the specific student.

Results

Participant demographics

All results presented reflect the participants' subjectively reported data.

Adolescent athletes and students

Demographics for the total adolescent sample categorized by gender and school groups are presented in table 4. The mean age of the adolescents at T1 was 17.1 (0.4) years. Those who were involved in a competitive sport represented 52 different type of sports, with football (35.0%), handball (18.2%), and cross-country skiing (9.7%) being the three most frequently represented sports.

Leaders and coaches

The age of the leaders at the non-sport high schools and sport high schools was 45.9 years (SD=6.7) and 52.0 years (SD=8.1), respectively. One third of the leaders were males. For the coaches, the mean age was 41.7 years (SD=10.3) and 79.5% were males. The coaches had on average 8.4 years (SD=7.2) of experience working at a sport high school, and 79.5% reported to have a relevant sports-specific education. Two thirds of the coaches reported to have a position as a coach outside school as well.

Table 4 Baseline (T1) characteristics of the male and female elite athletes, recreational athletes, and reference students (n = 1247).

	Elite athletes	Recreational athletes	Reference students	p-value	Effect size, η2/V
Boys (n = 624, 49.9%)	**(n = 349)**	**(n = 180)**	**(n = 95)**		
Heterosexual orientation, n (%)	341 (97.7)	180 (100.0)	90 (94.7)	n/a	n/a
Living with one or two parents, n (%)	218 (62.5)[a]	153 (85.0)[b]	86 (90.5)[b]	≤.001	V: .277
First- or second-generation immigrant, n (%)	17 (4.9)[a]	21 (11.7)[b]	18 (18.9)[b]	≤.001	V: .181
Training hours per week, mean (SD)[1]	16.8 (5.7)[a]	15.6 (6.1)[a]	7.8 (5.8)[b]	≤.001	η2: .249
Training sessions per week, mean (SD)[2]	10.6 (3.2)[a]	9.5 (3.2)[b]	4.3 (2.9)[c]	≤.001	η2: .323
Competitive sport, n (%)[3]	330 (97.1)[a]	149 (82.8)[b]	21 (22.6)[c]	≤.001	V: .663
Level of performance[4]					
Club level, n (%)	32 (9.7)	54 (36.2)	4 (19.1)	n/a	n/a
Regional level, n (%)	76 (23.1)	40 (26.8)	7 (33.3)	n/a	n/a
National level, n (%)	178 (54.1)	48 (32.2)	9 (42.9)	n/a	n/a
International level, n (%)	43 (13.1)	7 (4.7)	1 (4.8)	n/a	n/a
Girls (n = 623, 49.8%)	**(n = 307)**	**(n = 130)**	**(n = 186)**		
Heterosexual orientation, n (%)	292 (95.1)	126 (96.9)	175 (94.1)	.509	V: .047
Living with one or two parents, n (%)	204 (66.4)[a]	117 (90.0)[b]	174 (93.5)[b]	≤.001	V: .319
First- or second-generation immigrant, n (%)	18 (5.9)[a]	4 (3.1)[a]	35 (18.8)[b]	≤.001	V: .222
Training hours per week, mean (SD)[1]	15.5 (5.8)[a]	14.3 (5.5)[a]	7.2 (5.5)[b]	≤.001	η2: .300
Training sessions per week, mean (SD)[2]	9.6 (2.5)[a]	8.8 (3.5)[a]	5.2 (3.5)[b]	≤.001	η2: .285
Competitive sport, n (%)[3]	292 (96.4)[a]	99 (76.2)[b]	48 (26.2)[c]	≤.001	V: .669
Level of performance[4]					
Club level, n (%)	41 (14.0)	40 (40.8)	20 (41.7)	n/a	n/a
Regional level, n (%)	69 (23.6)	27 (27.6)	11 (22.9)	n/a	n/a
National level, n (%)	137 (46.9)	27 (27.6)	10 (20.8)	n/a	n/a
International level, n (%)	45 (15.4)	4 (4.1)	7 (14.6)	n/a	n/a

n/a = not applicable – statistical assumptions violated; η2 = eta-squared effect size; SD = standard deviation; V = Cramer's V effect size
a,b,c: subscripts with different letters indicate significant differences between the school groups.
Missing: n = 4 (non-binary gender identification), [1]n = 10 boys and n = 5 girls; [2]: n = 10 boys and n = 6 girls; [3]: n = 11 boys and n = 7 girls.
[4] Level of performance among those who reported being involved in a competitive sport (n = 499 boys and n = 438 girls).

Drop out analyses

Among the adolescents who participated at T1, 301 did not participate at T2. Ninety-eight of these did not receive the questionnaire at T2 because they quit school or changed school (*n* = 44) and one school declined participation at T2 (*n* = 54). The rest (*n* = 203) did not participate of unknown reasons. There were no differences between those who consented to participate and those who did not consent to participate at T2 in school affiliation (p=.952), gender (p=.286), sexual orientation (p=.677), living situation (p=.274), immigrant status (p=.200), participation in competitive sport (p=.245), training sessions per week (p=.149), training hours per week (p=.254), experience of lifetime SHA (p=.795), lifetime verbal SH (p=.975), lifetime non-verbal SH (p=.786), lifetime physical SHA (p=.498), 12-month SHA in the school setting (p=.271), 12-month SHA in the free time setting (p=.472), or the mental health outcomes WHOQOL-quality of life (p=.381), WHOQOL-satisfaction with health (p=.461), RSES (p=.915), EDE-q (p=.855), HBSC-SCL (p=.656), and READ (p=.333). However, a higher percentage of the drop-outs had experienced SHA during the last 12 months in the sport setting compared to the consenting participants (19.7% vs 13.9%, p=.018, Phi: -.068), and a higher percentage of the drop outs participated in sports at the national level compared to the consenting participants (52.6% vs. 40.5%, n=940, p=.004, V=.119).

Paper I

Paper I presented the 12-month prevalence of SHA, and the 12-month prospective change in SHA victimization in three different social settings among elite athletes, recreational athletes, and reference students, in addition to perpetrator characteristics.

12-month prevalence of sexual harassment and abuse

In total, independent of social setting, nearly two out of five (38.6%) adolescents reported having experienced SHA during the last 12 months prior to T1, and more than one out of three (35.1%) reported SHA victimization at T2 (Paper I, table 2). Verbal- and non-verbal types of SH were more frequently reported than physical SHA. Girls, compared with boys, reported more SHA victimization at both time points, and the elite athletes reported less SHA than the recreational athletes and the reference students at both time points (Paper I, table 2). SHA was more frequent during free time compared with the school setting and the sport setting, respectively, and more

frequent in school than in the sport setting. The elite athletes reported less SHA in the school setting compared with the recreational athletes, and less SHA during free time compared with the recreational athletes and the reference students (Paper I, table 2). The prevalence of SHA was lower among the reference students in the sport setting, compared with the two athlete groups (Paper I, table 2).

Among the participants who reported non-binary gender identification, three out of four and two out of four reported SHA in the school setting and free time setting at T1, respectively. One of the non-binary participants reported experiences of SHA in all three settings at T2.

Perpetrators of sexual harassment and abuse

The most frequently reported group of perpetrators were peers (83.1%), followed by "others" (i.e., family members, employer, others) (56.4%), and trainers/teacher/health care providers (20.1%). Boys reported more peer perpetrators than girls and girls reported more "other" perpetrators than boys. The perpetrators were mainly reported to be males, or perpetrators of both genders (paper I, figure 4 A-C). Six percent of the adolescents reported to have sexually harassed others in the past, with a higher percentage among boys compared with girls. Among those who admitted perpetration, 60.7% also reported having been a victim of SHA themselves.

The elite athletes (84.5 %) and the recreational athletes (87.5 %) reported more peer perpetrators compared with the reference students (69.1 %, $p=.002$), while the reference students reported more "other" perpetrators (72.3 %, $p\leq.001$) compared with the elite athletes (54.2 %) and the recreational athletes (45.2 %) (unpublished). The recreational athletes (26.0 %) reported trainer/teacher/health personnel more frequently than the elite athletes (21.3 %, not significant) and the reference students (11.7 %, $p=.039$) (unpublished).

Prospective change in sexual harassment and abuse victimization

A decrease in reported SHA was found from T1 to T2 in the school setting and the sport setting, respectively (paper I, figure 5). This consisted of a decrease in physical SHA but no change in verbal- and non-verbal types of SH from T1 to T2. However, most of the participants (74.6%–85.0% in different social settings) had no change in SHA victimization from T1 to T2, meaning they reported SHA at both T1 and T2, or neither T1 nor T2.

Paper II

In paper II, we examined the prevalence of SHA revictimization and which combinations of demographic- and mental health factors at T1 that increased the risk of SHA victimization at T2.

Measurement invariance analyses of the SHA measure

The confirmatory factor analysis of the SHA measure at T1 and T2, respectively, yielded a good fit to the data. With use of more restrictive invariant models, the multiple-group and longitudinal measurement invariance analysis from T1 to T2 yielded an unacceptable fit for 1) gender and 2) school type. However, we conducted separate analyses using both gender and school type attempting to establish multiple-group measurement invariance of the SHA measure at T2 (the outcome variable in paper II). The multiple-group measurement models for gender and school type, respectively, showed an acceptable fit with partial scalar factorial invariance constraints in place.

Revictimization

Half of the students who reported lifetime experiences of SHA at T1 also reported revictimization at T2 (60.9% girls and 32.2% boys). A lower percentage of the elite athletes (44.3%) reported SHA revictimization compared with the recreational athletes (49.1%), and the reference students (59.4%).

Risk factors for sexual harassment and abuse victimization

Female gender was the main risk factor for SHA victimization at T2 (Paper II, figure 2). Furthermore, symptoms of eating disorders was a significant risk factor among the girls. Girls with high EDE-q score (>2.866) were more likely to report SHA at T2 than girls with lower EDE-q scores (<2.866). In combination with being a girl with low EDE-q score, high level of other psychological health problems (>11.5) was a significant risk factor for reporting SHA at T2.

Because the measurement invariance analysis showed non-invariance for the longitudinal SHA measure (T1 to T2), we did not include SHA at T1 in the risk factor analysis. Nevertheless, we conducted a separate analysis afterwards to test whether a history of SHA would increase the risk of subsequent SHA victimization. The results from this analysis showed that SHA at T1 was the most significant risk factor for SHA at T2.

Paper III

Paper III covered the adolescents' awareness and use of reporting systems and support mechanisms in high school, experiences with disclosure of SHA, changes in awareness about the resources from T1 to T2, and whether the adolescents recognized if any preventive or informative measures had been implemented in school the last year. We also examined the leaders' and coaches' awareness of report- and support resources in school.

Awareness about report- and support resources in school

Among the adolescents, 11.4% were aware of the reporting system for SHA at their school and 34.0% reported to know a support system where you could seek help. A higher proportion of boys compared with girls reported to know the reporting system. Otherwise, there were no differences in awareness of report- and support resources between boys and girls, between the elite athletes, recreational athletes, and the reference students, or between the adolescents who reported lifetime experience of SHA and those who did not report lifetime experience of SHA. From T1 to T2, there was a negative change in awareness of support mechanisms among the adolescents, but no change in awareness of reporting systems.

Half of the adolescents (53.2%) who reported to be aware of the support system in school reported that they were likely to use it if needed, with no gender- or school group differences. The adolescents reported reasons for not wanting to use the support system like feeling scared or embarrassed, would rather talk to someone else, did not consider the system good enough or appealing, and no need for support (Paper III, figure 2).

Leaders' and coaches' awareness of report- and support resources in school

Half of the coaches were aware of the reporting system (51.9%) and support mechanisms (51.3%) in their school, and nearly all the leaders (98.8%) reported that their school had such resources (Paper III, table 2).

Disclosure of sexual harassment and abuse

Among the adolescents who had experienced SHA during their lifetime, one in five reported that they had disclosed to someone (20.1%). In descending order, peers, parents/family, and teachers/coaches were the most frequently points of disclosure in the school setting (Paper III,

figure 3). A higher frequency of girls disclosed compared with boys, while a lower frequency of elite athletes and recreational athletes disclosed about their experiences compared with reference students. Stratified by type of SHA, 21.0%, 22.8%, and 29.5% of the adolescents who reported experiences of verbal SH, non-verbal SH, and physical SHA, respectively, disclosed their experiences (unpublished). The rate of disclosure changed from T1 to T2 among the adolescents who reported experiences of SHA at both time points. Specifically, a higher percentage reported that they had disclosed following their experience with SHA at T1 but not following their experience of SHA at T2, compared to the opposite of not disclosing at T1 but disclosing at T2.

Preventive- or informative measures against sexual harassment and abuse in school

With no gender- or school group differences, 6.5% of the adolescents perceived that their school provided SHA-related information or implemented measures against SHA during the 12-month gap between T1 and T2. The specific measures recognized by the adolescent were presentations/information about SHA, information about where to find support/help, surveys, and personalized measures.

Adolescents' perceptions of completing surveys about sensitive themes (unpublished)

At T2, the adolescents were asked how they experienced responding to the survey. Overall, 79.9-88.3% agreed or strongly agreed to the statement that "the questions were good", and "it was nice that such themes are being focused on" (figure 3, statement 1 and 2 from the left). Furthermore, 60.5-82.2% disagreed or strongly disagreed that the questions were uncomfortable or possibly harmful (figure 3, statement 3 to 6 from the left), and 2.6% reported that sensitive questions should not be asked.

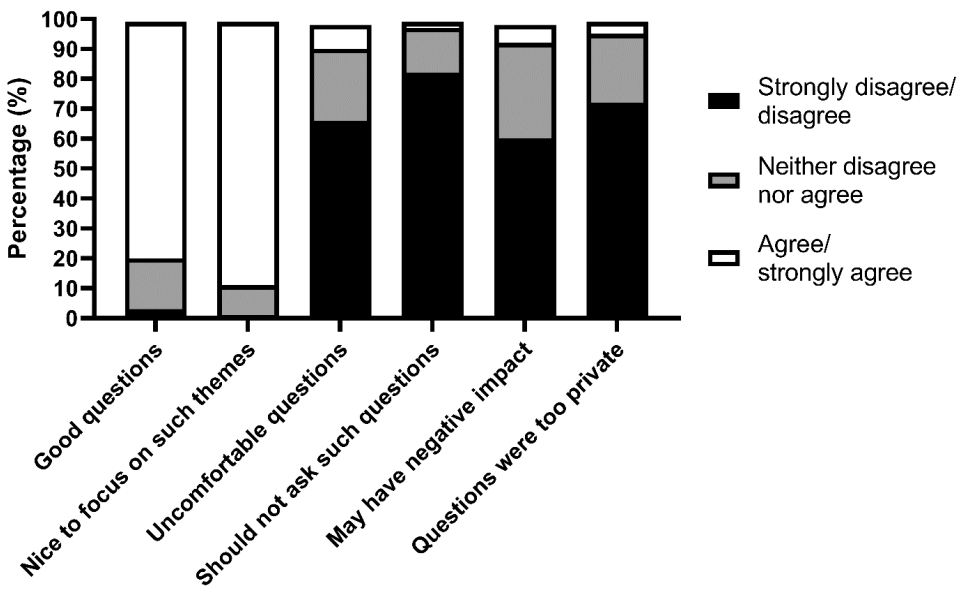

Figure 3 Adolescents' perceptions of completing sensitive surveys (n = 934).

Discussion

The overall aim of the Ph.D.-study was to examine SHA among adolescent elite athletes, recreational athletes, and reference students in different social settings in Norway, including the prevalence of SHA victimization and revictimization, risk factors, disclosure of SHA, and awareness of report- and support resources in school. The discussion is structured in sections where similar thematic results across the three papers are discussed, followed by a discussion around methodology, suggestions for future research, and practical- and societal implications. The focus throughout the discussion will be on the athlete groups as they were the primary groups of interest for this PhD-study.

Prevalence of sexual harassment and abuse

Comparing prevalence rates of SHA is challenging because different operationalization of SHA and different methodology between studies impact the prevalence rates, including different measurement instruments, time perspectives (lifetime vs. 12-month), social contexts, and sample compositions. Only a few previous studies have examined 12-month SHA victimization in athletes or people involved in sports [27, 47, 55]. The prevalence among our elite- and recreational athletes were much higher than the prevalence of reported SH by youth athletes in Canada [55]. Methodological differences like number of items used to measure SHA and the type of perpetrators included (only coaches in the Canadian study) likely contribute to the different prevalence rates between the studies. We measured SHA by 13 items which may lead to a higher prevalence as more situations of SHA were captured compared to the Canadian study which used only three items [55].

A recent Norwegian study examined prevalence of SHA the last 12 months in a sport setting among secondary- and high school students involved in organized sports at least once per month [47]. The authors did not report the adolescents' study programs, but both public- and private schools were included in the main study where the data material originates [77], hence it is likely to believe that both elite athlete-, recreational athlete-, and non-sport students were included. However, the sample in Strandbu et al.'s study is probably most comparable to the recreational group and the reference group in our study if we compare training time per week and considering their low criteria for involvement in sports (once per month) [47]. The prevalence rate in Strandbu et al.'s study (11%)

[47] was between the rates for the recreational athletes (15.9%) and reference students (4.5%) reported in the sport context outside school in our study (at T2, which is comparable to the time of data collection during the pandemic in both studies). Although the prevalence rates were approximately the same, different ways of measuring SHA (three items in Strandbu et al.'s study) challenge comparison of the results between our study and Strandbu et al's study.

Lastly, Parent et al. [27] reported a 12-month prevalence rate at 35% for sexual violence at university among Canadian varsity athletes [27]. Having in mind the age difference between university athletes and high school-athletes, we found a lower prevalence among the elite athletes in the school setting in our study (18.9%), but the prevalence rate among the recreational athletes (30.9%) was more comparable to the findings in Parent et al.'s study [27]. It should also be mentioned that it is difficult to compare a single group of varsity athletes with our elite- and recreational athletes since the training- and performance level also differ in varsity athletes. Nevertheless, the Canadian athlete sample consisted of a higher percentage of girls (70%), sexual minorities (19%) and people with disabilities (11%) compared to our sample. This may contribute to a higher rate of SHA because previous studies have shown that girls and people identifying with a minority group have reported more SHA victimization compared with boys and majority groups [1, 23].

Gender differences

The overall results from our study indicate that girls were more vulnerable for various outcomes related to SHA than boys. Girls reported more 12-month SHA victimization, more SHA revictimization, and female gender was the main risk factor for subsequent reporting of SHA victimization. A higher frequency of girls compared with boys also disclosed their experiences. This gender difference in disclosure was supported in the interview part of our study where especially male participants reported high thresholds for help-seeking [78]. Previous research has shown mixed results regarding gender differences in SHA victimization, but most studies have found a higher victimization rate among girls compared with boys [28, 29, 49, 50, 57]. It is not known whether boys actually experience less SHA than girls, or whether factors like differences in perceptions and interpretation of the situations and underreporting among boys can explain the gender differences in both victimization and disclosure [23, 57, 79]. Boys may be more reluctant to report that they have experienced something which are considered taboo or that violate the norm of masculinity and status [28, 80, 81]. On the other side, more boys compared with girls admitted having sexually

harassed others. This is in line with previous research [67, 79] and corresponds with the finding that males are most often reported as perpetrators in our study and in other studies [1, 58], although perpetrators of both genders were also reported in our study.

Who the adolescents reported as perpetrators also differed between boys and girls in our study. Boys reported more peer perpetrators, while girls reported more "other" perpetrators. The same pattern was found among Norwegian university students [64]. This may be connected to a culture of normalization of homophobic and abusive language within peer male groups [82], corresponding to our findings that verbal- and non-verbal types of harassment were more frequently reported than physical SHA.

Regarding awareness of or willingness to use the support resources in school, we found no difference between girls and boys. However, a higher proportion of the boys in our study were aware of the report system in school compared with girls. Nevertheless, a small effect size indicates low relevance of this finding.

The group of non-binary participants were too small to include as a comparison group in our study, but our findings regarding SHA experiences correspond to results reported by other researchers in that people identifying with a minority groups are more vulnerable for SHA victimization [23, 28].

School group differences

In contradiction to previous studies which have highlighted elite athletes at risk of experiencing SHA in sports [1, 83], the adolescent elite athletes in our study reported less SHA during the last 12 months and less SHA revictimization than the recreational athletes and reference students. Supporting the Sport Protection Hypothesis, athletes may develop characteristics through sport participation like strength, self-confidence and self-esteem, and physical adeptness, which may protect them against SHA victimization [6]. Previous researchers have also found supportive results to this hypothesis [6, 30, 55], while others have not [27, 84]. However, most of the cited studies examined lifetime prevalence of SHA, thereby having limited power to discuss whether sport participation protects against SHA or whether those who have experienced SHA are less likely to choose to engage in sports. We examined experiences within the last 12-months, where current athlete status and somewhat recent SHA experiences may increase support of this hypothesis. In contrast, Parent et al. [27] also examined last-year violence and did not find any difference in

experience of sexual violence between varsity athletes and non-athletes, thereby concluding no support for the Sport Protection Hypothesis.

On the other side, our finding of a lower prevalence of SHA among elite athletes compared with recreational athletes and reference students may also be related to normalization of abusive behaviors and excessive commitment to the sports ethics, i.e. identifying as a "real athlete" [85]. Elite athletes may be extra vulnerable to normalize behaviors that otherwise would be considered unacceptable [1, 86] based on the elite sport performance culture which foster extreme attitudes like accepting risks and enduring pain, training and competing through injuries, pushing physical- and mental limits to pursue the athletic dream, making sacrifices for and committing to the sport, and striving for excellence and distinction [35, 36]. As a consequence, this normalization may lead to underreport of their experiences in surveys [6]. Normalization of abusive behaviors is also supported by research stating that athletes may reflect upon their experiences from another point of view when they quit sports and reconsider their experiences as harmful although it was normalized at the time happening [26, 86, 87].

We did not measure socio-economic status (SES) in our study, but considering results from former research, low SES may be associated with higher rates of SHA victimization [47, 88]. SES could therefore be a relevant factor explaining differences in SHA victimization between the three school groups in our study. A higher percentage of the elite athletes had moved away from their parents, and the elite athletes must pay a fee to attend private elite sport high schools while the educational programs for the recreational athletes and the reference students is free of charge in Norway. This may indicate higher SES among the elite athletes, possibly contributing to lower rate of SHA among elite athletes.

Furthermore, a lower percentage of the elite athletes and recreational athletes in our study disclosed their experiences of SHA to someone compared with the reference students. Adding to the discussion above, sport-specific factors may increase barriers to report and disclose for athletes. This includes a cultural norm of toughness in sports which may counterbalance the vulnerability of victimization, fear of potential consequences like losing the position on the team, losing sport identity or being excluded from the environment, and public or media coverage that may negatively affect performance or reputation for the individual or the sport environment [1, 23, 87, 89]. The awareness of available report- and support services in school and willingness to use them did not differ between our school groups. Hence, the distribution of information about such resources seem

to be similar across the different school types, but at the same time unsatisfactory considering the low rate of awareness among the adolescents.

Social settings

The fact that SHA most frequently occurred during free time in our study (i.e. outside school and sport settings) supports former studies among athletes [6, 58, 90] and may be related to reduced supervision from adults during free time activities [79, 80]. In support of our findings that SHA was less likely to occur in a sport setting compared to school- and free time settings, American adult elite athletes self-rated the competitive sport setting as less likely to experience SHA compared to other contexts [37].

The reference students in our study had the lowest prevalence of SHA in the sport setting compared with the other groups. This is not surprising since the reference students spent less time training and playing sports than the two athlete groups. Similarly, because the elite athletes spent most of their time in a sport setting, little time is left for leisure activities, hence there was not a surprise that the elite athletes had the lowest prevalence rate of SHA in the free time setting compared with the other groups. Furthermore, in Norway, some students practice competitive sports during their spare time, but attend non-sport educational programs. In our study, about one in four reference students reported involvement in competitive sports whereof 46.2% of the boys and 37.5% of the girls competed at national or international level (Paper I, table 1). No significant difference in SHA victimization was however found between the reference students involved in competitive sports and those not involved in competitive sports (37.8% vs. 49.7%, p=.159, Phi: .100, unpublished). Nevertheless, considering the absolute numbers, we see a tendency that the reference students involved in competitive sports also reported less SHA than those not involved in sports. This finding might support our previous results of a lower prevalence of SHA among elite athletes compared with recreational athletes and reference students considering the high percentage of reference students who reported to compete at a high level. Moreover, it underlines the importance of further investigation into sport-specific factors that may influence the rates of reported SHA.

Perpetrators

In the present study, peers were most frequently reported as perpetrators of SHA, in line with other recently conducted studies among adolescent athlete samples [29, 47, 50, 51, 57]. However, only six percent of the adolescents admitted having sexually harassed others, a result probably affected by underreport due to shame, guilt, fear of consequences, or simply not being aware of how their behavior have had a negative impact on others [12, 82]. As children and adolescents get older, time spent with peers increases at the same time as parental supervision decreases, possibly facilitating victimization between peers [80]. Moreover, certain cognitive processes are not fully developed before adulthood, including social functions like recognizing and understanding others' perspectives and emotion regulation abilities. These factors may impact adolescents' decision making, taking more impulsive and risky choices based on current emotional state, and not considering the long-term consequences for themselves or others [91, 92]. On the other side, our findings that peers were reported as the group that most adolescents turned to for disclosure highlight the significance of peer relationships and support in a positive way.

The elite- and recreational athletes reported more peer perpetrators than the reference students in our study. Increased competition between peers in sports may strengthen a need to demonstrate status or power, thereby facilitating peer victimization [1]. Athletes are often considered a group with high status in the society, hence they may also be more approached by peers as objects for (romantic) relationships [31].

Coaches/teachers/health personnel and "others" were also reported as perpetrators in our study, but to a lower degree than peers. Although not significant, the recreational athletes reported more coaches/teachers/health personnel as perpetrators than the elite athletes. Considering cultural differences between the elite sample and the recreational sample, the consequences of possibly losing the coach may be higher for the elite athletes, and fear of reporting their experiences, also in a questionnaire, could therefore exist. On the other side, although not an evidence-based reflection but based on the fact that many coaching positions are voluntary in organized sports in Norway, we can speculate about whether the coaches for the elite athletes are more professionalized. Hence, one could expect that their behaviors and communication would favor less victimization. There are, however, not a lack of examples where coaches or other authorities in position of power have behaved in a sexually unacceptable or criminal way towards athletes [93-96]. The higher occurrence of "other" perpetrators among the reference students in our study is likely related to the social

context where reference students spend more time in leisure activities, thereby being more exposed to "other" perpetrators (e.g., random people, employer, customers at work) than the elite- and recreational athletes.

Prospective results

Prospective studies are necessary to investigate changes in SHA over time and examine possible risk factors for SHA victimization [65]. Such designs are considered especially important in adolescence because of the rapid personal- and social changes and development happening within this period [66]. However, prospective studies about SHA among athletes are lacking. Prospective studies among adolescents in general have yield conflicting results indicating both an increase, decrease, and stable prevalence rates of SHA over time, although the samples were younger than our study sample [31, 97, 98]. Our finding of a decrease in reported SHA victimization from T1 to T2 in the sport- and school setting is most likely a result influenced by the COVID-19 pandemic and corresponding lockdown periods in school and organized sports. This naturally restricted the adolescents' time spent in these settings. Less time spent in a setting equals less exposure time which likely contribute to lower prevalence rates [29, 99]. However, researchers have also stated that adolescents perceive SHA to be less wrong as they get older [100], possibly contributing to less reporting and consequently lower prevalence rates over time. Simultaneously, our findings of a reduction in the rate of disclosure and awareness of support systems in school from T1 to T2 may also be connected to the COVID-19 lockdown with potentially reduced access to support and safe points of disclosure [101]. There could also be methodological reasons for these findings. The follow-up questions made the questionnaire longer for those who reported experiences of SHA, hence a learning effect from the first round could contribute to the students choosing not to report their experiences at T2 to avoid detailed and time-consuming follow-up questions [102]. This is, however, less likely because no change was found in SHA victimization in the free time setting. Lastly, a higher percentage of the adolescents who participated at only T1 had experienced SHA in the sport setting compared with those who participated at both time points. This may also contribute to a lower prevalence rate at T2 as we believe that some of the dropouts would have experienced SHA again at T2 considering our finding that half of the adolescents who reported lifetime experiences of SHA at T1 also reported revictimization at T2.

Comparing rates of SHA revictimization between studies is challenging because of different methodological choices like how revictimization was measured, time perspective between initial experience and revictimization, and types of SHA included. Studies among non-athletes have reported both lower [103], higher [8], and similar [104] rates of SHA revictimization as our findings. No researchers had investigated revictimization in athletes until Parent et al [30] recently reported an association between experiences of SA in childhood and sexual violence in sports among adolescents. Stigmatization, altered emotional- and cognitive processes and responses, and maladaptive coping styles have been suggested as possible factors contributing to revictimization in adolescence and adulthood [30, 80, 105, 106].

Risk factors for SHA victimization

Although only significant for girls in our study, symptoms of eating disorders and other psychological health problems were significant risk factors for subsequent SHA victimization. As indicated in the previous chapter, difficulties with regulating and expressing emotions have been found challenging in victims of SHA, but also for people with eating disorders and other psychological health problems [107]. In addition, people with symptoms of eating disorders often suffer from high weight- and shape concerns [108] and high body-surveillance [34]. This may contribute to a higher level of internalization and possible misinterpretation of comments, glances, and behaviors directed towards body or appearance, which may result in higher vulnerability for SHA victimization [38]. In support of our findings, Pittinger et al. [81] reported that one out of five youth in their study had a psychiatric problem prior to the initial episode of sexual victimization, hence youth with psychological health problems may be at higher risk for initial sexual victimization, but also for sexual revictimization [81].

Even though the results from the risk factor analysis in our study showed that having symptoms of eating disorders and psychological health problems were risk factors for SHA victimization, we do not know whether these factors are directly related to SHA victimization, or whether they could also be consequences of previous victimization, as reported in previous research [38, 109]. Half of the adolescent sample reported SHA revictimization at T2, meaning they had also experienced SHA earlier in their lifetime. Therefore, we could speculate on whether symptoms of eating disorders and other psychological health problems could also be mediating factors in the relationship between initial SHA and SHA revictimization. Because we did not include a history of SHA or other

traumatic experiences in the main analysis, we cannot conclude with temporal relationships [65]. The reason why we did not include a history of SHA as a potential risk factor was based on the invariance analyses which indicated that SHA was perceived differently by the participants at T1 and T2. From a practical point of view, it could be argued that the likelihood that the adolescents understood the concept of SHA differently from one year to the other is minimal. As such, because a history of SHA has been highlighted in previous research to be associated with revictimization [8, 9, 104, 110], also in a recent study among adolescents in organized sports in Canada [30], we ran an additional analysis including a history of SHA. Consistent with the previous studies, lifetime experience of SHA was the strongest risk factor for subsequent SHA when we included it in the analysis among the other independent variables.

We did not find any significant risk factors for SHA victimization for boys in our study. One of the reasons may be related to the variables we included in the model, measuring mostly internalizing mental health problems. For example, the EDE-q, has been argued to be less optimal in capturing disordered eating behaviors among boys compared to girls [111]. However, this calls for increased effort in research among boys, as the prevalence rate for boys in our study also was concerning.

Awareness of report- and support systems in school and disclosure of sexual harassment and abuse

Reporting procedures and policies against SHA in school is important in terms of safeguarding [1, 66], but having such measures in place are not necessarily effective if the attitudes and actions by the people in the environment do not correspond [112]. Brown et al. [112] reported that whether the school had a policy against SHA or not did not seem to influence the victimization rate in school. The students' perceptions of whether the school had a policy was, however, more important for their feeling of safety regardless of whether the school actually had a policy in place [112]. One out of ten adolescents in our study were aware of the reporting system in their school, which was lower than among American student athletes [89] and American adult elite athletes [37], but similar to findings among recently graduated high school students in the USA [112].

Only half of the coaches in our study were aware of available report- and support resources in their school. It is likely that some of the coaches were part time coaches in school because the inclusion criteria for participation was only 20% employment status. Therefore, coaches with low employment

status may be less engaged in the organizational school climate, possibly contributing to the limited awareness about report- and support resources in school. Nevertheless, uncertainty about what constitutes SHA or limited knowledge about the school's SHA policy among the coaches may be reflected in the low awareness of available resources among the students in our study as well. Coaches and teachers may be important role models and contributors to the students' knowledge and attitudes towards SHA by informing and educating the students about the theme and available support resources, but also being good bystanders by intervening on unacceptable behaviours [100]. In an American study, adolescents reported that seeing teachers intervene against SHA made them more likely to judge the situation as wrong themselves [100], emphasizing the importance of giving education and training to teachers and coaches about discovering and intervening against SHA.

One out of five adolescents in our study had disclosed their experiences to someone, a lower number than reported among adolescents in general [113, 114], young athletes [50], and adult athletes [58, 115], but higher than what have been reported among student-athletes [89]. The age of the participants and whether only formal disclosures or also non-formal disclosures were measured likely contribute to different rates of disclosure between the studies. Our findings also showed that experiences of verbal- and non-verbal SH were more frequently reported than physical SHA, but disclosure to others seemed to be the opposite where a higher percentage of adolescents who had experienced physical SHA disclosed compared to those who had experienced verbal- and non-verbal SH. This may indicate that more people seek help for experiences they consider as more severe, in accordance with a study among American student-athletes [89], but it may also emphasize normalization of verbal- and non-verbal harassment [35]. Still, the subjective perspective of SHA is important to remember. Situations perceived as "mild" for one person may be perceived as "severe" for another, and the consequences may be similar despite experiencing different types of SHA.

Methodological considerations

Internal validity

Research design and procedure

The use of a prospective research design was pioneering in the field of SHA research in sports. We combined it with the examination of 12-month experience of SHA, which provided an opportunity to get an overview of the status of SHA victimization within the environments where the adolescents were currently active, and follow the development over time.

The data collection procedure and the presentation given to the students before they completed the questionnaire was standardized and presented by the same members of the project group each time. The procedure was also similar across all three school groups. We made sure that the students answered the questionnaire at T2 approximately 12 months after T1. As such, the time period between the two measurement points was standardized although the data collection periods were long, lasting from October to May at T1 and from October to March at T2. The data collection periods were long because of practical organization with many school visits at T1 and adaptations to the COVID-19 pandemic, but it resulted in a total data material that captured seasonal variations which can give a good picture of the overall scope of SHA among adolescents.

As mentioned in the discussion of the results, we did not control for prior experiences of SHA in the risk factor analyses although previous studies have shown that a history of SHA is associated with revictimization [104]. As such, the prospective research design was not utilized to the fullest in the risk factor analysis reasoned by our statistical findings of measurement non-invariance of the SHA measure from T1 to T2.

COVID-19

Because the study was a school-based study and all schools in Norway closed in March 2020 due to the Covid-19 pandemic, the data collection had to pause temporarily and continue later with a digital procedure. A limitation with the digital procedure was the lack of direct contact with the students which may be reflected in the lower response rate among the adolescents who participated digitally compared to those who received a physical school visit at T1. In addition, we imagine that the barrier to ask questions was higher when the students had to reach out on the digital platform, via

mail, or phone. However, at T2, most of the participants had already answered the questionnaire once and presumably had less questions in the second round because the questionnaire was nearly identical at T1 and T2. Despite these organizational challenges, we believe that we managed to conduct the study in a proper way and do not consider the format change from physical visits to digital procedure to have had significant negative effects on the quality of the data material. Nevertheless, changes in the adolescents' environment and social restrictions during the pandemic may have influenced the responses at T2, especially for items related to training and mental health. The adolescents reduced hours of training (T1: 13.8 hours, T2. 12.9 hours, $p \leq .001$, Cohen's d: .141) and perceived quality of life (T1: 4.1, T2: 4.0, $p \leq .001$, Cohen's d: .131) from T1 to T2 (unpublished). However, the effect sizes and absolute changes in values were very small, indicating little relevance of these findings.

Measuring sexual harassment and abuse

The way SHA was defined and operationalized is important to discuss because it impacts interpretation of the results from the current study, comparison of results between studies, and it affects the content in the measurement items. We chose the definition of SHA from the Norwegian Equality and Anti-Discrimination Act which incorporates a broad perspective of SHA and may facilitate future implementation of the results from this study into the Norwegian school setting.

There was no validated questionnaire available for measuring SHA in sports at the time of planning this study (2018/2019). Therefore, the items used to measure SHA in our study was inspired by previous Norwegian studies among athletes and non-athletes [6, 63, 64]. The questions were described behaviorally because this is considered more accurate than a single question like "have you experienced sexual harassment or abuse" which usually underestimates the prevalence [116]. Attempting to eliminate consensual jokes and teasing, it was specified in the questionnaire that the participants should only think about experiences that they perceived as unwanted and did not want to take part in at the time it occurred. The items were formulated to fit the adolescent age group and piloted in a group of age-matched adolescents to ensure proper understanding of the questions. In retrospect, when comparing the items we used to measure SHA in our study with the items in the before-mentioned validated questionnaire in young athletes [61] and other questionnaires used to measure SHA in sports internationally in recent times [28, 58], the content in the measurement items is quite similar.

Bias related to self-report measurement methods are unavoidable [102]. The participants who had experienced various types of SHA received follow-up questions to each type, which made the questionnaire long and detailed and may have led to respondent fatigue [102]. Reluctance to report negative or shameful outcomes like SHA and mental health burdens is also well-known, and reporting experiences from the past is dependent on memory which may cause underreporting [28, 54, 65, 102, 117]. However, when reporting lifetime experiences, in favor of our young sample, the perspective of remembering back in time is shorter than for adult samples which may yield less recall bias.

Wording of the questions may also affect the results. The adolescents may have linked the word "disclosed" to formal disclosure only and answered "no". In that case, the follow-up question concerning who they disclosed to would be left out, which did not give them the opportunity to state less formal points of disclosure like family and friends. The awareness of available support systems in school could have been higher if we had asked directly whether their school had a school nurse, which is a well-known health service in Norwegian schools, rather than an open question asking for support services in general.

We did collect data concerning how frequent the adolescents had experienced each of the 13 types of SHA. These data could have been useful to classify severity of SHA [28]. However, because of the subjective perspective of SHA, we chose to report the results using a total measure containing all types of SHA measured. We further categorized the items into verbal-, non-verbal, and physical SHA which may give some perspective into the level of severity of our results. The United Nations declare that "(…) all forms of violence against children, however light, are unacceptable" [118, p. 8], and that the definition of violence do not depend on perpetrator intention, severity of the incidence, or frequency of the incidence [118]. People will perceive situations differently depending on gender, personality, culture, and personal history [4, 6], which makes measurement and classification of severity challenging.

An inadequately constructed questionnaire can result in uncertainty in the data that cannot be compensated for by statistical methods [119]. Therefore, we applied measurement invariance testing to test whether the concept SHA was understood equally between gender (girls and boys), between school groups (elite-, recreational-, reference group), and over time (T1 to T2) [76]. As personal knowledge about different statistical methods and the importance of invariance testing developed during the study process, the invariance analyses were not conducted before the end of the project

period, related to paper II (which was the last out of the three papers to be submitted). The results from these analyses highlighted some issues with the questionnaire. The confirmatory factor analyses of SHA at T1 and T2 had a good model fit, but the fit was poorer when separating into the categories verbal-, non-verbal, and physical SHA due to high factor correlations and a high SRMR value. When looking into the SHA measure again, overlapping items were discovered (e.g., #11 coerced sexual act and #12 rape) which should be handled before future use of the questionnaire.

Mental health instruments

The instruments we used to measure mental health were chosen based on expert knowledge from previous experience with use of the instruments by our research group, combined with findings in previous studies regarding association between SHA victimization and mental health outcomes available at the time of planning the study [21, 34, 38, 40, 42, 72, 110]. The instruments covered both positive aspects (quality of life, self-esteem, resilience) and negative aspects (symptoms of eating disorders, physical- and psychological health problems), contributing to a holistic perspective of mental health. All the instruments have been tested for validity in general samples of Norwegian adults [120-123] or Norwegian adolescents [123-125], thus with varying but promising results. Regarding athlete samples, a recent validation study of the EDE-q have been conducted in Denmark, with positive results concerning the instruments ability to detect both elite- and recreational athletes with eating pathology [126].

Statistical analyses

We used the conservative method of Bonferroni correction in the Chi-Square analyses in paper I to reduce the risk of bias related to multiple testing. We later learned that the number of tests were not large enough for multiple testing bias being an issue, hence no correction was applied for the Chi Square analyses in paper II and III. The analyses for paper I were later repeated with and without Bonferroni correction, but the results did not yield a noteworthy change.

We consider the use of Classification and Regression Tree analysis innovative in the field of SHA-research. The multidimensional perspective of SHA might be better understood by such a person-centered analysis compared to the common way of assessing risk factors by variable-centered approaches, involving statistical analyses like regression analyses [127]. The Classification and Regression Tree analysis can identify subgroups with shared characteristics that increases the risk of

SHA and relatedly be more practically relevant in terms of developing preventive measures targeting vulnerable groups [127, 128].

External validity

Adolescent athletes and students

The study had an equal distribution of boys and girls and included all gender identities. The high schools were spread geographically across Norway, embracing various urban and rural cultures. The athletes could represent all types of sports. We measured SHA in three different social settings, which is important for comparison and implementation of future prevention measures. Apart from the ability to read and understand Norwegian language, we did not have any exclusion criteria for participation for the adolescents, which promotes a heterogenous sample. We obtained a high response rate, likely because we traveled to the schools and met the students in person, and they were able to respond to the questionnaire during school hours. Considering the above-mentioned reflections, it is reasonable to believe that the results are generalizable to the population of high school elite- and recreational athletes and general high school students in Norway.

However, we do not have complete information about the non-responders and the ones who were absent from school on the day of the data collection, other than a message from the teacher that some were sick or in COVID-19 quarantine, on training camps or sport tournaments, or had a doctor/physiotherapist appointment. The theme of the study may favour those who are personally interested and want to contribute to research. As such we can speculate whether the non-responders were not interested in answering on a general basis, or if they were victims of SHA and did not want to recall their experiences. In addition, the drop out analyses showed that a higher percentage of the adolescents who participated at T1 but not at T2 had experienced SHA in the sport setting and competed at a national level compared to the participants who participated at both T1 and T2. Without further differences observed between the dropouts and the participants, we can speculate whether the dropouts terminated their participation due to an increased feeling of taboo surrounding experiences and/or consequences of SHA in the sports setting.

The comparison of two groups of athletes at different sport levels and one group of reference students was pioneering in our study. There are few previous studies in this field of research which have included non-athlete comparison groups, and only a few studies have to our knowledge

compared different groups of athletes in the same study [83, 129]. The categorization of the groups based on school affiliation was chosen due to feasibility regarding organization of the study as a school-based study in Norway and considering future perspectives for using the results to develop and implement preventive measures and educational programs. We consider such programs useful as school-based programs in terms of targeting as many adolescent athletes and students as possible. The use of the term "elite" athlete has been debated, especially among young people [130, 131]. We still chose to use the this term to correspond with previous studies in the same population in Norway [132], and the fact that more than three out of five of the elite athletes in our study already competed at a national or international level (Paper I, table I). To ease comparison between study samples in the future, it would have been useful to categorize our sample according to the recently introduced 6-tier Participation Classification Framework [131]. However, this framework was not introduced before 2022, hence it was not relevant to use in our study.

Leaders and coaches

The adult sample of leaders and coaches could answer the questionnaire whenever they had time following our visit, but only half of the invited leaders and coaches completed within the final date. In addition, leaders and coaches had to be employed at least 20% at the respective school to be included in our study. We received lists from the schools with the e-mail addresses to the leaders and coaches fulfilling this criterion. Apart from that, we did not measure their employment status directly. It is likely to believe that some coaches, especially at the elite sport high schools, were part time hired from external partners and therefore may not be as much involved in the school context. Therefore, the results for the adult sample of leaders and coaches may not be representative for full-time school employees because of the low response rate and uncertainty about their degree of involvement in the school setting.

Ethical considerations

Investigating a sensitive topic in an adolescent age group

To conduct research based on subjective perceptions and emotions is challenging. Combining it with a sensitive theme like SHA and a young age group requires precautions when planning, preparing, and conducting the study [133]. It is unlikely to expect the level of distress to be zero when doing sensitive research on human beings. However, one of the most important tasks for researchers is to organize the study to minimize the risk of harm for the participants. Our study was approved by the Regional Committees for Medical and Health Research Ethics and conducted in line with the Helsinki Declaration.

Risk of harm

Research should never expose participants to unnecessary or unwillingly discomfort [134]. The questions about SHA and the instruments measuring mental health may increase awareness about what constitutes SHA and evoke negative feelings or memories from the past. However, we considered the risk of harm to be minimal compared to the overall benefit of the study including the necessity of conducting research on sensitive topics to prevent negative situations in the future [135]. This consideration was later supported by our results showing that most of the adolescents had a positive experience of answering the questionnaire and did not find the questions uncomfortable or harmful. These results are also in line with previous research which have shown that sensitive surveys rarely cause distress in adolescents [135-137] and that the importance of conducting research about sensitive themes and the feeling of empowerment the participants were left with outweigh any distress [35, 138]. Because most studies that have examined distress are based on cross-sectional data, long-term distress after study participation is not well known. We also attained cross-sectional data by including the distress-questions in the T2 version of the questionnaire. But because the students had answered the same questionnaire one year before, we believe that potential long-term distress would have been captured in these questions in addition to current distress experienced at the time of answering the questionnaire at T2. These results from our study, and previous research [135, 136], could form a base of evidence for committees for research ethics and future studies in that sensitive studies do not seem to increase the risk of harm among

adolescents if the research design, conduction of the study , measurement methods, and support procedures are carefully prepared and followed up during the research process.

The students were informed in writing and by oral presentation about the study and their rights as participants, and thereby had the opportunity to decline if they felt uncomfortable with participating. Nevertheless, we were aware of the possibility that some participants might react to the themes and the questions, so a safety procedure was established before we started the study and was followed up during the entire study period. Contact information to the project leader and a school nurse was given in the information letter and at the end of the questionnaire. As we know that taking the first step towards getting help might be challenging, we also provided the participants with an option to mark a specific item at the end of the questionnaire if they wanted a conversation with the project leader. Thirty-two adolescents at T1 and 39 adolescents at T2 responded to this item and were contacted by the project leader. One participant at T1 and four participants at T2 were followed up by e-mail correspondence or telephone calls and referred to other health care professionals if needed. The rest of the participants responded that they did not need help after all, were already involved in a health care system, or did not respond when we contacted them. In addition, one participant took the initiative to call the research team following the T2-data collection, wanting to talk though and share her experiences with SHA victimization. If participating in a research study could guide people to seek help, personal benefits could be obtained as well. All the items in the questionnaire concerning SHA also included an optional comment box, which gave the participant a possibility to elaborate and comment upon their experiences.

Using time from the school curriculum

Prioritizing time to participate in research in an already busy school schedule is challenging. However, this study was not a time-consuming study to participate in as it only required one school hour at each time point. The only preparations necessary for the schools were to schedule a time and a suitable room and provide a list of e-mail addresses. The rest was taken care of by the research team. The schools chose themselves if they wanted use existing school subjects or use "free hours". Therefore, we considered participation in the study to be manageable for the schools. In addition, the Norwegian Equality and Anti-Discrimination Act states that "Employers and managers of organisations and educational institutions shall preclude and seek to prevent harassment and sexual harassment in their area of responsibility." (chapter two, section 13, sixth paragraph). It is also

specified in the Education Act that "The school must work continuously and systematically to promote the pupils' health, environment and safety (…)" (chapter 9A, section 3, second paragraph). All the participating schools were offered an individual report with the results from their school following T1. Thereby, participation in this study could also benefit the schools in terms of fulfilling the law requirements by using the report to initiate measures targeting areas in need for improvement at their school. However, we are not convinced that the schools have yet taken advantage of this opportunity because only 6.5% of the adolescents reported at T2 that their school had provided information or implemented measures to reduce SHA the last 12 months (following our T1-visit).

Funding sources and compensation for study participation

The Foundation Dam via The Norwegian Women's Public Health Association founded the study but were not included in the development of the study, the data collection, data analyses and interpretation, writing of the papers, or result presentation. Gift cards were randomly distributed to the students who completed the questionnaire and confirmed by a question at the end of the questionnaire that they wanted to participate in the drawing. The gift cards were intended to show our gratitude for the participants' time and effort in responding to the questionnaire, but also to increase the interest to participate in the study and consequently obtain a high response rate.

Scientific implications and future research

This study adds to the field of SHA-research by increasing knowledge about the prevalence and magnitude of SHA, possible risk factors, and elements of safeguarding in and outside sports among adolescent elite athletes, recreational athletes, and reference students. The results are important for future development of preventive measures, school interventions, and educational programs for a) adolescent athlete- and non-athlete students, b) leaders, coaches and teachers, and c) support systems surrounding adolescents in sport- and school settings.

For future research, more prospective studies with long-term follow up periods are encouraged to better understand risk factors and consequences of SHA. This will also open the possibility to examine variability and changes in perceptions and prevalence of SHA over time, long-term measures of SHA revictimization, mental- and physical health consequences, and delayed disclosure. There is also a need for consistent terminology and use of standardized instruments throughout the field of SHA-research in sport settings to increase comparability between studies. More work should therefore be conducted to validate and develop context-specific instruments. Being aware of the importance of having enough items to cover relevant situations and attain accurate prevalence rates in research [116], a short form questionnaire could be relevant in clinical screening settings and should be considered in future work with instrument development [139].

Our findings of a lower prevalence of SHA among elite athletes compared with recreational athletes and reference students calls for more research into sport-specific factors like for example differences between elite athletes' and recreational athletes' perceptions of what constitutes SHA, differences in communication styles in and outside sports between peers and between athletes and authorities, and whether the elite sport high school climate is protective of SHA or promotes a culture of silence. Future studies should also evaluate the potential impact of differences in socio-economic status.

Although we included athletes from all kinds of sports in our study, we did not investigate differences between the sport disciplines. First, it was not an aim for the papers included in this Ph.D. study to compare different sports, and second, the sample size in some of the sport categories would be too low for meaningful comparisons. However, we suggest that future research should look into differences between sport groups with the aim of better targeting possible risk groups in the future.

Furthermore, risk factor analyses stratified by type or severity of SHA, gender, school groups, and different social settings (e.g., school, sports, and free time) could add meaningful knowledge of context-specific risk factors for SHA victimization. Here, interaction between individual-, relational-, community-, and societal factors should be examined to get a better picture of combinations of factors at different levels that may put people in the sport setting at risk for SHA victimization.

Increased use of digital communication may facilitate online victimization [140]. Because we registered a reduction in physical SHA from T1 to T2 in our study, but no change in verbal- and non-verbal SH, we could speculate whether the abuse moved to online platforms during the COVID-19 lockdown [140]. More research is encouraged examining online SHA, including differences in disclosure between online SHA and SHA in real life.

As shown in our study, the prevalence of SHA and revictimization was high in both sport high schools and general high schools, hence development of context-specific interventions to prevent SHA are necessary. The school context would be effective for targeting many adolescent athletes, general students, coaches, and teachers at the same time. School-based interventions should target both individuals and the environment, including both theoretical- and active learning methods [66, 105]. Based on the results from our study, the following reflections should be considered as content when developing interventions and prevention measures:

- Differences in SHA victimization between genders and between school groups, and gender differences in risk factors for SHA victimization emphasize a need to consider gender- and context-specific measures, possibly targeting elite athletes, recreational athletes and general students differently.
- Should the intervention be given to mixed gender groups or single-gender groups? As suggested by participants in the interview part of our study, mixed-gender groups could facilitate interaction and communication between genders which again may increase understanding of each other's perspectives and perceptions of possible SHA situations [78].
- Interventions should challenge norms, stereotypes, and attitudes towards SHA and disclosure of SHA among students, both from a perpetrator and a victim perspective, but also among coaches, and other employees in school [66].

- Interventions should target mental health as risk factors for SHA victimization and equip adolescents with tools to cope and deal with negative experiences, e.g., communication skills, setting boundaries, and emotion regulation skills [66].
- Concerning our finding that peers were the most frequently reported perpetrators, and that the adolescents who reported SHA perpetration were also victims of SHA themselves, interventions should target both the role as a victim and a perpetrator.
- Training in peer support is also of utmost importance because peers were the primary choice of disclosure for adolescents [12].

Practical implications and societal impacts

This study explored a time-relevant and global topic of interest for various fields of research and social practices. The welfare and safety of young athletes and non-athletes should be the number one priority both in sports and in school settings. Learning about SHA could be incorporated in the high school curriculum for students, as also suggested by students in the interview part of our study [78]. Today, a few high school subjects in Norway have leaning aims incorporating harassment and abuse and associated consequences, like law studies and social studies. However, these are elective subjects. Considering the multidisciplinarity of harassment and abuse, this topic would be relevant to incorporate in other subjects as well, like religion and ethics, psychology, community studies, communication and culture, media and information knowledge, and politics and human rights. Some sport-specific high school subjects would also be relevant for including SHA, like sports and society, sports management, and leadership development.

As mentioned in the theory part of this dissertation, Norwegian elite sport high schools have specific requirements for approval of their dual career high school practice where creating a stimulating environment with mastery and development in focus is one of the requirements [17]. Here, prevention of SHA and other abusive behaviours should be a point of focus, prepared according to safe sports recommendations [1, 44]. Furthermore, adolescents may be influenced by the behavior and attitudes of significant others [1, 100]. This emphasizes the importance of including SHA and mental health in education of coaches, teachers, and others working with adolescents and young athletes [66]. In addition, learning about adolescent development, risk factors for SHA, and symptoms of SHA victimization and mental health problems may help to detect

affected adolescents in an early phase, and possibly contribute to prevent revictimization and long-term consequences [1, 141].

The concerning low rate of disclosure and awareness about report- and support resources in this study emphasize the need to focus on the organizational level, making sure policies are in place at the schools. However, the policies must be reflected in the school climate, and be properly informed to teachers, coaches, and students [66, 112]. A passive organizational culture may promote normalization of unacceptable behaviors and a culture of silence [1]. Therefore, efforts should be directed towards lowering barriers for help-seeking and disclosure. A systematic review concluded that the optimal condition for disclosure of SHA in children and adolescents was being asked directly [12]. Regular questionnaires or screenings of students' experiences with SHA may be valuable [30], with the underlining requirement of a well-qualified support system to take care of those disclosing their experiences. Furthermore, adolescent user involvement may be an important resource for creating well-targeted measures for the adolescent age group, also reflected in our findings that only half of the students would use the support system currently available in school.

Conclusions

Overall, based on the main findings from this study, it can be concluded that the high prevalence of SHA victimization and SHA revictimization among adolescent elite athletes, recreational athletes, and reference students calls for well-targeted preventive measures. Focus should be directed to increase information about SHA and the scope of the problem in general, manage risk factors, and increase safeguarding efforts in school to lower barriers for help-seeking.

More specifically, based on each paper, it can be concluded that:

Paper I: The high prevalence of 12-month SHA victimization among adolescent elite athletes, recreational athletes, and reference students highlight the need for well-targeted preventive measures. Gender differences in SHA victimization, the types of SHA experienced, and perpetrator characteristics should be considered when developing upcoming preventive measures. Further research is needed to examine why elite athletes reported less SHA than recreational athletes and reference students. Most adolescents reported no change in SHA victimization during a 12-month period, but a significant decrease of reported SHA victimization was found in the school and sport setting over the same time period, most likely influenced by the COVID-19 lockdown.

Paper II: Half of the adolescents with lifetime experience of SHA reported revictimization. Significant risk factors for SHA victimization were the combination of being a girl with high level of symptoms of eating disorders and other psychological health problems. These results are important knowledge for future development of programs to prevent SHA among adolescents. Further examination of risk factors for boys, and a replication of analyses including a history of SHA as a potential risk factor for subsequent SHA victimization are needed.

Paper III: The awareness of report- and support resources in school was satisfactory among school leaders but limited among coaches and adolescents. Only one in five adolescents who reported lifetime experience of SHA had disclosed their experiences to someone, with peers being the primary source of disclosure. These results highlight a need for institutional effort to increase information about report- and support resource available in school, practice use of the system, and lower barriers for disclosure and help-seeking.

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Papers and appendices

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Paper I

OPEN

Sexual Harassment and Abuse among Young Elite Athletes, Recreational Athletes, and Reference Students: A Prospective Study

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[1]*Department of Sports Medicine, The Norwegian School of Sport Sciences, Oslo, NORWAY;* [2]*Department of Sport Science and Physical Education, Faculty of Health and Sport Science, University of Agder, Kristiansand, NORWAY;* [3]*Department of Psychology, UiT—The Arctic University of Norway, Tromsø, NORWAY; and* [4]*Department of Health and Care Sciences, UiT—The Arctic University of Norway, Tromsø, NORWAY*

ABSTRACT

SØLVBERG, N., M. K. TORSTVEIT, J. H. ROSENVINGE, G. PETTERSEN, and J. SUNDGOT-BORGEN. Sexual Harassment and Abuse among Young Elite Athletes, Recreational Athletes, and Reference Students: A Prospective Study. *Med. Sci. Sports Exerc.*, Vol. 54, No. 11, pp. 1869–1878, 2022. **Purpose:** This study aimed to examine the 12-month prevalence and 12-month prospective change in reported sexual harassment and abuse (SHA) victimization among young elite athletes, recreational athletes, and reference students in three different social settings and to identify the perpetrators. **Methods:** In total, 919 adolescents responded to an online questionnaire in 12th grade (T1) and 13th grade (T2). The sample consisted of elite athletes (n = 482) and recreational athletes (n = 233) attending Norwegian elite sport high schools (n = 26), and reference students (n = 200) attending ordinary high schools with no sport specialization (n = 6). Data were analyzed using independent-sample t-test, Pearson χ^2 for independence/Fisher's exact test, McNemar test, and logistic regression analysis. **Results:** The total 12-month prevalence of SHA was 38.6% at T1 and 35.1% at T2. Most of the participants (74.6%–85.0%) reported no change in SHA from T1 to T2. The prevalence of SHA was higher for girls compared with boys, and elite athletes reported less SHA than recreational athletes and reference students, respectively. SHA occurred most often in a free time setting. Verbal sexual harassment, nonverbal sexual harassment, and physical SHA were reported by 24.6%, 27.0%, and 14.0%, respectively. Peers were reported as perpetrators by 83.1%, trainer/teacher/health personnel by 20.1%, and "other" perpetrators by 56.4%. **Conclusions:** Because one in three elite athletes and nearly one in two recreational athletes and reference students, respectively, reported SHA victimization within a 12-month period, well-targeted preventive measures are needed for both young athletes and nonathletes. **Key Words:** ADOLESCENTS, CONTROLS, PERPETRATORS, PREVALENCE, SEXUAL VIOLENCE, SPORT

Sexual harassment (SH) and sexual abuse (SA), also referred to as sexual violence, sexual harm, or sexual harassment and abuse (SHA), violate personal rights and may have severe and long-term physical, psychological, social, and performance-related consequences (1). Despite no universal definition (1,2), there is a general agreement that SHA is based on a subjective experience of a situation as uncomfortable and asymmetric in terms of power, and as unwanted in terms of actions (1,3). SHA may take form as verbal SH (e.g., sexual comments, jokes, and invitations), nonverbal SH (e.g., sexual glances, sexual gestures, and display of sexual pictures), or physical behaviors (e.g., hugging, physical touching, forced sexual activity, and rape) (2,4,5). Verbal and nonverbal behaviors have been most frequently reported (6,7).

SHA may occur among athletes of all ages, genders, and within all sports and performance levels. Female athletes have generally reported more SHA victimization than male athletes (8–10), but victimization among males has long been understudied and possibly underreported (10,11). In addition, young athletes, ethnical and sexual minority athletes, disabled athletes, and elite-level athletes are considered to be at increased risk (1,9,10,12). Suggested explanations for the increased risk among athletes are sport-specific factors like the power imbalance in a close and authoritarian coach–athlete

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relationship; compliance to dominant sport values like playing through illness and injuries; lack of rules and regulations for SHA; trips away from home; one-to-one sessions with authorities like trainers, physiotherapists, and doctors; high focus on the body; and constantly pushing boundaries in training and competition (1,3,10,13–15). Only two previous studies in young athletes have included a nonathlete reference group (8,16), and no studies have compared athletes at different levels and a reference group in the same study. This indicates the need for more studies to explore the notion that SHA occurs more often among elite athletes. Besides, more SHA victimization among athletes is reported outside sports compared with inside sport (3,17,18), but studies comparing the sport setting with different social contexts outside sports are lacking.

Previous research on SHA has also focused on the coach–athlete relationship and the stereotypical male perpetrator–female victim relationship (11,14,16,19). However, peers are also highlighted as possible perpetrators and seem to be the source of perpetration more often than coaches (7,17,20). There is still limited knowledge regarding who the perpetrators of SHA in sports are and the distribution of same-gender versus cross-gender harassment, especially for young elite athletes.

The overall lifetime prevalence of SH and SA in sports is reported to be between 19% and 92% and between 2% and 49%, respectively (1). Among male and female elite athletes or adolescents involved in organized sports (recreational athletes) under 20 yr, lifetime prevalence of SH/sexual violence varies between 14% and 46% (7,10,12,16,21,22) and between 2% and 10% for SA/sexual harm (7,8,12,23,24). Among young nonathletes, the prevalence of peer SH is reported to be between 40% and 85% (4). The large ranges in prevalence rates may be accounted for by methodological differences like, for instance, instrumentations, definitions, sample size, and characteristics, as well as research designs (10,12,13,25). To our knowledge, only one study among athletes is published where researchers examined 12-month prevalence of SH and reported a prevalence rate of 0.4% (8). Twelve-month prevalence is important to examine to increase knowledge about SHA victimization at arenas where athletes are currently active. Moreover, there is conflicting evidence in prospective studies among young nonathletes, with a time frame of up to 1 yr, whether they experience an increase in SH victimization (26), a slight decrease (27), or stable prevalence rates (28). To our knowledge, there are no prospective prevalence studies among athletes.

Prevention of SHA among athletes has been requested (1). However, to develop effective programs, we need more research related to the prevalence of SHA among young athletes at different levels, both in sports and in other social settings; who the perpetrators are; and whether there is a change in reported SHA over time. Therefore, the purpose of this study was to examine the 12-month prevalence and 12-month prospective change in reported SHA victimization, and identify the perpetrators of SHA among young elite athletes, recreational athletes, and reference students in three different social settings (i.e., in school, sports outside school, and free time). Based on existing literature, we hypothesized that the prevalence of SHA is higher 1) among girls compared with boys, 2) among elite athletes compared with recreational athletes and reference students, and 3) in the school setting and during free time than in the sport setting. Furthermore, we hypothesized 4) that verbal and nonverbal SH are more common than physical SHA, 5) that peers are the most frequently reported group of perpetrators, and 6) that there is no change in SHA from 12th to 13th grades.

METHODS

Research design. The research design was a prospective cohort study with two measurement points 1 yr apart, T1 and T2.

Procedure. All private and public elite sport high schools in Norway verified by the Norwegian Olympic and Paralympic Committee and Confederation of Sports as per September 2018 ($n = 32$) were invited to participate in the study. Norwegian elite sport high schools have specially designed educational programs where only well-qualified athletes get accepted based on standardized assessment of former academic and sport performance results, motivation for dual careers (combining education and sports), long-term sports-related goals, ability to conduct good quality training, and knowledge about what it requires to be a high-level performing athlete. The athletes who got accepted to these schools were defined as elite athletes in our study. Eleven of these schools also offered sport-specific educational programs for lower-level athletes, defined as recreational athletes in this study. As a reference group, all private and public ordinary high schools with no sport specialization in the county Buskerud were invited to participate ($n = 14$). In addition, a randomly selected sample of ordinary high schools with no sport specialization, based on geographical availability, from the counties Oslo, Akershus, and Østfold ($n = 13$) were invited. Students attending ordinary high schools were defined as reference students in this study. At T1, school visits were organized with each consenting school between October 2019 and May 2020. All classes received a short presentation about the project before the students answered an online questionnaire. The questionnaire was created in the Web-based system SurveyXact offered by Ramböll, Aarhus, Denmark. One or two project group members were present in the classroom to answer questions and safeguard the students. All students, whether they chose to participate or not, were encouraged to remain in the classroom and do other schoolwork on their computer/iPad after completing the survey. The procedure was repeated with the same sample at T2 between October 2020 and March 2021. All eligible students were invited to T2 regardless of participation at T1.

Digital procedure during COVID-19. All Norwegian schools closed March 12, 2020, because of the COVID-19 pandemic, and for this reason, five schools attended T1 project meetings through Skype for Business (Microsoft, Redmond, WA) or Teams (Microsoft), yet with no change in the procedure for answering the questionnaire. This digital procedure

continued throughout T2, except one school, which received a physical visit at T2.

Participants. In total, 1587 elite athletes, recreational athletes, and reference students in 12th grade, over 16 yr of age, were invited to T1, and 1666 were invited to T2. The participants who responded to both T1 and T2 were included in the analyses ($n = 919$; Fig. 1). The results for the nonbinary gender participants were described separately because there were few participants ($n = 4$). Unequal number of invited students at T1 and T2 was due to individuals who changed or quit school between T1 and T2, and one elite sport high school withdrew from T2. In addition, 150 reference students were invited to T2 only because of difficulties organizing the T1 data collection because of restrictions related to the onset of the COVID-19 pandemic. The response rates in percent at T1 were 83.8, 88.6, and 62.4 for the elite athletes, recreational athletes, and reference students, respectively. At T2, the response rates were 78.0%, 88.0%, and 80.5%, respectively.

Instruments. Apart from self-generated questions about demographics, training, and sport performance, the questions regarding SHA were adapted from earlier research (16). Validated instruments measuring psychological health parameters were also included in the questionnaire battery, but not presented in this article. The questionnaire battery took 30–40 min to complete. The questions were formulated to fit the age of the participants and piloted in a sample of adolescents attending elite sport and ordinary high schools, not relevant for inclusion in the final study. Minor wording adjustments and exemplifications were done after the piloting, and response options were added to the items covering living situation and immigration status.

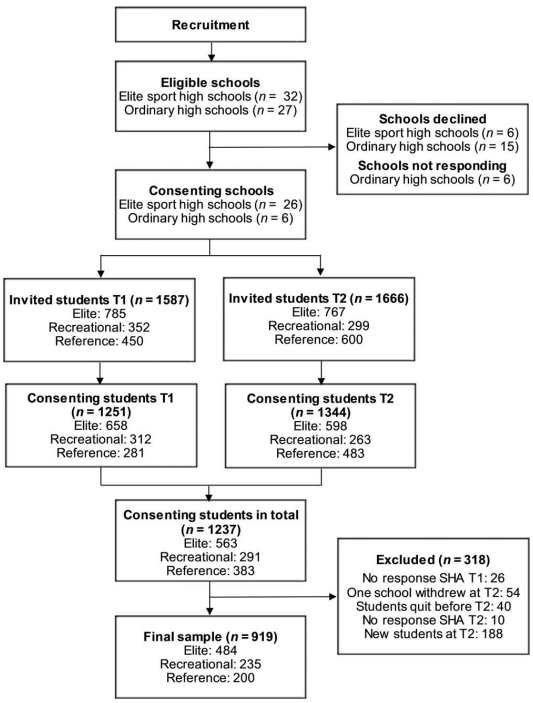

FIGURE 1—Flowchart of the recruitment of schools and participants in the study. Note: A higher number of reference students were invited at T2 ($n = 600$) compared with T1 ($n = 450$) because of restrictions related to physical meetings and the sudden change to distance school at the end of T1, as a result of the onset of the COVID-19 pandemic.

Sexual harassment and abuse. The definition of SH from the Norwegian Equality and Anti-Discrimination Act (§13) was presented in an introductory text in the questionnaire: "Sexual harassment means any form of unwanted sexual attention that has the purpose or effect of being offensive, frightening, hostile, degrading, humiliating or troublesome," followed by 13 questions covering the spectrum of SHA from unwanted sexual experiences to SA. The questions were answered dichotomously (no/yes). Positive answers were followed by questions about where it happened. "In school" included school hours like theoretical classes and training, or arrangements related to school such as training camps, travels, and graduations." Sports outside school" covered club training, free training, fitness center, and others, and "free time" included work and time with family and friends. Additional follow-up questions covered when it happened (last 12 months or lifetime), frequency (one time, a few times, or often/regularly), and relation to and gender of the perpetrator. For analytic purpose, perpetrators were categorized as peers (friends/classmates/teammates), trainer/teacher/health personnel, and "others" (family members, employer, others). The term "perpetrator" was used to explain the source of victimization, independent of severity or type of SHA. A single item also addressed whether the participant believed that he/she had sexually harassed others. At T2, the same questions were presented with a time frame of the last 12 months. A threshold measure was used to examine the 12-month prevalence of SHA, that is, reporting at least one experience of verbal, nonverbal, or physical SHA during the last 12 months (16). SHA was further categorized into three categories by summing the items representing verbal SH, nonverbal SH, and physical SHA, respectively. Verbal SH included unwanted sexual comments/remarks, sexual approaches/favors, and having sexual rumors spread about oneself. Nonverbal SH included unwanted sexual staring/glances, being showed sexual pictures, having sexual pictures/videos spread of oneself, indecent exposure, persecution, and humiliating/degrading treatment. Physical SHA included unwanted physical contact, coerced sexual act, rape, and attempt at rape (4,5). All results reflect subjectively reported SHA victimization.

Statistical analyses. Power calculation for sample size estimation was not performed because of the aim to capture the total population of Norwegian elite athlete students. Data were analyzed using SPSS version 24 (IBM, Armonk, NY). Complete-case analyses were used because of a small percentage of missing data, <5% on relevant variables (29), and a large sample size. For continuous data, differences between boys and girls were analyzed using independent-sample t-test. Pearson χ^2 for independence and Fisher's exact test were

used to analyze differences in categorical data. McNemar test for paired nominal data was used to analyze changes from T1 to T2. Results were presented as mean and SD or number and percentages and considered statistically significant if $P \leq 0.05$. Logistic regression analyses adjusted for clustering were used to compare the social settings, type of SHA, and group of perpetrators, respectively, as participants were able to report several answers within the different social settings, types of SHA, and perpetrators. Results were presented as odds ratio (OR) with 95% confidence interval (CI).

Ethics. The study was approved by the Regional Committees for Medical and Health Research Ethics (No. 8673) and The Norwegian Center for Research Data (No. 960987), and registered in Clinical Trials (NCT04003675). In accordance with the Helsinki Declaration, participation was voluntary, and informed consent was obtained from all participants. The students were informed about their right to withdraw from the study at any time without the need to provide any reason or explanation and ensured that this would not cause any negative consequences. One hundred gift cards were randomly distributed among the participants after each testing period. All data were deidentified. Because of the sensitive nature of the study, the participants were encouraged to contact the project leader or the school nurse if they felt affected by the content in the questionnaire or needed to talk to someone. They could also respond to a specific questionnaire item requesting a follow-up conversation, thereby giving the project leader consent to contact them.

RESULTS

The total gender distribution was 48.6% boys, 50.9% girls, and 0.4% ($n = 2$ elite athletes and $n = 2$ recreational athletes) reported nonbinary gender. Eight percent of the participants were first- or second-generation immigrants, 77.3% lived with one or two parents, and 96.6% reported a heterosexual orientation. The participants involved in competitive sports represented 52 different type of sports. Additional sample characteristics are presented in Table 1.

The total 12-month prevalence of SHA in any setting was 38.6% at T1 and 35.1% at T2. Girls had a higher prevalence of SHA compared with boys at T1 (47.6% vs 29.1%, $P \leq 0.001$) and T2 (47.4% vs 22.1%, $P \leq 0.001$). The prevalence of SHA was lower for the elite athletes (32.2%) compared with the recreational athletes (46.6%) and the reference students (47.0%) at T1 ($P \leq 0.001$) and T2 (28.0%, 39.5%, and 47.0%, respectively; $P \leq 0.001$; Table 2).

The prevalence of SHA was lower among the elite athletes than among the recreational athletes in the school setting (T1: $P = 0.002$ and T2: $P \leq 0.001$) and lower among the elite athletes compared with the recreational athletes and the reference students, respectively, in the free time setting (T1 and T2: $P \leq 0.001$). In the sport setting, the prevalence of SHA was lower among the reference students compared with the elite and recreational athletes, respectively (T1 and T2: $P \leq 0.001$; Table 2). The OR values for reporting SHA were 1.88 times higher in school compared with the sport setting (95% CI, 1.6–2.2), 2.56 times higher during free time compared with the sport setting (CI, 2.1–3.1), and 1.36 times higher in free time compared with the school setting (95% CI, 1.2–1.6). At T2, the OR values were 1.5 (95% CI, 1.2–1.9), 3.8 (95% CI, 3.1–4.7), and 2.5 (95% CI, 2.1–2.9), respectively.

Among the nonbinary athletes, three out of four reported SHA at T1 in the school setting and two out of four in the free time setting. At T2, one nonbinary athlete reported SHA in all three settings.

In total, 6.1% of the participants (T1: 10.1% boys and 2.4% girls, $P < 0.001$) admitted having sexually harassed others in their lifetime. Of these, 60.7% reported experiences of SHA themselves.

Verbal SH was reported by 24.6% of the total sample, nonverbal SH by 27.0%, and physical SHA by 14.0%. The OR values for reporting verbal SH and nonverbal SH, respectively, at T1 were 2.0 (95% CI, 1.6–2.4) and 2.3 (95% CI, 1.9–2.7) times greater than reporting physical SHA. For more details, see Figure 2.

Among those who reported experience of SHA the last 12 months, peers were reported as perpetrators by 83.1%, trainer/teacher/health personnel by 20.1%, and "other" perpetrators by 56.4%. Compared with trainers, the OR for reporting peer perpetrators was 17.3 (95% CI, 12.0–24.8), and the OR for "other" perpetrators was 5.1 (95% CI, 3.7–7.2). The OR

TABLE 1. Baseline sample characteristics presented as numbers (percentages) or mean (SD) for male and female elite athletes, recreational athletes, and reference students.

	Elite Athletes ($n = 482$)		Recreational Athletes ($n = 233$)		Reference Students ($n = 200$)		Total ($n = 915$)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Gender distribution, *n* (%)	246 (51.0)	236 (49.0)	135 (57.9)	98 (42.1)	66 (33.0)	134 (67.0)	447 (48.9)	468 (51.1)
Age, yr	17.1 (0.5)	17.0 (0.4)	16.9 (0.4)	16.9 (0.3)	17.3 (0.5)	17.2 (0.5)	17.1 (0.5)	17.1 (0.4)
Training per week, sessions	10.5 (3.0)***	9.5 (2.5)***	9.4 (3.2)	8.8 (3.7)	3.9 (2.7)*	5.1 (3.3)*	9.2 (3.7)***	8.1 (3.6)***
Training per week, h	16.7 (5.3)*	15.4 (5.7)*	15.9 (6.4)**	13.7 (5.2)**	6.8 (6.0)	6.9 (5.3)	15.0 (6.7)***	12.6 (6.6)***
Competitive sport, *n* (%)	241 (98.0)	228 (96.6)	107 (79.3)	71 (72.4)	13 (19.7)	32 (23.9)	361 (80.8)***	331 (70.7)***
Level of competition[a]								
Club, *n* (%)	24 (10.0)	34 (14.9)	43 (40.2)	33 (47.1)	3 (23.1)	14 (43.8)	70 (19.4)	81 (24.5)
Regional, *n* (%)	61 (25.3)	55 (24.1)	31 (29.0)	24 (34.3)	4 (30.8)	6 (18.8)	96 (26.6)	85 (25.8)
National, *n* (%)	130 (53.9)	104 (45.6)	27 (25.2)	10 (14.3)	5 (38.5)	7 (21.9)	162 (44.9)	121 (36.7)
International, *n* (%)	26 (10.8)	35 (15.4)	6 (5.6)	3 (4.3)	1 (7.7)	5 (15.6)	33 (9.1)	43 (13.0)

[a]Percentage among those involved in a competitive sport, $n = 1$ missing ($n = 691$).
*Significant gender differences: $P \leq 0.05$.
**Significant gender differences: $P \leq 0.01$.
***Significant gender differences: $P \leq 0.001$.

TABLE 2. Twelve-month prevalence (%) of SHA victimization among elite athletes, recreational athletes, and reference students in different social settings (school, sports outside school, and free time).

	Elite Athletes			Recreational Athletes			Reference Students			Total		
	Total (n = 482)	Boys (n = 246)	Girls (n = 236)	Total (n = 233)	Boys (n = 135)	Girls (n = 98)	Total (n = 200)	Boys (n = 66)	Girls (n = 134)	Total (n = 915)	Boys (n = 447)	Girls (n = 468)
School[a]												
T1	**18.9**	15.9	22.0	**30.9**	28.9	33.7	24.0	30.3	20.9	23.1	21.9	24.1
T2	**11.0**	6.5***	15.7***	**21.5**	14.8**	30.6**	17.5	16.7	17.9	15.1	10.5***	19.4***
Sports outside school[b]												
T1	**13.9**	13.0	14.8	**21.1**	19.4	23.5	**5.0**	1.5	6.7	13.8	13.2	14.3
T2	10.2	7.3*	13.1*	15.9	11.1*	22.4*	**4.5**	3.0	5.2	10.4	7.8*	12.8*
Free time[c]												
T1	**22.3**	13.8***	31.2***	33.6	26.9*	42.9*	40.0	22.7***	48.5***	29.1	19.1***	38.6***
T2	**24.5**	12.6***	36.9***	33.0	23.0***	46.9***	42.5	18.2***	54.5***	30.6	16.6***	44.0***.
Any setting												
T1	**32.2**	23.2***	41.5***	46.6	37.8*	54.1*	47.0	33.3**	53.7**	38.6	29.1***	47.6***
T2	**28.0**	17.1***	39.4***	39.5	28.9***	54.1***	47.0	27.3***	56.7***	35.1	22.1***	47.4***

The participants were able to report SHA in multiple settings. Bold print indicates significant difference between the elite, recreational, and reference groups ($P \leq 0.001$; school setting T1: $P = 0.002$).
[a]School = time spent at school/in class and/or events arranged by the school (e.g., graduations, training camps, excursions etc.).
[b]Sports outside school = training with a club, training center, self-arranged trainings etc. (missing at T1: $n = 1$ recreational athlete).
[c]Free time: at work, with friends, family etc. (missing at T1: $n = 2$ elite, $n = 1$ recreational athlete).
*Significant gender difference within groups: $P \leq 0.05$.
**Significant gender difference within groups: $P \leq 0.01$.
***Significant gender difference within groups: $P \leq 0.001$.

for reporting peers compared with "others" was 3.4 (95% CI, 2.2–5.0).

Boys reported more peer perpetrators compared with girls (92.3% vs 74.9%, $P \leq 0.001$), and girls reported more "other" perpetrators compared with boys (65.5% vs 40.8%, $P \leq 0.001$). No gender difference was found for trainer/teacher/health personnel as perpetrators (23.8% vs 17.9%, $P = 0.182$). For more details, see Figure 3.

Boys and girls reported mainly male peer perpetrators exclusively or peers of both genders (Figs. 4A–C). In the group of trainers/teachers/health personnel, male perpetrators were most frequently reported. In the "others" category, boys reported more SHA from female "others" compared with girls ($P = 0.004$ in school, $P \leq 0.001$ in sports and free time), and girls reported more SHA from male "others" compared with boys ($P \leq 0.001$ in sports and free time). Because of low number of participants in some groups, the assumptions for Pearson χ^2 test were not met for the trainer/teacher/health personnel and "others" category, and the results concerning gender of the perpetrator are therefore uncertain for these categories.

The majority of the participants reported no change in SHA from T1 to T2 (74.6%–85.0%). McNemar test revealed a significant decrease in SHA from T1 to T2 in the school setting ($P \leq 0.001$) and the sport setting ($P = 0.008$), but no change in the free time setting ($P = 0.428$; Fig. 5). No change was found in verbal SH ($P = 0.075$) or nonverbal SH ($P = 0.456$), but the prevalence of physical SHA decreased from T1 to T2 ($P = 0.015$).

DISCUSSION

The aims of this study were to examine the 12-month prevalence and 12-month prospective change of reported SHA among young Norwegian elite and recreational athletes and reference students in three different social settings, and identify the perpetrators of SHA. In total, girls reported more SHA than boys, and elite athletes reported less SHA than

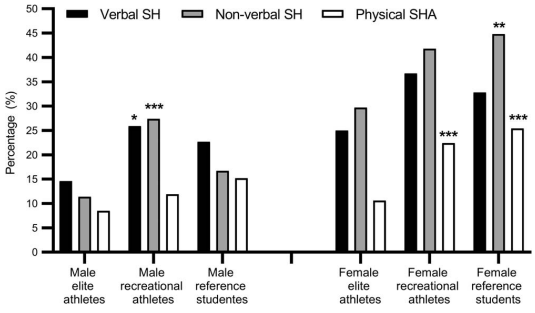

FIGURE 2—Twelve-month prevalence (%) of verbal, nonverbal, and physical SHA for male and female elite athletes, recreational athletes, and reference students at T1. n = 915. Missing nonverbal SH: n = 1 boy and 6 girls. Missing physical SHA: n = 2 boys and 9 girls. Significantly different from the elite group within gender and type of SHA: *$P \leq 0.05$, **$P \leq 0.01$, ***$P \leq 0.001$.

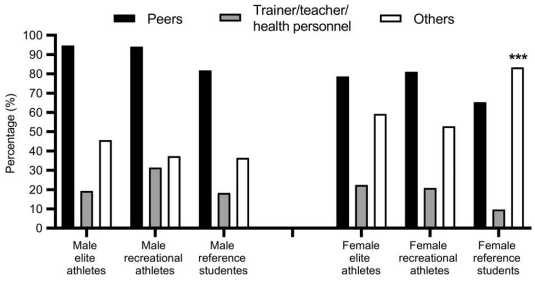

FIGURE 3—Perpetrators of SHA reported by male and female elite athletes, recreational athletes, and reference students having experienced SHA the last 12 months at T1. The data are presented as percentages (%). n = 353. Significantly different from the elite and recreational athletes within gender and group of perpetrators: ***$P \leq 0.001$. Note: The respondents were able to report multiple perpetrators.

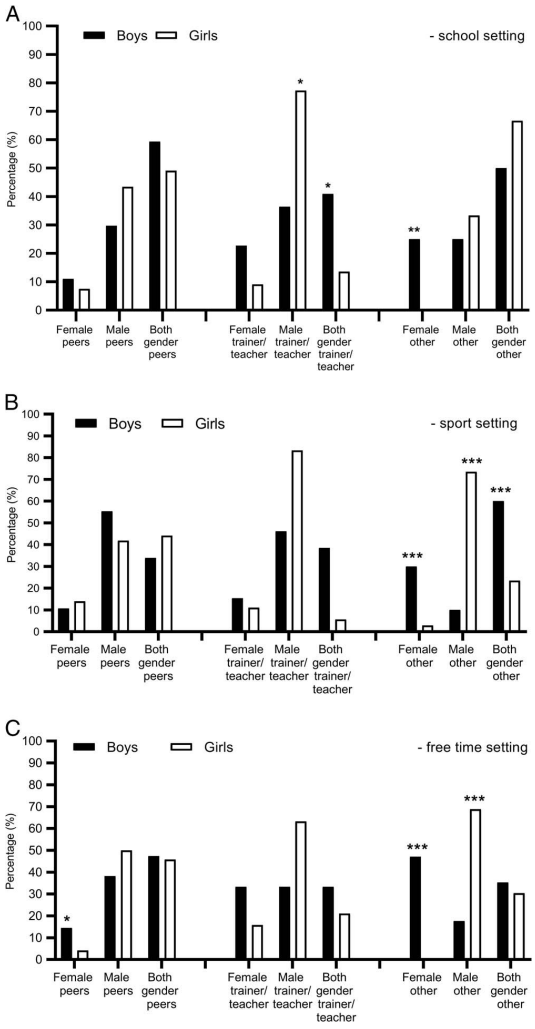

FIGURE 4—A–C, Gender of perpetrators of SHA in the school setting (A), sport setting (B), and free time setting (C) at T1. The data are presented as percentages (%) for male and female victims. n = 28–197 depending on group of perpetrators. Significant difference between boys and girls within each group of perpetrators: ***$P \leq 0.001$, **$P \leq 0.01$, *$P \leq 0.05$. Note: The respondents were able to report multiple perpetrators in each setting.

recreational athletes and reference students, respectively. SHA occurred most often in the free time setting, verbal and nonverbal types of SH were most common, and peers were the most frequently reported perpetrators. Most of the participants reported no change in SHA from T1 to T2.

Twelve-month prevalence. Our findings that about one out of three elite athletes and nearly one out of two recreational athletes reported experience of SHA within the last 12 months before T1 is alarming, and much higher than the only comparable study measuring 12-month prevalence of SH in youth-organized sports (8). In that study, only SH from coaches as perpetrators was examined and only three questions assessed SH victimization. In contrast, we included all perpetrators and 13 questions covering the entire spectrum of SHA, which likely results in higher prevalence rates in our study.

The fact that one out of two reference students in our study reported experience of SHA the last 12 months is comparable to international studies including nonathlete high school students (30,31), but lower than reported in a Norwegian study (32). However, our results showed a higher prevalence rate among the reference students compared with other studies measuring 12-month prevalence in nonathlete high school students (33,34). Bakken (33) and Clear et al. (34) included just three questions assessing SH, and Clear et al. (34) used a strict measurement only counting experiences that occurred three or more times, possibly contributing to lower prevalence rates compared with our study.

As hypothesized, verbal SH and nonverbal SH were the most common types of harassment reported in our study, similar to findings from other studies among athletes (6,7) and nonathletes (31). The fact that three out of four nonbinary athletes reported SHA at T1 corresponds to findings in previous studies showing higher SHA victimization among minority groups (6,10). Nonbinary athletes might be extra vulnerable to SHA because of minority stressors like feelings of being inferior and not fitting into a heteronormative society, which might be especially prominent in sports (9).

Gender differences. Without considering which setting the harassment took place, our finding that a higher percentage of girls reported SHA compared with boys supports hypothesis 1 and is comparable to other studies in young athletes (7,25) and young nonathletes (31,33,34). Despite the historical point of view that girls report more SHA than boys, researchers have recently questioned if this gender difference mirrors the true situation, or whether it may be due to underreport and taboo of disclosure among boys (10), or different

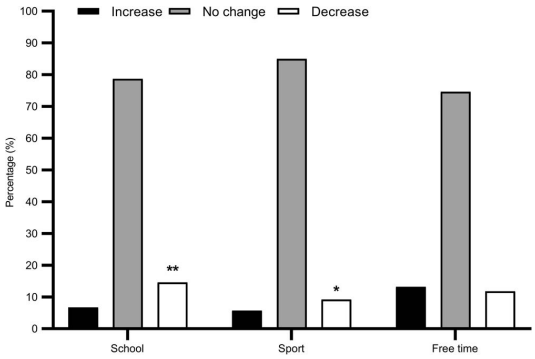

FIGURE 5—Change in SHA victimization in the school, sport, and free time settings from T1 to T2. Increase signifies no experience of SHA at T1 but experience of SHA at T2. Decrease signifies experience of SHA at T1, but no experience of SHA at T2. The data are presented as percentages (%). n = 915. Missing: n = 1 in sport setting, n = 3 in free time setting. Significant change within each social setting: *$P \leq 0.01$, **$P \leq 0.001$.

perceptions regarding what constitutes SHA and its consequences (5,9). Boys may perceive the situation as less harmful than girls and thereby not report it (35). Others have argued that girls may worry that sexual teasing and SH from boys can lead to more harmful behaviors like SA, and feel more threatened or affected by such behaviors, thereby reporting more SHA than boys (36). At the other side, the fact that no gender differences in SHA were found in the school and sport settings at T1, but girls had a higher prevalence of SHA in the free time setting at T1, supports Bendixen and Kennair's (37) considerations that girls seem to have a positive effect of adults' presence and protectiveness. Adult appearance operates more in school and sports than during the adolescents' free time. Other studies in young athletes (12,24) and young nonathletes (32) did not find any difference in the prevalence of SHA between boys and girls.

School groups. Contrary to our second hypothesis, we found a lower prevalence of reported SHA among elite athletes compared with recreational athletes and reference students, respectively. In a former Norwegian study among adult female elite athletes, lifetime prevalence of SHA was significantly lower in elite athletes compared with controls, but no difference in the age group of 15–18-yr-olds (18). Because there was no difference in reported SHA victimization between the recreational athletes and the reference students in our study, we speculate whether aspects related to elite sports might serve as protective factors and strengthen the elite athletes' resilience toward SHA victimization (18,38) rather than operating as a risk factor for SHA as suggested in the literature (1). The elite athletes may benefit from increased self-esteem and self-confidence after high-level sport performances, increased physical and mental strength, and having the possibility to practice their sport at a daily basis implemented in their educational program (18,39). On the other hand, in the pursuit of top-level performance, it has been argued that elite athletes socialize into a culture of tolerance and normalization of unacceptable behaviors like SHA (6,14,16) possibly leading to underreport of SHA among active elite athletes (16). Exemplified with the systematic abuse by Dr. Larry Nassar in the United States, the elite sport culture failed to protect gymnasts from SA as a consequence of various cultural and structural factors like inadequate policies, misuse of power in authoritarian relationships, and ignorance of athletes' voices and needs (40,41).

Settings. The fact that the OR for reporting SHA was higher in the school and free time settings compared with the sport setting supports our third hypothesis and the statement from Fasting et al. that "(…) the sport arena is not as risky as originally thought for sexual harassment to occur (…)" (39, p. 126). Higher victimization rates outside the sport setting compared with inside sports have also been highlighted in other studies among athletes (3,17,18). During free time, peers spend time together without adult supervision. This may be one factor, among others, possibly explaining the higher prevalence of SHA victimization in the free time setting in our study as perpetrators commonly seek environments with minimal supervision (1,35). In the sport setting outside school, especially in organized sports, athletes practice and travel together and have adults present as trainers, leaders, or parents most of the time. Given that the perpetrator is not a peer athlete or a person in the entourage, this social support may reduce the risk of SHA. The participants were provided with descriptions and examples of the school, sport, and free time settings, respectively. However, it should be noted that the school setting includes many hours of training and sport arrangements for the elite athletes, emphasizing that SHA reported in the school and sport settings may intermingle for the elite athletes.

The fact that the reference students in our study spent less time playing sports than the athletes, and thereby have less time for possible SHA exposure in the sport setting, may contribute to explain our finding that the reference students had a lower prevalence of SHA in the sport setting compared with the elite and recreational athletes. Similarly, we expected a lower prevalence of SHA in the free time setting among the elite athletes compared with the recreational athletes and reference students, bearing in mind that athletes spend most of their free time in a sport setting (18). These results give further support to earlier findings suggesting that values learned in elite sport might also be beneficial as protection against SHA in other context in life (18).

Perpetrators. As hypothesized, peers were reported as perpetrators to a much higher degree than trainers/teachers/health personnel and "others." This is in line with the shift from a general belief of coaches and authority figures as perpetrators of SHA toward increased attention to peers as perpetrators in sports (6,7,10,24) and in the general society (31,35). However, there is no reason to reduce the awareness of SHA from authorities because one-fifth of the participants also reported SHA from a trainer/teacher/health personnel, and the perceived severity is found to increase when the perpetrator is an authority figure (20). The fact that boys were more likely to report peers as perpetrators compared with girls, mainly peers of male gender or both genders, might be due to a "boys will be boys" culture where especially verbal harassment including homophobic remarks and sexual comments are common (42). Girls may be more vulnerable to attention from "others," often of male gender as reflected in our results, with a purpose of showing sexual interest, treating girls as sexist objects, or as a result of boys' perception of power over girls (30,43). This power dynamics is central in describing a victim–perpetrator relationship related to SHA. Peers with high social status and successful coaches or other authorities might misuse their hierarchical position of power to show dominance over less powerful and vulnerable people. For male perpetrators, maintaining the normative heterosexual and masculine values is often strived for (15,44). In line with our results concerning the gender of the perpetrator, Hartill et al. (17) reported predominantly male perpetrators of sexual violence, but more than one in four participants reported perpetrators of both genders. This emphasizes the need to move forward from the traditional view of male perpetrators exclusively.

Combined perpetration and victimization. The finding that about 6% of the total sample in our study admitted having sexually harassed others in their lifetime was interesting

considering the concurrent high percentage of reported peer perpetrators. However, admitting a destructive or possibly illegal behavior is often related to feelings of shame and guilt; hence, a low number of confessing adolescents were expected and the results must be interpreted thereafter. On the other hand, some adolescents do not realize that they have been the source of victimization (43). The behavior might have felt uncomfortable for the counterpart, referring to SHA as a subjective experience, even though the perpetrator had no intention to harm. Our finding that more boys than girls admitted having sexually harassed others is consistent with former studies among nonathlete adolescents (31,32,34,45). Also in line with these studies, we found that the majority of the adolescents who admitted having harassed others also reported experiences of SHA themselves, possibly emphasizing a need to defend themselves or seeking revenge (46).

Change in SHA from T1 to T2. In line with hypothesis 6, most of the participants in our study reported no change in SHA from T1 to T2, meaning that they either experienced SHA at T1 and T2, or did not experience SHA at T1 or T2. Nevertheless, our finding of a significant decrease in SHA from T1 to T2 in the school and sport settings must be interpreted with caution because of an apparent influence of the COVID-19 pandemic where schools and sport activities were locked down between T1 and T2. Not unexpectedly, reduced time spent in a specific context may affect the prevalence of harm experienced in that context, supported by recent findings that adolescents who attended distant school during the pandemic were more likely to report decreased physical and psychological victimization compared with adolescents who had regular school days (47). In addition, a higher percentage of recreational athletes and reference students who reported SHA in the school or sport setting at T1 chose not to participate at T2 compared with those who did not report SHA at T1, possibly contributing to a lower prevalence rate at T2. In the free time setting, there was no change in SHA from T1 to T2 despite strict restrictions related to social interaction during the pandemic. This finding may indicate, also reflected by a reduction in reported physical SHA in our study from T1 to T2, that SHA during free time was not limited by reduced physical interaction but shifted to online platforms. We did not specifically measure online victimization in our study. However, Augusti et al. (48) have emphasized that most Norwegian adolescents who reported SA during the pandemic also had experience with SA before the pandemic. This pattern was different for online SA in their study where half of the cases during the pandemic were first-time experiences. This underlines the possibility of a platform change toward increased SHA online during the pandemic, correspondingly between T1 and T2 in our study (48).

Strengths and limitations. The strengths of this study encompass a large study sample with equal male/female distribution and nonbinary gender participants included, an age-matched reference group, different sports included, geographical spreading of the schools across Norway, and examination of three different social settings. To our knowledge, this study was the first prospective examination of reported SHA among athletes. The response rate was high (62.4%–88.6%) considering the sensitive theme and compared with other SHA studies reporting a mean response rate of 33.5% (8). We also piloted and adjusted the questionnaire before use.

However, we did not use a validated questionnaire (49) because this was not available at the time of planning our study. Our results do not hold information about frequency or severity, but for the purpose of this article, we considered a threshold measure of SHA satisfactory. Self-reported data may not be precise, especially when retrospectively reported, because of emotional impact, hesitation to report, worries about confidentiality, and inaccurate recall (50). For the adolescents who reported several types of SHA, follow-up questions made the questionnaire long and detailed, and some participants may have answered "no" to avoid additional questions. As such, an underestimation of the prevalence of SHA could be possible. In addition, we are aware of the possibility that adolescents with a history of SHA may have chosen not to participate in the study. We do not have additional information about nonresponders, but we do not consider this as having influenced our results substantially.

Implications and future research. The results from this study can provide an important base of knowledge in the process of developing (*a*) preventive measures for SHA and (*b*) educational programs for trainers, teachers, leaders, and others working with young athletes and nonathletes. More research is needed to examine if factors related to elite sports may serve as protective factors for SHA victimization, or whether elite athletes are prone to underreport experiences of SHA. As we examined all types of sports combined, future researchers should investigate different sports or sport categories separately to increase sport-specific knowledge regarding prevalence rates, perpetrators, and risk factors for SHA victimization. For better comparison of prevalence rates reported in different studies, an internationally available and validated questionnaire would be beneficial. Finally, more detailed characteristics of those admitting SHA perpetration and information regarding the scope of cyber harassment among adolescents are encouraged to optimize preventive programs.

CONCLUSIONS

SHA victimization was reported by one in three elite athletes and nearly one in two recreational athletes and reference students, respectively, highlighting a need for preventive measures in both athletes and nonathletes. Most adolescents reported no change in SHA over a 12-month period, and peers were most frequently reported as perpetrators.

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The authors declare no conflicts of interest. The results of the present study do not constitute endorsement by the American College of Sports Medicine. The results of the study are presented clearly, honestly, and without fabrication, falsification, or inappropriate data manipulation.

J. S.-B. generated the original research idea. All authors contributed to the conception of the research project. N. S. and J. S.-B. recruited

the schools and conducted the data collection. N. S. performed the statistical analyses and wrote the draft of the manuscript. All authors contributed to the revising of the manuscript and approved the final version.

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Paper II

Risk factors for sexual harassment and abuse victimization among adolescent athletes and non-athletes. A one-year follow-up study

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Declaration of interest

None.

Author contributions

All authors were involved in the planning of the project, initiated by JSB. NS and JSB ran the data collection. NS and BES conducted the statistical analyses. NS wrote the first draft of the manuscript. All authors contributed to revision of the manuscript and approved the final version.

ABSTRACT

Background: Previous experiences of sexual harassment and abuse (SHA) may increase the risk of subsequent experiences. The association between SHA and negative mental health increases the need to understand risk factors for SHA victimization, important for future development of prevention programs.

Objective: To examine the prevalence of adolescents who experienced sexual revictimization and investigate whether demographic factors and mental health factors were associated with subsequent reporting of SHA victimization.

Participants and Setting: Norwegian elite athletes and recreational athletes attending sport high schools, and reference students attending non-sport high schools (age: 17 years) were eligible for participation.

Methods: The participants answered an online questionnaire at two measurement points one year apart, T1 and T2. Participants responding to the items of interest for this study were included in the analyses (n = 1139, 48.9% boys and 51.1% girls). After testing for measurement invariance, data were analyzed using Classification and Regression Tree analysis (CRT).

Results: Among the students with lifetime experience of SHA (T1), 49.5% reported revictimization at T2 (60.9% girls, 32.2% boys, $p \leq .001$). The prevalence of SHA revictimization was lowest among elite athletes (44.3%) compared with recreational athletes (49.1%) and reference students (59.4%, p = .019). The combination of being a girl with high level of symptoms of eating disorders and other psychological health problems was associated with subsequent reporting of SHA.

Conclusion: High prevalence of SHA revictimization, and the combination of gender- and mental health-related risk factors for subsequent SHA victimization is important knowledge for development of preventive programs.

Keywords: adolescent, athlete, eating disorder, elite, high school, mental health

INTRODUCTION

Norwegian adolescents report high quality of life and satisfaction with their health (Bakken, 2022). Yet, three out of ten high school girls and more than one out of ten high school boys are bothered by various psychological health problems (Bakken, 2022). Sexual harassment and abuse (SHA) among adolescents, referring to subjectively uncomfortable or unwanted sexualized experiences of verbal, non-verbal, or physical character (Mountjoy et al., 2016) is also concerning (Bendixen, Daveronis, & Kennair, 2018; Sølvberg, Torstveit, Rosenvinge, Pettersen, & Sundgot-Borgen, 2022). Adolescence is a critical period both for experiencing SHA (Li, Zhou, Cao, & Tang, 2022) and developing mental health disorders (Solmi et al., 2022). There is a well-established association between SHA victimization and negative mental health outcomes in the general adolescent population, e.g., lower self-esteem and well-being, symptoms of depression and anxiety, self-harm, traumatic symptoms, negative body image, and disordered eating (Bendixen et al., 2018; Chiodo, Wolfe, Crooks, Hughes, & Jaffe, 2009; Dahlqvist, Landstedt, Young, & Gadin, 2016; Gruber & Fineran, 2008; Hébert et al., 2021; Li, D'Arcy, & Meng, 2016; Petersen & Hyde, 2013). Experiencing SHA, often appearance-based in content, may lead to self-objectivization and increased self-surveillance/body-surveillance. This, in turn, may increase weight- and shape concerns and lower self-esteem, which are further associated with disordered eating and eating disorders (Buchanan, Bluestein, Nappa, Woods, & Depatie, 2013; Hayes, Linardon, Kim, & Mitchison,

2021; Petersen & Hyde, 2013). As a counterbalancing factor, resilience might be a factor that modify the impact of adverse experiences (Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006).

Mental health outcomes of SHA for athletes are mainly based on adult samples, cross-sectional and qualitative studies, as well as studies without comparison groups (Fasting, Brackenridge, & Walseth, 2002; Ohlert, Rau, & Allroggen, 2019; Reardon et al., 2019; Vertommen, Kampen, Schipper-van Veldhoven, Uzieblo, & Van Den Eede, 2018). The few existing studies among adolescent athletes have shown an association between sexual violence and lower self-esteem, higher psychological distress, and symptoms of post-traumatic stress disorder (Parent, Vaillancourt-Morel, & Gillard, 2021).

Adolescents with previous experiences of SHA seem to be at increased risk of experiencing it again (Chiodo et al., 2009; Dahlqvist et al., 2016; Young & Furman, 2008). A meta-analytic review showed that almost half of victims of childhood sexual abuse were revictimized in the future (Walker, Freud, Ellis, Fraine, & Wilson, 2019), but the prevalence of SHA revictimization in adolescent athletes is unknown. Given the reported negative consequences of SHA, and the symptom complexity associated with revictimization (Hébert et al., 2021), it is important to understand risk factors for SHA victimization which may help to develop prevention programs. Therefore, the aims of this study were to prospectively examine 1) the prevalence of male and female elite athletes, recreational athletes, and reference students who experienced sexual revictimization, and 2) which combinations of demographic- and mental health factors were associated with subsequent SHA victimization.

METHODS

Study design and procedure

A prospective cohort study with two measurement points was conducted in October 2019-May 2020 (T1) and October 2020–March 2021 (T2). All private and public elite sport high schools or high schools with elite sport programs, and a sample of non-sport high schools in four counties in Norway were invited to participate in the study (Figure 1). Members of the research group travelled to the consenting schools (n = 32, Figure 1) and informed all eligible students about the study by an oral presentation. Subsequently, the students received an e-mail with a written information letter and a link to an online questionnaire. The participants who chose to participate signed an electronic consent and answered the on-line questionnaire during school time. The same cohort was invited to answer a follow-up questionnaire one year later (T2), during their final year of high school in Norway (13th grade).

COVID-19

Because of the COVID-19 pandemic, the schools in Norway closed March 12, 2020. Five schools had to attend T1 through Skype for Business (Microsoft, Redmond, WA) or Teams (Microsoft) with the adolescents participating from home. Thus, the methods were implemented via a digital platform. The same digital procedure was organized at T2 with attendance from home or in small groups in school depending on the schools' preferences and organization during the pandemic. One school received a physical visit at T2.

Participants

Students attending private elite sport high schools or specialized elite sport programs in public high schools were defined as elite athletes in this study. Students attending recreational sport programs were designated as recreational athletes. Students attending general educational program without sport specialization at non-sport high schools were classified as reference students. Students of all genders attending 12th grade at the consenting high schools were invited to participate (n = 1587, Figure 1). The response rate was 78.8% at T1 (n = 1251). One year later, the same cohort of students, now enrolled in 13th grade at the

participating schools were invited to T2 (n = 1666), regardless of whether they had participated at T1. The response rate was 80.7% (n = 1344) at T2. Participants who responded to the items of interest for this study (SHA at T2 and one or more of the independent variables described in the statistics section) were included in the analyses (n = 1139).

Insert figure one about here

Instruments - questionnaire

Demographics. A questionnaire was created in the online program SurveyXact offered by Ramböll, Aarhus, Denmark. Demographical questions included age, school affiliation, immigration status, living situation, sexual orientation, and training and sports participation.

Sexual harassment and abuse (SHA). The questions regarding SHA were based on earlier research (Fasting, Brackenridge, & Sundgot-Borgen, 2003). The participants were introduced to the definition of sexual harassment (SH) from the Norwegian Equality and Anti-Discrimination Act (§ 13): "Sexual harassment means any form of unwanted sexual attention that has the purpose or effect of being offensive, frightening, hostile, degrading, humiliating or troublesome". In total, thirteen questions covered verbal SH (e.g., unwanted sexual comments/remarks), non-verbal SH (e.g., unwanted sexual staring/glances), and physical SHA (e.g., unwanted physical contact) (for more details, see (Sølvberg et al., 2022)). The questions were answered dichotomously (no/yes) and covered lifetime experiences of SHA at T1 and 12 months experiences at T2. Those who reported at least one experience of verbal, non-verbal, and/or physical SHA were categorized as having experienced SHA at T1 and T2, respectively. Revictimization was measured as the percentage of students who reported SHA at T2 among those who had already reported lifetime SHA at T1. The participants who responded "yes" to any of the SHA items received follow-up questions regarding the location of the experience (in school, sports outside school, or free time). Prevalence rates stratified by social settings have

been presented in a former publication (Sølvberg et al., 2022). The results in this study are presented for all three settings combined.

World Health Organization Quality of Life questionnaire (WHOQOL-BREF). We used two items from WHOQOL-BREF to assess overall quality of life and satisfaction with health, respectively, on a 5-point Likert scale based on the two preceding weeks (i.e., "How would you rate your quality of life?" and "How satisfied are you with your health?"). Higher scores indicate higher quality of life and satisfaction with health (The WHOQOL Group, 1998).

Rosenberg Self-Esteem Scale (RSES). RSES ten-item scale measures overall self-acceptance and self-worth (Rosenberg, 1965). Five positively worded items, e.g., "I feel that I have a number of good qualities", and five negatively worded items, e.g., "I certainly feel useless at times", were scored on a 4-point Likert scale. The global score ranges from 10-40 where a higher score indicates higher self-esteem. Coefficient alpha was .89.

Eating Disorder Examination Questionnaire (EDE-q). The EDE-q 6.0 is a 28-item self-report questionnaire addressing symptoms of eating disorders based on the last 28 days (Fairburn & Beglin, 2008). Twenty-two of the items were scored on a 7-point Likert scale. A high global score indicates a greater number of eating disorder symptoms. Coefficient alpha was .95.

Health Behavior in School-aged Children - symptom checklist (HBSC-SCL). HBSC-SCL is an eight-item questionnaire assessing subjective health complaints in the prior six months (Currie et al., 2014). Four items represent somatic symptoms (e.g., headache, stomachache) and four items represent psychological symptoms (e.g., feeling low, irritability). The items were rated on a 5-point scale where higher scores represent more complaints. Coefficient alpha was .75 for the somatic subscale and .82 for the psychological subscale.

Resilience scale for adolescence (READ). READ consists of 28 positively worded items, scored on a 5-point Likert scale (Hjemdal et al., 2006). A higher score indicates higher

resilience, consisting of the following components: personal competence, social competence, structured style, family cohesion, and social resources. Coefficient alpha was .95.

Piloting of the measures in the questionnaire

Three male elite athletes attending elite sport high schools and three female non-sport high school students, not eligible for this study, piloted the different measures included in the questionnaire. Minor changes to the wording of some questions and additional response options were added to demographic questions.

Statistical analyses

To provide evidence of construct validity, we used M*plus* version 8.4 to conduct a categorical multiple-group confirmatory factor analysis (CFA) of the SHA measure, for both T1 and T2. We also conducted a multiple-group and longitudinal measurement invariance analysis of the SHA measure (Rutkowski, Svetina, & Liaw, 2019; Svetina, Rutkowski, & Rutkowski, 2019). Meaningful comparisons of means between psychological constructs across groups and over time must demonstrate evidence that measurement is equivalent both across the studied groups and measurement points (Svetina et al., 2019). We used standardized model fit measures (e.g., Comparative Fit Index; $\Delta CFI < .01$) to evaluate the fit of the tested models (Rutkowski et al., 2019; Svetina et al., 2019).

Further analyses were conducted in SPSS version 28.0 (IBM, Armonk, New York, USA). No power calculation was performed because we aimed to include the total population of 12^{th}-grade athletes at elite sport high schools in Norway. The reliability of the mental health measures, based on the internal consistency among scale items, was reported as coefficient alpha. Descriptive data were presented as number and percentages or mean with standard deviation (SD). Group differences were analyzed using Chi-Square Test of Independence. We used Classification and Regression Tree analysis (CRT) to test interaction between various independent variables at T1 (gender, school group, WHOQOL-quality of life,

WHOQOL-satisfaction with health, RSES, EDE-q, HBSC-SCL somatic subscale, HBSC-SCL psychological subscale, and READ) and SHA at T2 as the dependent variable. We used data-driven cut-points and a stopping rule of minimum 100 cases in parent node and 50 cases in child nodes (IBM). We applied tree pruning to avoid overfitting. Tree pruning allows the tree to grow until the stopping rule is reached before trimming the tree by removing non-significant nodes. Thereby, the complexity of the tree was reduced, and the predictive accuracy increased. The maximum difference in risk between the pruned tree and the subtree with the smallest risk was one standard error (IBM). Missing data were treated with surrogated splits (IBM). We calculated prevalence differences with 95% confidence intervals (CI). Four participants reporting non-binary gender were treated as missing on the gender variable because a separate non-binary group would be too small for meaningful comparisons. Gender refers to the socially constructed characteristics of girls, boys, and gender-diverse people, influencing identity, behaviors, social roles, and interaction with others (Heidari, Babor, De Castro, Tort, & Curno, 2016).

Ethics

This study was approved by the Regional Committees for Medical and Health Research Ethics (No. 8673) and the Norwegian Center for Research Data (No. 960987) and was registered in Clinical Trials (NCT04003675). In Norway, adolescents above 16 years can consent themselves to participate in medical and health-related research (Norwegian Health Research Act §17). Participation was voluntary, the data were de-identified, and the participants could withdraw at any time without consequences. The adolescents received contact information to the project leader and the nurse at their respective schools and were encouraged to take contact if they needed a conversation regarding SHA or mental health-related difficulties. There was also a possibility to ask for help at the end of the questionnaire, giving the project leader permission to contact the participant.

RESULTS

The gender distribution was 48.9% boys and 51.1% girls with a mean age of 17.1 (SD = 0.4) years. Most participants reported a heterosexual orientation (96.5%), 77.3% lived with one or both parents, and 8.6% were first- or second-generation immigrants. Training hours per week were on average 16.1 (SD = 5.6) for the elite athletes, 15.0 (SD = 6.0) for the recreational athletes, and 6.9 (SD = 5.5) for the reference students. Fifty-two different types of competitive sports were represented in the sample.

Among the students who reported lifetime experiences of SHA at T1, 49.5% experienced revictimization at T2 (60.9% girls and 32.2% boys, $p \leq .001$, Phi: .28). A lower percentage of the elite athletes (44.3%) reported revictimization compared with the recreational athletes (49.1%), and the reference students (59.4%, $p = .019$, Cramer's V: .12).

The CFA of SHA at T1 yielded a good fit to the data: $\chi 2$ (65) = 172.753, $p = .0000$, SRMR = .08, RMSEA = .04, (90% CI RMSEA = .03 to .04), CFI = .97. Similarly, the CFA of SHA at T2 also yielded a good fit: $\chi 2$ (65) = 158.052, $p = .0000$, SRMR = .09, RMSEA = .03, (90% CI RMSEA = .03 to .04), CFI = .97. However, the multiple-group (boys and girls) and longitudinal measurement invariance analysis (T1 and T2) of the SHA measure, with more restrictive invariant models, yielded an unacceptable fit. This was also the case with the multiple-group and longitudinal measurement invariance analysis of the different school types (elite, recreational, and reference students). Attempting to establish multiple-group measurement invariance of the SHA measure at T2, we conducted separate analyses using both gender and school type. The first multiple-group (gender) measurement model, with partial scalar factorial invariance constraints in place, yielded an acceptable fit to the data: $\chi 2$ (146) = 237.366, $p = .0000$, SRMR = .13, RMSEA = .04, (90% CI RMSEA = .03 to .05), CFI = .96. The second multiple-group (school type) measurement model, with partial scalar factorial invariance constraints in place, also yielded an acceptable fit: $\chi 2$ (233) = 358.094, p

= .0000, SRMR = .14, RMSEA = .04, (90% CI RMSEA = .03 to .05), CFI = .96. Based on these preliminary analyses, we decided not to include SHA at T1 in the further CRT analysis.

Insert figure 2 about here

In total, 36.2% of the adolescents reported experiences of SHA at T2. The results from the CRT analysis (see Figure 2) showed that gender was the main risk factor for SHA victimization at T2. Specifically, girls had a higher risk of experiencing SHA than boys (prevalence difference = 20.2%, 95% CI = [14.8, 25.6]). In combination with being a girl, symptoms of eating disorders were a risk factor where girls with higher EDE-q scores (> 2.866) were more likely to report SHA at T2 (prevalence difference = 33.2%, CI = [21.4, 45.0]). Among the girls with low EDE-q scores (< 2.866), a high level of psychological health problems (> 11.5) was also a risk factor for SHA at T2 with a prevalence difference of 16.8% (CI = [7.0, 26.6]).

DISCUSSION

The present study investigated the prevalence of elite athletes, recreational athletes, and reference students who experienced sexual revictimization, and how interactions between demographic factors and mental health outcomes at T1 were associated with SHA victimization at T2.

The prevalence of SHA revictimization in this study corresponds to the mean prevalence of revictimization reported in general for victims of childhood sexual abuse (47.9%) (Walker et al., 2019). Other researchers have reported higher (Young & Furman, 2008) and lower (Edwards & Banyard, 2022) rates of SHA revictimization in middle- and high school adolescents, likely a result of methodological choices like different time perspectives for calculating revictimization and types of SHA measured. The higher prevalence of SHA revictimization among girls in our study supports findings in previous studies (Edwards &

245 Banyard, 2022; Pittenger, Pogue, & Hansen, 2018; Young & Furman, 2008), but the results
246 regarding school group differences are difficult to compare because of the lack of comparable
247 studies among athletes. These findings may reflect real differences in experience of SHA
248 revictimization between genders and between school groups, but it could also be related to
249 other factors like reluctance to report among boys (Pittenger et al., 2018) and normalization
250 of abusive behaviors in elite sports (Fasting et al., 2003).

251 The strongest risk factor for subsequent SHA victimization was female gender, in line with
252 other studies reporting girls to be at higher risk for SHA than boys (Turner, Finkelhor, &
253 Ormrod, 2010; Vertommen et al., 2016). Girls are considered to report SHA more frequently
254 than boys (Vertommen et al., 2016), and also more likely to be distressed by such experiences
255 (Young, Grey, & Boyd, 2009), possibly affecting self-ratings of SHA. Furthermore, living in
256 a society that sexualizes the female body may increase the risk of sexual victimization for
257 girls (Fredrickson & Roberts, 1997).

258 Furthermore, our findings indicated that symptoms of eating disorders may be a risk factor
259 for subsequent SHA victimization among girls. An association between SHA and eating
260 disorder psychopathology has also been reported in previous research, but often presented in
261 the direction of SHA preceding the onset of an eating disorder (Chen et al., 2010; Hayes et
262 al., 2021; Madowitz, Matheson, & Liang, 2015; Petersen & Hyde, 2013; Sundgot-Borgen,
263 Fasting, Brackenridge, Torstveit, & Berglund, 2003). Adolescents who struggle with
264 disordered eating or eating disorders are likely to have high weight- and shape concerns
265 (Gowers & Shore, 2001) and high body- and self-surveillance (Petersen & Hyde, 2013), the
266 latter meaning they evaluate themselves and their bodies based on how they believe others
267 evaluate them, likely in a negative manner (Hayes et al., 2021; Petersen & Hyde, 2013).
268 Hence, the adolescents in this study, with high levels of symptoms of eating disorders, may
269 have an increased vulnerability to internalize and/or misinterpret appearance-based

comments, glances, and behaviors (Sundgot-Borgen et al., 2003). As we did not control for a history of SHA victimization or other traumatic experiences, some of the adolescents may have experienced SHA before, which could be associated with the development of an eating disorder or other mental health problems before subsequent experiences of SHA at T2.

Psychological health problems were also a significant risk factor for SHA victimization for the girls in this study. Other researchers have also reported, among adolescent non-athletes, that mental health problems might occur before SHA victimization (Pittenger et al., 2018; Turner et al., 2010). Adolescents who experience mental health problems may be regarded as "easy" targets as they may be extra vulnerable to display internalizing (e.g., sadness) or externalizing (e.g., anger) behaviors which can trigger perpetrators to behave in harmful manners (Turner et al., 2010). Setting boundaries for sexual- and relational experimentation may be more challenging for adolescents who experience mental health problems (Turner et al., 2010), possibly limiting their ability to communicate their experience of unwanted sexual situations.

Elite athletes are highlighted as a risk group for experiencing SHA in sports (Mountjoy et al., 2016). However, according to a previous publication, high school elite athletes report less SHA than recreational athletes and reference students (Sølvberg et al., 2022), and it was therefore not surprising that the high school elite athletes did not occur as a risk group for subsequent SHA in the present study.

The results from the invariance analyses restricted meaningful statistical comparisons between SHA at T1 and T2, hence we chose not to include SHA at T1 in the CRT-analysis. However, we conducted a separate CRT-analysis with SHA at T1 as an additional independent variable. This analysis showed SHA at T1 to be the most significant risk factor for SHA at T2, supporting former studies highlighting previous experiences of SHA as a risk

294 factor for subsequent SHA victimization (Chiodo et al., 2009; Dahlqvist et al., 2016; Young
295 & Furman, 2008). The invariance analyses also showed high SRMR-values, indicating a
296 difference between the observed and the predicted correlations (Kline, 2016), most likely
297 explained by overlapping items in our questionnaire, e.g. #11 coerced sexual act and #12
298 rape. Consequently, future research should emphasize the operationalization of SHA
299 victimization and adjustments of the questionnaire items (DeVellis & Thorpe, 2021).

300 **Strengths, limitations, and future directions**

301 The main strengths of this study include a prospective research design and the use of CRT-
302 analysis with high predictive accuracy. Furthermore, a large sample size, high response rate,
303 schools geographically spread across Norway, different sports and competitive levels
304 included, and an age-matched reference group make us consider the sample representative of
305 athlete- and general high school student populations in Norway. We included validated
306 instruments measuring positive- and negative mental health outcomes, contributing to a
307 holistic perspective on mental health. However, bias related to self-report questionnaires
308 cannot be avoided. Additionally, we did not consider frequency or severity of SHA. Future
309 studies should examine context-specific risk factors for SHA, and target risk factors for boys.

310 **Practical implications**

311 Health practitioners in sports and school settings should be trained in trauma-informed care to
312 have the competence to recognize and support adolescents who experience SHA and
313 concurrent mental health problems. High school leaders, teachers, and coaches should be
314 educated about signs and symptoms of mental health issues and SHA, and guidelines of how
315 to act. Targeted prevention measures must be developed and implemented in high school,
316 aiming to manage symptoms of eating disorders and psychological health problems as

317 possible risk factors for subsequent SHA victimization among adolescents, and hopefully
318 reduce occurrence of initial and recurrent SHA victimization.

319 **CONCLUSION**

320 The combination of female gender, having high level of symptoms of eating disorders, and
321 other psychological health problems were identified as significant risk factors for subsequent
322 SHA victimization among adolescents. These results, in addition to the high prevalence of
323 SHA revictimization, is important knowledge for development of preventive programs in
324 sport- and non-sport high schools.

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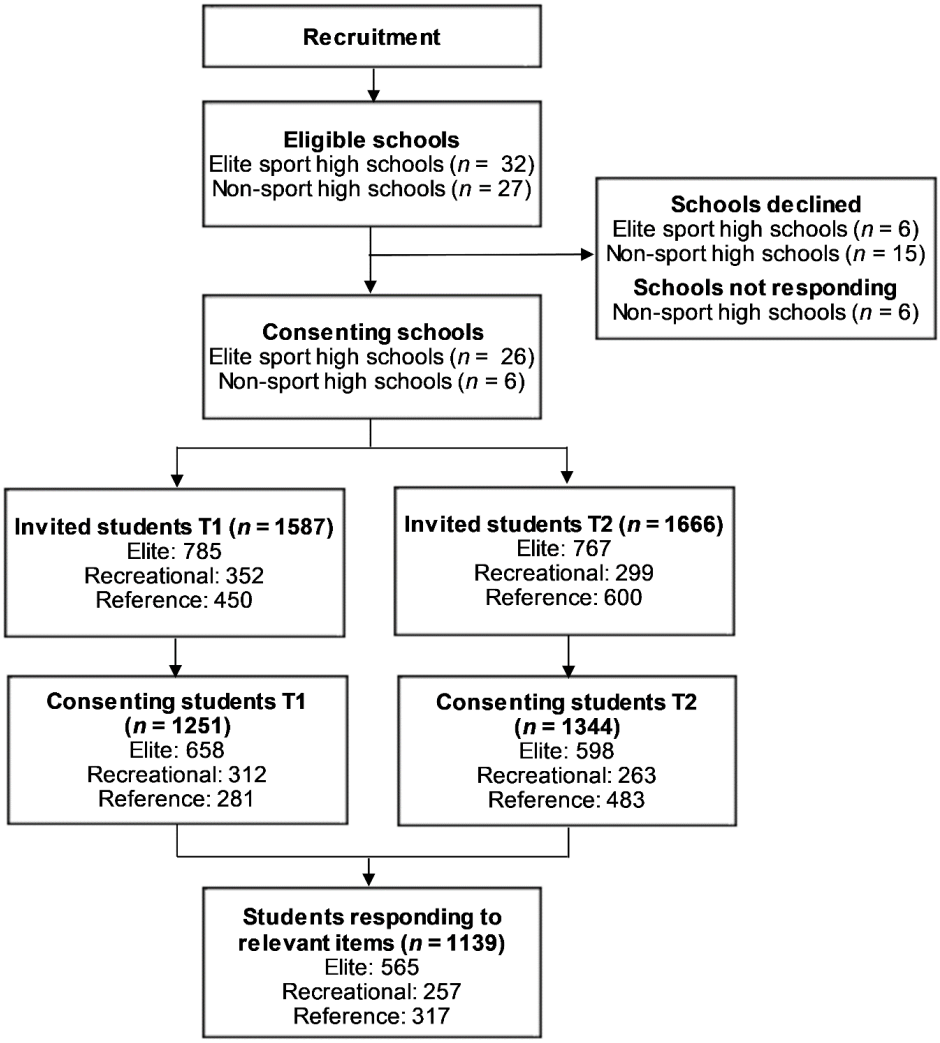

Figure 1 Flow chart of the recruitment of schools and inclusion of participants in the study.

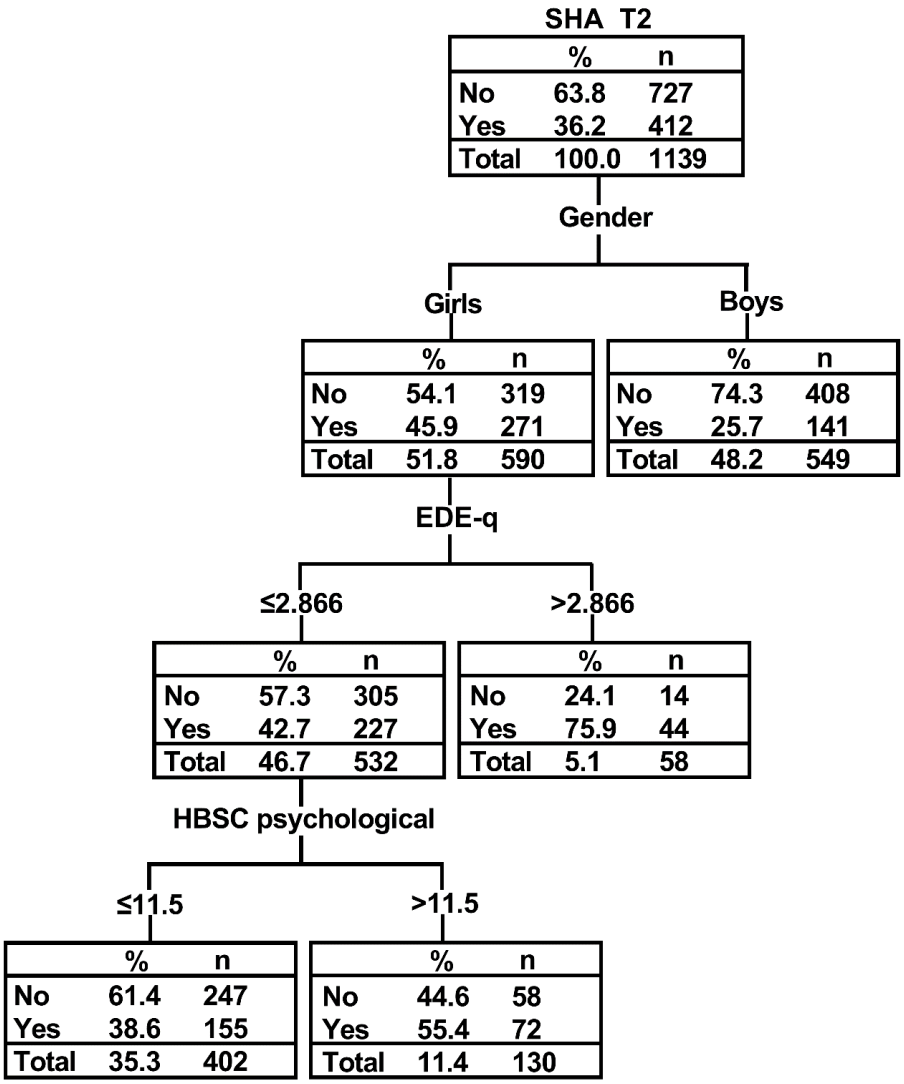

Figure 2 Classification and regression tree (CRT) of demographic- and mental health factors for sexual harassment and abuse victimization (SHA) at T2.
EDE-q: Eating Disorder Examination Questionnaire; HBSC: Health Behavior in School-aged Children symptom checklist.

Appendix 1: Correlation matrix

	SHA T2	School group	Gender	WHOQOL QOL	WHOQOL SWH	RSES	EDE-q	HBSC somatic	HBSC psychological	READ
SHA T2	-									
School group	.137 *	-								
Gender	.260 *	.177 *	-							
WHOQOL-QOL	-.165 §	-.065 §	-.129 §	-						
WHOQOL-SWH	-.154 §	-.147 §	-.181 §	.560 #	-					
RSES	-.251 §	-.093 §	-.304 §	.556 #	.509 #	-				
EDE-q	.269 §	.152 §	.326 §	-.263 #	-.364 #	-.480 #	-			
HBSC somatic	.218 §	.057 §	.226 §	-.275 #	-.324 #	-.368 #	.316 #	-		
HBSC psychological	.244 §	.068 §	.278 §	-.410 #	-.422 #	-.536 #	.435 #	.595 #	-	
READ	-.160 §	-.136 §	-.142 §	.458 #	.408 #	.562 #	-.348 #	-.284 #	-.421 #	-

Correlation coefficients: * contingency coefficient, § Point-biserial correlation coefficient, # Spearman's rho

Paper III

Sexual Harassment and Abuse; Disclosure and Awareness of Report- and Support Resources in Norwegian Sport- and Non-sport High Schools. A Prospective Exploratory Study

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ABSTRACT

Purpose: To examine high school students' disclosure of sexual harassment and abuse (SHA), and awareness of reporting systems and support mechanisms in school among students, leaders, and coaches.

Method: Norwegian 17-year-old high school elite athletes (*n*=630), recreational athletes (*n*=307), and reference students (*n*=263) responded to an online questionnaire at two measurement points, one year apart (T1 and T2). Leaders and coaches (*n*=249) at the participating high schools responded to an adapted version of the questionnaire at T1. Data were analyzed using ANOVA or Welch test, Pearson Chi-Square test, and McNemar test.

Results: In total, 11.4% and 34.0% of the adolescents were aware of reporting systems and support mechanisms, respectively, in their schools. Nearly all the leaders, and half of the coaches were aware of these resources. Among the adolescents with lifetime experience of SHA, 20.1% had disclosed their experiences to someone. Girls disclosed more frequently than boys. The elite- and recreational athletes disclosed less often compared with the reference students. A negative change from T1 to T2 was found in disclosure of SHA and awareness of support mechanisms. At T2, 6.5% of the adolescents reported that their school had implemented measures against SHA during the last 12 months.

Conclusions: The results emphasize a need for institutional effort to improve information about available report- and support resources and increase the relevance of use of such systems for adolescents.

INTRODUCTION

Sexual harassment and abuse (SHA) are societal problems affecting all genders and age groups, and adolescence is considered a vulnerable period for experiencing SHA (Mountjoy et al., 2016). Lack of reporting systems and codes of practice in school and sports may communicate lack of protection and low priority of the adolescents' safety, possibly increasing the risk of SHA victimization and decreasing disclosure (Mountjoy et al., 2016). Among American undergraduate students, it has been reported that four out of five were aware of their schools' sexual harassment policies, and more than half of the students knew who to contact if they experienced SHA (Hill and Silva, 2005). In the sport context, one out of five American student-athletes expressed knowledge about where to report SHA (Adhia et al., 2023), and up to 70% of athletes who responded to a questionnaire during the Youth Olympic Games were aware of where they could report or get help if they experienced or witnessed situations with harassment or abuse (Mountjoy et al., 2020; Mountjoy et al., 2021b). Similar research among coaches and administrators is limited. One study addressed sexual harassment issues among American physical education staff and reported that 67% of athletic trainers were aware of their institution's sexual harassment policy, but less than half understood the content (Velasquez, 1998).

There is a complex interaction between personal- and contextual factors that affect a person's choice to disclose experiences of SHA or not. Barriers comprise fear of consequences; not being believed; losing social support; shame and guilt; and limited knowledge about where and how to report (Hill and Silva, 2005; Mountjoy et al., 2016; Lemaigre et al., 2017; Morrison et al., 2018; Hafstad and Augusti, 2019; Solstad, 2019). Therefore, it is not uncommon that people hide their experiences of SHA for many years, or do not disclose at all (Steine et al., 2016). Between 18-56% of middle- and high school students (Priebe and Svedin, 2008; Hill and Kearl, 2011; Hafstad and Augusti, 2019), college students (Hill and Silva, 2005), and adult athletes (Kerr et al., 2019; Hartill et al., 2021) do not disclose SHA. Of those who do, most of them are girls reporting to friends/peers and family members (Hill and Silva, 2005; Priebe and Svedin, 2008; Hill and Kearl, 2011; Hartill et al., 2021).

Disclosure of SHA is an important pathway to reduce the sequalae of SHA incidents, and here the presence of school-based report- and support resources is essential. However, awareness about the existence and use of such resources in the sport school context is not known, neither among adolescent athletes nor among leaders and coaches. Hence, this study is pioneering in Norway. Addressing SHA in school requires proactive leaderships and policy interventions (Hartill et al., 2021). Yet, there is a common thought that increasing awareness about a theme will have a preventive effect per se, but this "natural effect" of the schools' participation in a study about SHA and available resources remains to be tested.

Therefore, this study aimed to examine:

1. awareness and use of reporting systems and support mechanisms for SHA in the school system among adolescent elite athletes, recreational athletes, and reference students at baseline (T1) and follow-up (T2), and whether there was a difference in awareness of these resources between adolescents with and without experience of SHA
2. awareness of reporting systems and support mechanisms for SHA in the school system among leaders and coaches at T1.
3. the proportion of adolescents who disclose their experiences with SHA at T1 and T2, and who they disclose to in the school setting.
4. if the adolescents perceived that measures for SHA were implemented or newly informed in the participating schools at T2.

METHODS

Design, recruitment, and procedure

This study was a part of a large prospective study of the prevalence of SHA, conducted in October 2019 - May 2020 (T1) and October 2020 - March 2021 (T2) (Sølvberg et al., 2022). All Norwegian sport high schools and a sample of non-sport high schools were invited to participate in the study by e-mail and follow-up telephone calls. School visits were arranged with the participating schools, where the adolescents responded to an online questionnaire during a school lesson. The leaders and coaches responded to a different version of the questionnaire.

Participants

Adolescents

The inclusion and exclusion of schools and participants are described in figure 1. Adolescents in 12th grade (mean age: 17.1 years, SD: 0.4) at the participating sport- and non-sport high schools were invited. The response rate was 78.8%. After excluding dropouts, the final sample of 1200 adolescents were grouped into three groups (elite athletes, recreational athletes, and reference students) depending on which school they attended. The elite athletes attended private elite sport high schools or public sport high schools with specified elite sport programs. These schools collaborate with the Norwegian Olympic Sport Center, providing opportunities to combine education with high-level sport development and performance (Kristiansen and Houlihan, 2017; Olympiatoppen [The Norwegian Olympic and Paralympic Committee and Confederation of Sports], 2019; Thompson et al., 2022). Public sport high schools in Norway also offer general sport education programs. Adolescents attending these programs were classified as recreational athletes in this study. The reference students attended educational programs without sport specialization and were recruited from other public high schools than the athletes, defined as non-sport high schools in this study..

Leaders and coaches

We invited leaders (i.e., principals, administrators, and heads of sports) and coaches with minimum 20% employment status at the sport high schools (figure 1). Some of the leaders had dual roles as coaches and were counted as the role they self-reported in the questionnaire. The total response rate was 54.1%.

Questionnaire

Sexual harassment and abuse. SHA was defined in the questionnaire as "(…) any form of unwanted sexual attention that has the purpose or effect of being offensive, frightening, hostile, degrading, humiliating or troublesome" (The Norwegian Equality and Anti-Discrimination Act § 13). Thirteen questions were listed covering a continuum of verbal (e.g., unwanted sexual comments/remarks), non-verbal (e.g., having sexual pictures/videos of oneself shared without consent), and physical sexual experiences (e.g., unwanted physical contact, rape). The participants were asked to respond to whether they had experienced these situations themselves or not (yes/no). Details are described elsewhere (Sølvberg et al., 2022). Those who reported yes to minimum one of the items, regardless of social setting, were classified as having experienced SHA. At T1, the questions covered lifetime experiences, and at T2 the questions covered 12-months experiences of SHA.

Disclosure. Disclosure of SHA was measured with a single item, i.e. "Did you disclose to someone about your experiences?" (yes/no). If yes, a follow-up question asked; "who did you disclose to?" with the options friends/peers, coach/teacher, employer, health personnel, parents/family, others, and reporting system. Multiple responses were possible.

Reporting system and support mechanisms. Awareness of the schools' reporting system and support mechanisms was measured by the following two items: "Does your school have procedures/systems for reporting sexual harassment?" (yes/no/I do not know) and "Does your school have emergency procedures and/or support mechanisms for people who experience sexual harassment or report/disclose experiences with sexual harassment?" (yes/no/I do not know). A follow-up question was given to those who indicated that their school had a support system: "Would you use this support system?". Negative responses were followed with an optional comment box to describe reasons for not wanting to use the system. The comments were categorized and quantified by counting the number of comments in each category.

Implementation of SHA measures in school. The adolescents were asked at T2 if their school had implemented measures related to SHA/unwanted sexual experiences the last year. If "yes", a voluntary comment box to describe these measures was provided and the same quantifying method as described above was applied.

Leaders and coaches. The leaders and coaches answered an adapted version of the questionnaire including demographic questions, educational background, sports- and coaching experience, and the same questions about report- and support resources as the adolescents.

Both versions of the questionnaire were created in SurveyXact (Rambøll, Aarhus, Denmark). The student version was piloted by six adolescents and the adult version was piloted by three leaders/coaches at high schools not relevant for inclusion in the final study. Following the pilots, small wording adjustments were done to specify interpretation of the questions. After the first data collection, each school received a report with results of experiences with SHA and awareness about report- and support resources at their school.

Statistical analyses

SPSS version 28.0 (IBM, Armonk, New York, USA) was used for statistical analyses. No power calculation was performed because we invited the total population of elite athletes at Norwegian sport high schools. ANOVA with Bonferroni post-hoc test was used to analyze differences in numerical data for boys, and Welch test with Games-Howell post-hoc test for girls due to unequal variances. Effect sizes were presented as Eta-squared for numerical data. Categorical data were analyzed using Pearson Chi-Square test for independence with Phi or Cramer's V effect sizes. McNemar test was used to analyze changes from T1 to T2. P-values$\leq$.05 were considered statistically significant.

The adolescents reporting non-binary gender identification were excluded from the analyses regarding gender differences because of a low number of participants (n=4). For the questions about reporting systems and support mechanisms, the response options "no" and "I do not know" were merged for analytic purpose in the prospective analyses. For analyses related to aim 1 and 2, we used the total sample of adolescents and leaders/coaches, respectively. The analyses for aim 3 were based on the subsample of adolescents having experienced SHA (n=696) as only those who reported experience of SHA received follow-up questions about disclosure. The prospective analyses were

conducted with the subsample of adolescents who responded to both T1 and T2 on disclosure (*n*=308), report- and support resources (*n*=907), and preventive measures (*n*=907).

Ethics

The study was approved by the Regional Committees for Medical and Health Research Ethics (REC) (No. 8673), The Norwegian Center for Research Data (NSD) (No. 960987), registered in Clinical Trials (NCT04003675), and conducted according to the Helsinki Declaration. The participants were informed about the possibility to withdraw at any time without personal consequences. Electronic informed consent was signed by all participants. Adolescents above 16 years in Norway can consent to participate in health-related research without parental consent (Norwegian Health Research Act §17). Collected data were de-identified. Contact information to the project leader and the school nurse was distributed, encouraging the adolescents to talk to someone if they had concerns regarding the themes of this study. A specific question at the end of the questionnaire asked if the participant needed to talk to someone. Students who replied "yes" were contacted by the project leader.

RESULTS

Sample characteristics

Characteristics of the adolescent sample are presented in table 1. In total, 58.0% of the adolescents reported lifetime experience of SHA at T1 (50.5% elite athletes, 66.8% recreational athletes, and 65.8% reference students). The mean age of the leaders was 45.9 (SD=6.7) years and 52.0 (SD=8.1) years at non-sport and sport high schools, respectively, and one third were males. The coaches were on average 41.7 (SD=10.3) years and 79.5% were males. Most coaches (79.5%) reported a sports-specific educational background and had been employed at a sport high school for an average of 8.4 (SD=7.2) years. Two thirds were also coaching in their free time outside of school.

Reporting systems

In total, 11.4% of the adolescents reported that their school had a reporting system for SHA. A higher proportion of adolescent boys were aware of the reporting system compared to girls (14.0% vs 8.9%, X^2 (2, 1196) = 8.243, p=.016, Phi=.083). There were no differences in awareness of reporting systems between the elite athletes, the recreational athletes, and the reference students (X^2 (4, *n*=1200) = 7.651, p=.105, Cramer's *V*=.056) (table 2), or between the adolescents with experience of SHA and those without experience of SHA (11.2% vs. 11.7%, X^2 (2, n=1200) = .072, p=.788, Phi=.008).

Support mechanisms

A total of 34.0% of the adolescents reported that their school had a system offering help and support to those experiencing or reporting SHA. There were no differences in awareness of support mechanisms between boys and girls (X^2 (2, *n*=1196) = .035, p=.982, Phi=.005), between the three school groups (X^2 (4, *n*=1200) = 8.256, p=.083, Cramer's *V*=.059) (table 2), or between adolescents with and without experience of SHA (34.8% vs. 32.9%, X^2 (2, n=1200) = .438, p=.508, Phi=-.019).

Among the adolescents who were familiar with the support mechanisms, 53.2% reported that they would use them if they needed help, 11.5% would not, and 35.3% were not sure. There were no differences between boys and girls (X^2 (2, *n*=405) = 3.796, p=.150, Phi=.097) or between school groups (X^2 (4, *n*=408) = 1.819, p=.769, Cramer's *V*=.047) regarding their consideration to use the support mechanisms. Reported reasons for not wanting to use the system are specified in figure 2.

Change in awareness of reporting systems and support mechanisms from T1 to T2

Among those who responded to the items regarding awareness of reporting systems at both time points (*n*=907), a similar proportion of adolescents changed their response from "yes" at T1 to "no/I do not know" at T2 (6.4%), compared to those who changed from "no/I do not know" at T1 to "yes" at T2 (8.6%) (p=.103). A higher proportion of adolescents changed their response regarding awareness of support mechanisms from "yes" at T1 to "no/I do not know" at T2 (18.1%) compared to the opposite (13.9%) (p=.030).

Leaders' and coaches' awareness of report- and support resources

All leaders, except three, responded that their school had report- and support resources for SHA. Among the coaches, 51.9% and 51.3% were aware of the reporting system and the support mechanisms, respectively (table 2). Only descriptive data are provided for the leaders/coaches as statistical assumptions were not satisfied for further analyses.

Disclosure

Among the adolescents who reported lifetime experiences of SHA (*n*=696, 58%), regardless of which social setting they experienced it, 20.1% had disclosed to someone. Girls disclosed more often than boys (25.4% vs. 12.1%, X^2 (2, *n*=693) = 18.356, p≤.001, Phi=-.163). A lower percentage of the elite athletes (18.6%) and the recreational athletes (16.1%) disclosed compared with the reference students (27.7%) (X^2 (2, *n*=696) = 8.810, p=.012, Cramer's *V*=.113). The adolescents who had experienced SHA in the school setting mainly disclosed to peers, parents/family, or teachers/coaches (figure 3). Two adolescents reported having used the reporting system in their school.

Change in disclosure from T1 to T2

Among the adolescents who reported experience of SHA at both T1 and T2, and thereby responded to the question about disclosure (*n*=308), 7.5% disclosed at both time points, while 67.5% had not disclosed at all. A higher proportion of adolescents disclosed at T1 but not on T2 (17.9%) compared to those who did not disclose at T1 but disclosed at T2 (7.1%) (p≤.001).

Implemented measures against sexual harassment and abuse in school between T1 and T2

Among the adolescents who responded to the questionnaire at T2 (*n*=907), 59 (6.5%) reported that their school had implemented measures or informed about unwanted sexual attention the last year. There was no difference between boys and girls (X^2 (2, *n*=903) = 1.118, p=.290, Phi=.035) or between the school groups (X^2 (2, *n*=907) = 3.057, p=.217, Cramer's *V*=.058). The measures reported by the adolescents were presentations/information about SHA (33.9%), information about support/help (30.5%), surveys (23.7%), and individual-tailored measures (5.1%). Lastly, 6.8% did not provide details.

DISCUSSION

We examined high school students' disclosure of SHA, and awareness of report- and support resources in school among students, leaders, and coaches. Overall, few adolescents disclosed experiences of SHA, with elite- and recreational athletes disclosing less than reference students. The awareness of available resources was limited among adolescents and coaches.

Report- and support resources

Compared with previous studies (Hayes-Smith and Levett, 2010; Walsh et al., 2010; Adhia et al., 2023) we found a lower proportion of adolescents being aware of reporting systems for SHA in school, yet a higher proportion being aware of support mechanisms (Hayes-Smith and Levett, 2010). Unfamiliarity with such resources may be a result of lack of information provided from the schools or limited attention from the adolescents when the information was provided. Experience of SHA did not seem to motivate adolescents in this study to seek information about report- and support resources as no differences were found between adolescent with and without experience of SHA. Nevertheless, information alone may not be enough if the resources are not being used (Hayes-Smith and Levett, 2010). Our finding that the adolescents do not consider the support system good enough, and only half of them would use the system if they needed help, may reveal that the adolescents do not see the school health service a place to go for support related to SHA victimization.

The result that a higher proportion of adolescent boys compared to girls were aware of the school's reporting system was significant, but small differences in actual percentages and a small effect size emphasize low relevance of this difference.

Regarding the negative change in awareness of support mechanisms, it is unlikely that the students who reported knowing the system at T1 had forgotten about it one year later. Rather, in the T1-T2 interval, the COVID-19 pandemic forced schools to lock down and the transference of school nurses to other health care services may have reduced the adolescents' access to health care services in school (Granrud M and M., 2021).

Leaders' and coaches' awareness of report- and support resources

There is a lack of research covering awareness of SHA policies and resources among coaches and school leaders. As it is the responsibility of adults to facilitate a safe school- and sport environment for adolescents (Tuakli-Wosornu et al., 2023), it was worrying that only half of the coaches in this study were aware of their schools' report- and support system. Our finding that school leaders were more aware of SHA resources in school than the coaches aligns with previous studies reporting that policies are less known, or unknown, at lower levels in the sport system (Parent, 2011).

Disclosure

The percentage of adolescents in this study who disclosed experiences with SHA was lower than reported elsewhere among non-sport adolescents (Hill and Silva, 2005; Priebe and Svedin, 2008; Hill and Kearl, 2011) and adult athletes (Kerr et al., 2019; Hartill et al., 2021; Mountjoy et al., 2021a), yet higher than student-athletes (Adhia et al., 2023). The latter study examined only formal reports filed to the institution, likely resulting in lower rates of disclosure as also reported in other studies among adolescents (Priebe and Svedin, 2008; Hafstad and Augusti, 2019) and athletes (Kerr et al., 2019; Hartill et al., 2021; Mountjoy et al., 2021a). The other studies involving athletes have older samples (Kerr et al., 2019; Mountjoy et al., 2021a) or have retrospectively surveyed adults about their experiences with SHA as children (Hartill et al., 2021). Compared to the adolescent sample in this study, and the fact that victims of SHA tend to delay disclosure (Hébert et al., 2009; Steine et al., 2016), it is likely that the rate of disclosure is higher in studies with adult samples as they have lived longer and have had more time to process the incidence.

The reported points of disclosure align with findings in other studies (Priebe and Svedin, 2008; Walsh et al., 2010; Hartill et al., 2021; Mountjoy et al., 2021a). Increased significance of friendships in adolescence might be reflected in the result that peers was the most frequent recipient of disclosures. Adolescents may feel more comfortable talking to same-aged peers than talking to adults

(Priebe and Svedin, 2008), also underlined by the reasons provided in this study for not wanting to use the support system in school like feeling "more comfortable talking to someone else".

The fact that elite- and recreational athletes disclosed less often than the reference students support former research highlighting sport-specific barriers to disclosure like fear of consequences for their sport career, losing their "tough" sport identity, or losing social belonging (Mountjoy et al., 2016; Bjørnseth and Szabo, 2018; Kerr et al., 2019; Solstad, 2019). Athletes may be socialized into a sports environment where inappropriate behaviors and comments become normalized. Consequently, situations may not be disclosed although it might have negative personal impacts (Toftegaard, 2001; Parent and Fortier, 2018).

We cannot explain the observed gender difference in disclosure from the results in this study, but it corresponds to other researchers' findings (Priebe and Svedin, 2008; Hébert et al., 2009; Walsh et al., 2010; Mountjoy et al., 2021a), and could be related to underreporting of SHA among boys and the stereotype that girls are more prone to seek help for health-related issues (Lemaigre et al., 2017). The societal norm of male masculinity and toughness in sport may be another barrier to disclose SHA for male athletes as some forms of harassment might be considered harmless and natural for boys (Hartill et al., 2021), and showing vulnerability and emotions may be judged as a weakness (Sivagurunathan et al., 2019). Male victims of SHA are also suggested to blame themselves for not hindering the incidence, possibly preventing them from disclosing (Hébert et al., 2009). Striving to fit into a peer group may reinforce barriers and maintain a culture of silence, especially in adolescents.

Implemented measures against sexual harassment and abuse

Considering the results in this study, reflecting the content in the reports received by the schools, it is unfortunate that few adolescents reported at T2 that their school had implemented measures against SHA. However, it corresponds with our findings regarding no change in awareness of reporting procedures, and even a negative change in awareness of support systems. If measures had been implemented in school, it would have been likely that the adolescents' awareness of resources also would increase (Hayes-Smith and Levett, 2010). The schools spent much time restructuring the school day and adapt to online teaching during COVID-19 lockdown. Nevertheless, we believe that information about SHA and available resources could have been provided digitally in all schools.

Strengths and limitations

The main strengths are the inclusion of a large and representative sample of adolescent athletes and non-athletes from different geographical parts of Norway, as well as the inclusion of coaches and leaders, and a high response rate. Limitations are connected to wordings and structure of the questionnaire. If the adolescents linked the word "disclosed" to formal disclosure only and responded "no", follow-up questions about less formal points of disclosure would be left out. Additionally, methodological factors may also account for the negative change in disclosure as we examined lifetime SHA and disclosure at T1 and 12 months SHA and disclosure at T2. Willingness to disclose could be affected by factors which was not included in this paper like type of SHA, frequency, and relation to the perpetrator.

Implications and future studies

Actions should be taken to increase awareness about relevant report- and support resources to close the gap from victimization to disclosure and help-seeking. Such resources should be accessible and adapted to resonate with adolescents' needs, highlighting the importance of user involvement. Peers may be the first recipient of information about SHA victimization, indicating a need to include peer

support in preventive programs for SHA. Concerning our findings of different rates of disclosure between athletes and reference students, future studies should closely examine sport-specific barriers to disclosure.

CONCLUSION

Awareness of available report and support resources in school was limited among adolescents and coaches, but satisfactory among school leaders. One in five adolescents disclosed experiences of SHA, mainly to peers and family members. Most of the adolescents did not notice if their school implemented any measures to reduce SHA or increase awareness about available resources. These results call for increased institutional effort, ideally with adolescent' user involvement, to lower barriers for help-seeking and relevance of available resources.

Abbreviations:
SHA: sexual harassment and abuse

Acknowledgments
The authors thank all the students, school leaders, and coaches for taking part in this study, and Lena Kristin Bache-Mathiesen for statistical advice.

Conflicts of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions
All authors contributed to the planning of the project, initiated by JSB. NS and JSB collected the data. NS wrote the first draft of the manuscript. All authors contributed to revision of the manuscript and approved the final version.

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Table 1 Baseline (T1) characteristics of the adolescent sample.

	Elite athletes	**Recreational athletes**	**Reference students**	**p-value**	**Effect size, η^2/*V***
Boys (*n*=601, 50.1%)	**(*n*=334)**	**(*n*=178)**	**(*n*=89)**		
Heterosexual orientation, *n* (%)	327 (97.9)	178 (100.0)	84 (94.4)	n/a	n/a
Living with one or two parents, *n* (%)	211 (63.2)[a]	152 (85.4)[b]	81 (91.0)[b]	≤.001	*V*: .275
First- or second-generation immigrants, *n* (%)	13 (3.9)[a]	21 (11.8)[b]	18 (20.2)[b]	≤.001	*V*: .211
Training sessions per week, mean (SD)	10.6 (3.1)[a]	9.5 (3.2)[b]	4.2 (2.9)[c]	≤.001	η^2: .332
Training hours per week, mean (SD)	16.8 (5.5)[a]	15.7 (6.1)[a]	6.9 (5.7)[b]	≤.001	η^2: .266
Competitive sport, *n* (%)	324 (97.0)[a]	147 (82.6)[b]	18 (20.2)[c]	≤.001	*V*: .675
Girls (*n*=595, 49.6%)	**(*n*=294)**	**(*n*=127)**	**(*n*=174)**		
Heterosexual orientation, *n* (%)	280 (95.2)	123 (96.9)	163 (93.7)	.447	*V*: .052
Living with one or two parents, *n* (%)	195 (66.3)[a]	114 (89.7)[b]	162 (93.1)[b]	≤.001	*V*: .314
First- or second-generation immigrants, *n* (%)	16 (5.4)[a]	4 (3.1)[a]	30 (17.2)[b]	≤.001	*V*: .207
Training sessions per week, mean (SD)	9.6 (2.4)[a]	8.8 (3.5)[b]	5.1 (3.5)[c]	≤.001	η^2: .295
Training hours per week, mean (SD)	15.6 (5.7)[a]	14.2 (5.4)[b]	7.0 (5.4)[c]	≤.001	η^2: .315
Competitive sport, *n* (%)	285 (96.9)[a]	97 (76.4)[b]	45 (25.9)[c]	≤.001	*V*: .679

η2 = Eta-squared effect size; V = Cramer's V effect size; SHA = sexual harassment and abuse, SH=sexual harassment, n/a: not applicable - statistical assumptions violated.

[a,b,c]: subscripts with different letters indicate significant differences between the school groups.

n=4 missing (non-binary gender)

Table 2 Adolescents', leaders', and coaches' awareness of reporting systems and support mechanisms in their school system.

	Adolescents			Leaders		Coaches*
	Elite athletes (*n*=630)	**Recreational athletes (n=307)**	**Reference students (*n*=263)**	**Sport high schools (n=47)**	**Non-sport high schools (n=12)**	**Sport high schools (n=189)**
Reporting systems						
Yes	72 (11.4)	45 (14.7)	20 (7.6)	44 (93.6)	12 (100.0)	98 (51.9)
No	106 (16.8)	51 (16.6)	41 (15.6)	2 (4.3)	-	6 (3.2)
Do not know	452 (71.7)	211 (68.7)	202 (76.8)	1 (2.1)	-	85 (45.0)
Support mechanisms						
Yes	199 (31.6)	123 (40.1)	86 (32.7)	45 (95.7)	11 (91.7)	97 (51.3)
No	40 (6.3)	19 (6.2)	22 (8.4)	-	1 (8.3)	1 (0.5)
Do not know	391 (62.1)	165 (53.7)	155 (58.9)	2 (4.3)	-	91 (48.1)

* *n*=1 missing coach
The results are presented from baseline data (T1) as number (percentages)

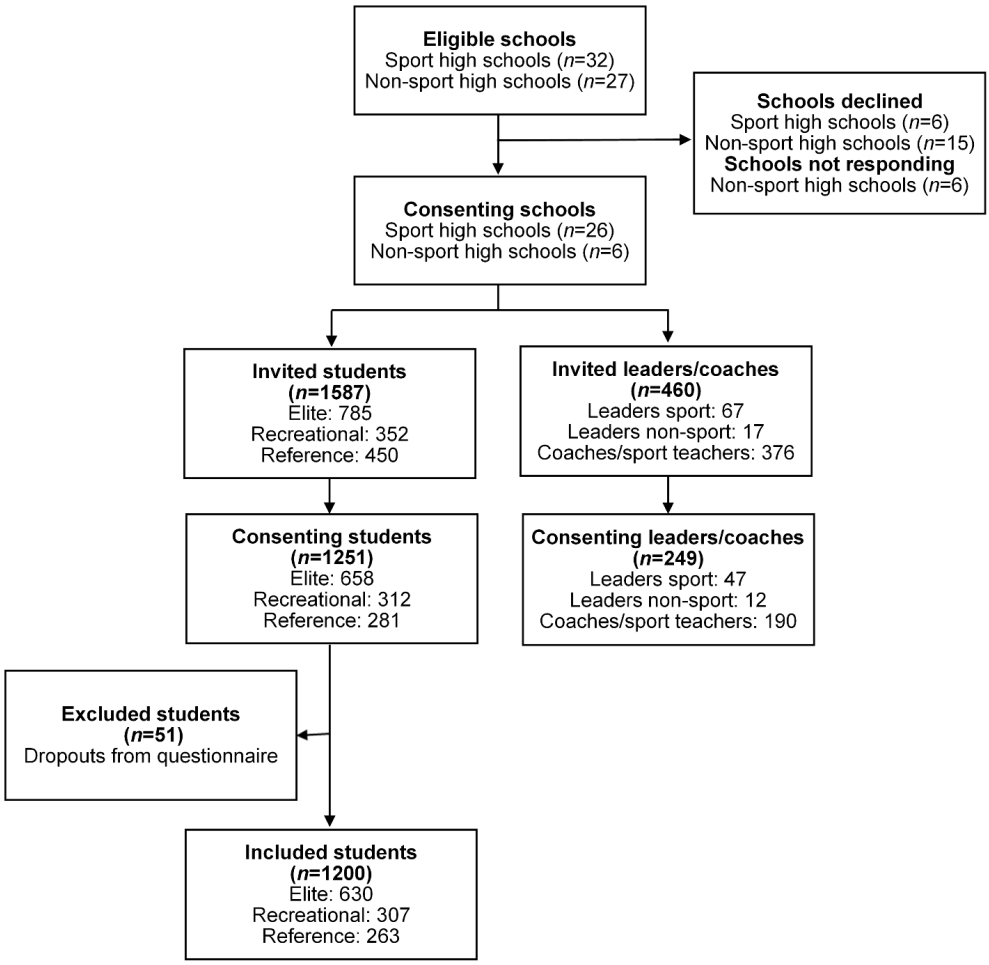

Figure 1 Flow chart of the recruiting process of adolescents, leaders, and coaches. All consenting schools were represented by the included students and coaches/leaders.

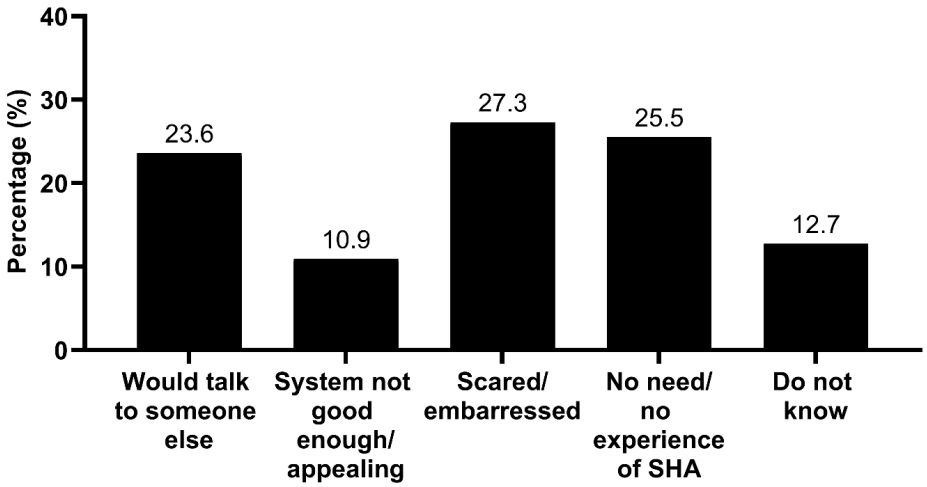

Figure 2 Reported reasons for not using the support system in school.
n=55 adolescents who choose to comment upon why they would not consider using the support system. SHA: sexual harassment and abuse.

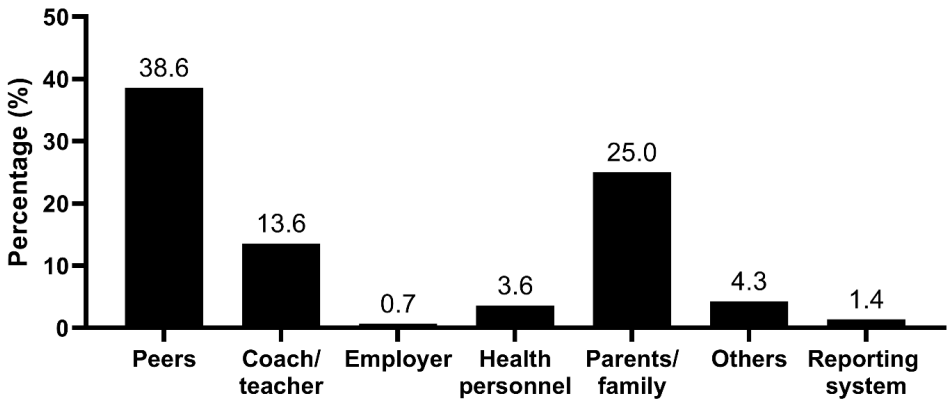

Figure 3 Reported points of disclosure of SHA in the school setting (*n*=140).
NOTE: The participants could mark several options. The numbers do not add up to 100% because the participants could report points of disclosure in other settings not reported here (sport setting and free time setting).

Appendix I

Database search strategy for the literature review in the dissertation

Date of database search: May 03, 2023.

PubMed:

("sexual harassment" OR “sexual harassment”[mesh] OR "sexual abuse" OR "sexual violence" OR "sexual victimization" OR "sexual coercion" OR "gender harassment" OR "sexual harm" OR “sexual assault” OR “sexual exploitation” OR “sexual misconduct”) AND (sport* OR sports[mesh] OR athlet* OR athletes[mesh] OR exercise OR exercise[mesh]) AND (youth* OR adolescent* OR adolescents[mesh] OR young OR student* OR students[mesh] OR teen* OR child* OR children[mesh] OR girls OR boys) AND (prevalence OR epidemiology[mesh] OR frequen* OR occurrence* OR inciden* OR incidence[mesh])

- ➔ **181 publications**

Web of Science/SPORTDiscus:

("sexual harass*" OR "sexual abuse*" OR "sexual violence*" OR "sexual victim*" OR "sexual coerc*" OR "gender harass*" OR “sexual harm*” OR “sexual assault*” OR “sexual exploit*” OR “sexual miscond*”) AND (sport* OR athlete* OR exercise*) AND (youth* OR adolescent* OR young* OR student* OR teen* OR child* OR girl* OR boy*) AND (prevalence* OR epidemiolog* OR frequenc* OR occurrenc* OR incidence*)

- ➔ **Web of Science: 189 publications**
- ➔ **SPORTDiscus: 34 publications**

Inclusion and exclusion criteria for screening of publications.

Inclusion criteria	Exclusion criteria
	Population
- Adolescent athletes/adolescents involved in sports (≤19 years) - Adults who retrospectively report experiences of SHA in childhood/adolescence before the age of 19 - Adolescent and adult samples in the same study, with separate age group analysis for adolescents - All genders - n > 100 - Response rate ≥ 20%	- Only samples including adolescents not involved in sports - Adults - Adolescent and adult samples in the same study, without separate age group analysis for adolescents - n < 100 - Response rate < 20%
	Outcome
- SHA victimization	- SHA perpetration - Several types of violence without separating for SHA - Consensual sexual experiences - Dating violence/relationship abuse
	Design
- Original research - Quantitative research	- Systematic reviews, meta-analyses - Qualitative research - Scale development/validation studies
	Publication
- Peer reviewed, published papers - Reports based on original research - Published in the year of 2000 or later - Language: English or Scandinavian languages	- Abstracts, books, media reports, police records - Publications without access before 07.05.2023 - Published before the year of 2000 - Language: others than English or Scandinavian languages

SHA: Sexual harassment and abuse, including various operationalizations, e.g., sexual violence, sexual harm, sexual misconduct, sexual assault etc.

Appendix II

Approval letter from the Regional Committees for Medical and Health Research Ethics

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Hege Cathrine Finholt, PhD	22857547	15.05.2018	2018/661 REK sør-øst D
			Deres dato:	**Deres referanse:**
			20.03.2018	

Vår referanse må oppgis ved alle henvendelser

Jorunn Sundgot-Borgen
Norges idrettshøgskole

2018/661 Seksuell trakassering blant elever på toppidrettsgymnas og i vanlig videregående skole

Forskningsansvarlig: Norges idrettshøgskole
Prosjektleder: Jorunn Sundgot-Borgen

Vi viser til søknad om forhåndsgodkjenning av ovennevnte forskningsprosjekt. Søknaden ble behandlet av Regional komité for medisinsk og helsefaglig forskningsetikk (REK sør-øst D) i møtet 25.04.2018. Vurderingen er gjort med hjemmel i helseforskningsloven (hfl.) § 10.

Prosjektleders prosjektbeskrivelse
Prosjektets formål er å kartlegge seksuell trakassering blant elever på alle landets toppidrettsgymnas og i et representativt utvalg vanlige videregående skoler. Dette skal gjøres ved to runder med spørreskjema i 1. klasse og 3 klasse, samt ved dybdeintervju i 1. klassse med om lag 8 elever fra begge skoletyper, og som angir opplevd trakassering. Prosjektet kartlegger også en rekke positive og symptomorienterte helsevariabler, og undersøker hva slags sammenhenger det er mellom dem og seksuell trakassering. Prosjektet kartlegger også opplevelse av varsling og ivaretagelse hos de som angir trakassering samt hvilke tiltak de som har trakasseringserfaringer selv anfører som nyttige. Med sitt omfang, design og instrumentering er prosjektet så lang man kjenner til, det mest omfattende på dette området, og kan gi svar på både omfang og relasjoner til helse, men også i hvilken grad idrett kan fremstå som en beskyttende eller risikokontekst for seksuell trakassering.

Vurdering
Det omsøkte prosjektet søker kunnskap om omfanget av seksuell trakassering på toppidrettsgymnas og et utvalg vanlige videregående skoler. Formålet er å finne ut om seksuell trakassering har konsekvenser for deltakelse i idrett, og hvilke konsekvenser det kan ha for psykisk helse. Studien vil også bidra til å etablere kunnskap om omfanget av seksuell trakassering og hvilke tiltak som bør iverksettes for å begrense dette. Deltakerne vil bli bedt om å fylle ut et spørreskjema i 1. klasse og i 3. klasse. Deretter vil et visst antall elever som har opplevd seksuell trakassering bli invitert til et dybdeintervju. Også ledere og trenere vil delta i prosjektet ved å fylle ut spørreskjema. Alle deltakere skal samtykke til å delta.

Komiteen har ingen innvendinger til studien. Komiteen har imidlertid en kommentar til informasjonsskrivet til trenere og rektorer:
- Overskrift og innledning må få frem at studien også gjelder elever som går på allmennfag og ikke kun toppidrettsutøvere.

Komiteen ber også om at i alle informasjonsskrivene må det fremgå klart at studien gjelder seksuell trakassering/uønsket seksuell oppmerksomhet, og ikke kun seksuell trakassering.

På denne bakgrunn setter komiteen som vilkår for godkjenning at informasjonsskrivene revideres i tråd med komiteens kommentarer og ettersendes til orientering.

Vedtak
Med hjemmel i helseforskningsloven § 9 jf. 33 godkjenner komiteen at prosjektet gjennomføres under forutsetning av at ovennevnte vilkår oppfylles.

I tillegg til vilkår som fremgår av dette vedtaket, er godkjenningen gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknad og protokoll, og de bestemmelser som følger av helseforskningsloven med forskrifter.

Tillatelsen gjelder til 12.12.2021. Av dokumentasjonshensyn skal opplysningene likevel bevares inntil 12.12.2026. Forskningsfilen skal oppbevares atskilt i en nøkkel- og en opplysningsfil. Opplysningene skal deretter slettes eller anonymiseres, senest innen et halvt år fra denne dato.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helsedirektoratets veileder for «Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse og omsorgssektoren».

Dersom det skal gjøres vesentlige endringer i prosjektet i forhold til de opplysninger som er gitt i søknaden, må prosjektleder sende endringsmelding til REK.

Prosjektet skal sende sluttmelding på eget skjema, senest et halvt år etter prosjektslutt.

Komiteens avgjørelse var enstemmig.

Klageadgang
REKs vedtak kan påklages, jf. forvaltningslovens § 28 flg. Klagen sendes til REK sør-øst D. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK sør-øst D, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Vi ber om at alle henvendelser sendes inn på korrekt skjema via vår saksportal: http://helseforskning.etikkom.no. Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

Finn Wisløff
Professor em. dr. med.
Leder

Hege Cathrine Finholt, PhD
Rådgiver

Kopi til: kristian.sollesnes@nih.no
Norges idrettshøgskole ved øverste administrative ledelse: postmottak@nih.no

Appendix III

Approval from the Norwegian Centre for Research Data

Sikt

Vurdering av behandling av personopplysninger

Referansenummer
960987

Vurderingstype
Standard

Dato
08.07.2019

Prosjekttittel
Seksuell trakassering blant elever på toppidrettsgymnas og vanlige videregående skoler (allmennfag)

Behandlingsansvarlig institusjon
Norges idrettshøgskole / Institutt for idrettsmedisinske fag

Prosjektansvarlig
Jorunn Sundgot-Borgen

Prosjektperiode
01.03.2019 - 01.03.2022

Kategorier personopplysninger
Alminnelige
Særlige

Lovlig grunnlag
Samtykke (Personvernforordningen art. 6 nr. 1 bokstav a)
Uttrykkelig samtykke (Personvernforordningen art. 9 nr. 2 bokstav a)

Behandlingen av personopplysningene er lovlig så fremt den gjennomføres som oppgitt i meldeskjemaet. Det lovlige grunnlaget gjelder til 01.03.2027.

Meldeskjema

Kommentar
Prosjektet er vurdert og godkjent etter helseforskningsloven § 10 av REK sør-øst i vedtak av 15.5.2018, deres referanse 2018/661 (se under Tillatelser).

Det er NSDs vurdering at behandlingen vil være i samsvar med personvernlovgivningen, så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet den 08.07.2019 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

Alle de registrerte er over 16 år, behandlingen har et begrenset omfang, utvalget er ikke altfor stort, og datainnsamlingen baserer seg på deltakernes samtykke. Det vurderes derfor at det ikke foreligger en høy risiko for fysiske personers rettigheter og friheter, og det kreves således ikke personvernkonsekvensvurdering (DPIA) jf. personvernforordningen art. 35.

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:
https://nsd.no/personvernombud/meld_prosjekt/meld_endringer.html

Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle særlige kategorier av personopplysninger om etnisk opprinnelse, helse og seksuelle forhold eller orientering, samt alminnelige personopplysninger frem til 01.03.2022. Data med personopplysninger oppbevares internt ved behandlingsansvarlig institusjon til 01.03.2027 for dokumentasjonshensyn og vilkår fra Regionale komiteer for medisinsk og helsefaglig forskningsetikk.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til

et samtykke i samsvar med kravene i art. 4 nr. 11 og art. 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse, som kan dokumenteres, og som den registrerte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være den registrertes uttrykkelige samtykke, jf. personvernforordningen art. 6 nr. 1 a), jf. art. 9 nr. 2 bokstav a, jf. personopplysningsloven § 10, jf. § 9 (2).

LOVLIG GRUNNLAG FOR TREDJEPERSON
Det skal behandles opplysninger om tredjeperson. Tredjepersoner er mor og far til utvalg 1 og utvalg 2 (elever på toppidrettsgymnas og videregående skoler). Prosjektet vil behandle personopplysninger for tredjepersoner med grunnlag i en oppgave av allmenn interesse. Prosjektet går ut på å kartlegge omfanget av seksuell trakassering i og utenfor idretten, hvem som utøver trakasseringen, sammenhengen mellom psykisk helse, motstandsdyktighet og opplevd trakassering, om varslings- og beredskapsordninger eksisterer/fungerer, samt deltakernes forslag til forebyggende tiltak. I denne sammenheng vil elevene bli spurt om mor og fars etniske bakgrunn. Det er ingen andre personopplysninger om tredjepersoner som vil fremkomme.

Det er få opplysninger, varigheten er relavtivt kort, og informasjonssikkerheten er god. Det er vår vurdering at samfunnets interesse i at behandlingen finner sted klart overstiger ulempene for den enkelte, og at lovlig grunnlag for behandlingen av opplysninger om tredjepersoner vil være allmenn interesse jf. personvernforordningen art. 6 nr. 1 bokstav e, jf. art. 9 nr. 2 bokstav j, jf. personopplysningsloven §§ 8 og 9.

PERSONVERNPRINSIPPER
NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke viderebehandles til nye uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER
Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

TREDJEPERSONERS RETTIGHETER
Tredjepersoner har så lenge de kan identifiseres i datamaterialet følgende rettigheter: innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20), og protest (art 21).

Varigheten for behandling av opplysningene er kort, omfanget av opplysninger er lite, og mengden av opplysninger er svært lav og begrenset. Det vurderes derfor at det kan unntas fra informasjonsplikten jf. personvernforordningen art. 14 nr. 5 bokstav b, ettersom de ikke vil ha særlig nytte av dette. Utvalg 1 og 2 (deres barn) vil også kunne informere tredjepersoner (sine foreldre) om at behandlingen finner sted.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER
NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

SurveyXact er databehandler i prosjektet. NSD legger til grunn at behandlingen oppfyller kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og eventuelt rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp underveis (hvert annet år) og ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet/pågår i tråd med den behandlingen som er dokumentert.

Lykke til med prosjektet!

Kontaktperson hos NSD: Karin Lillevold
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Appendix IV

International Clinical Trial Registration

ClinicalTrials.gov Protocol Registration and Results System (PRS) Receipt
Release Date: August 20, 2019

ClinicalTrials.gov ID: NCT04003675

Study Identification

Unique Protocol ID:	2019/FO244849
Brief Title:	Sexual Harassment in and Outside Sports
Official Title:	Sexual Harassment Among Students at Elite Sport High Schools and Regular High Schools
Secondary IDs:	

Study Status

Record Verification:	August 2019
Overall Status:	Enrolling by invitation
Study Start:	October 2019 [Anticipated]
Primary Completion:	December 2020 [Anticipated]
Study Completion:	December 2020 [Anticipated]

Sponsor/Collaborators

Sponsor:	Norwegian School of Sport Sciences
Responsible Party:	Principal Investigator Investigator: Professor Jorunn Sundgot-Borgen [jsundgot-borgen] Official Title: Professor Affiliation: Norwegian School of Sport Sciences
Collaborators:	The Norwegian Women´s Public Health Association Norwegian Extra Foundation for Health and Rehabilitation University of Agder University of Toronto

Oversight

U.S. FDA-regulated Drug:	No
U.S. FDA-regulated Device:	No
U.S. FDA IND/IDE:	No
Human Subjects Review:	Board Status: Approved Approval Number: 2018/661 Board Name: The Regional Committees for Medical and Health Research Ethics Board Affiliation: The Regional Committees for Medical and Health Research Ethics

Phone: 22845511
Email: post@helseforskning.etikkom.no
Address:

Gullhaugveien 1-3, 0484 Oslo, Norway

Data Monitoring: No

FDA Regulated Intervention: No

Study Description

Brief Summary: This study examines sexual harassment and abuse in and outside sports among adolescent elite athlete boys and girls, adolescent control students, trainers and leaders at elite sport high schools and regular high schools in Norway.

Detailed Description: The purpose of the study is to examine the prevalence and outcome of sexual harassment in and outside sports, including who the perpetrators are, the association between experienced sexual harassment and psychological health, if reporting mechanisms and emergency plans exist and function, and the participants suggestions for preventive strategies. The knowledge from this study will be a good basis to further establish and implement strategies to prevent sexual harassment in the future.

Students, trainers (with more than 20 % employment status) and leaders at elite sport high schools and regular high schools in Norway will answer a questionnaire at two measurement points. After the first measurement point a sample of randomly selected students who report experiences with sexual harassment, in addition to a sample of trainers and leaders, will also be invited to participate in an individual in-depth interview.

Conditions

Conditions: Sexual Harassment
Sexual Abuse
Psychological Impairment
Prevention

Keywords:

Study Design

Study Type: Observational

Observational Study Model: Case-Control

Time Perspective: Prospective

Biospecimen Retention: None Retained

Biospecimen Description:

Enrollment: 2300 [Anticipated]

Number of Groups/Cohorts: 3

Groups and Interventions

Groups/Cohorts	Interventions
Adolescent elite athletes	

Groups/Cohorts	Interventions
Adolescent boys and girls elite athletes over 16 years of age studying at elite sport high schools in Norway.	
Adolescent controls Adolescent boys and girls over 16 years of age studying at regular high schools in Norway.	
Trainers and leaders Trainers (with more than 20 percent employment status) at elite sport high schools, and leaders/principals at elite sport high schools and regular high schools.	

Outcome Measures

Primary Outcome Measure:

1. Sexual harassment
   Adolescent elite athletes and controls will answer a self-reported questionnaire regarding prevalence of sexual harassment, awareness of reporting mechanisms and emergency plans, suggestions for how to prevent sexual harassment.

   [Time Frame: September 2019 and December 2020]

Secondary Outcome Measure:

2. Symptoms of psychological complaints (anxiety and depression)
   Adolescent elite athletes and controls will answer the self-reported questionnaire Symptom Check List - 10. The questionnaire consists of 10 items.The participants answer how much they feel affected by each item on a 4-point scale ranging from "not affected" to "very much affected".

   [Time Frame: September 2019 and December 2020]
3. Symptoms of eating disorders
   Adolescent elite athletes and controls will answer the self-reported questionnaire "Eating Disorder Examination Questionnaire-6". The questionnaire consists of 28 items measuring symptoms and severity of eating disorders.

   [Time Frame: September 2019 and December 2020]
4. Health-related quality of life
   Adolescent elite athletes and controls will answer the self-reported questionnaire "KIDSCREEN-10". The questionnaire consists of 10 items measuring global health-related quality of life.

   [Time Frame: September 2019 and December 2020]
5. Resilience
   Adolescent elite athletes and controls will answer the self-reported questionnaire "The Resilience Scale for Adolescents (READ)" measuring their ability to handle stress and negative life events. The participants are asked to indicate how much they agree or disagree to 28 items using a 5-point Likert scale.

   [Time Frame: September 2019 and December 2020]
6. Self-confidence and self-esteem
   Adolescent elite athletes and controls will answer the self-reported questionnaire "The Self-liking and Competence Scale" measuring two components of self–esteem (self-liking and self-confidence). The participants are asked to indicate how much they agree or disagree to 20 items using a 5-point Likert scale.

   [Time Frame: September 2019 and December 2020]
7. Subjective health complaints
   Adolescent elite athletes and controls will answer the self-reported questionnaire "Health Behavior in School Children" measuring how often they have experienced 8 different physical and psychological health complaints (on a five-point scale ranging from almost every day to seldom/never) during the last 6 months.

   [Time Frame: September 2019 and December 2020]
8. Sexual harassment

Trainers and leaders will answer a questionnaire regarding their experiences with incidents of sexual harassment, awareness of reporting mechanisms and emergency plans, suggestions for how to prevent sexual harassment.

[Time Frame: September-October 2019]

9. Sexual harassment interview
In-depth interviews with students, trainers and leaders about their experiences with sexual harassment, awareness of reporting mechanisms and suggestions for how to prevent sexual harassment in the future.

[Time Frame: Trainers and leaders will complete the questionnaire in September-october 2019]

Eligibility

Study Population:	Students: Students in 2^nd grade at public and private elite sport high schools in Norway and a corresponding number of control students in 2^nd grade at representative regular high schools (no specialization) in Buskerud county. Trainers and leaders: All administrative responsible employees (principles/ inspectors) at public and private elite sport high schools and regular high schools, in addition to trainers at elite sport high schools with more than 20 % employment status.
Sampling Method:	Non-Probability Sample
Minimum Age:	16 Years
Maximum Age:	
Sex:	All
Gender Based:	
Accepts Healthy Volunteers:	Yes
Criteria:	Inclusion Criteria: • Over 16 years of age • Students in 2^nd grade elite sport high schools in Norway • Students in 2^nd grade at regular high schools (no specialization) in Buskerud in Norway • Teachers with more than 20 percent employment status at elite sport highs schools • Leaders/principles at the attending elite sport- and regular high schools Exclusion Criteria: • Students under 16 years of age • Trainers with less than 20 percent employment status

Contacts/Locations

Central Contact Person:	
Central Contact Backup:	
Study Officials:	Jorunn Sundgot-Borgen, PhD Study Chair Norwegian School of Sport Sciences
Locations:	**Norway** Norwegian school of sport sciences Oslo, Norway, 0806 Contact: Jorunn Sundgot-Borgen, PhD +4792241745 jorunn.sundgot-borgen@nih.no

IPDSharing

Plan to Share IPD: Undecided

References

Citations:

Links:

Available IPD/Information:

Appendix V

Informed consent letter to the students

NORGES IDRETTSHØGSKOLE

Elever

Hei!

Dette er en forespørsel til deg om å delta i et forskningsprosjekt som gjennomføres på vegne av Norges Idrettshøgskole (NIH). Før du besvarer spørreskjemaet ber vi deg lese igjennom informasjonsskrivet vedlagt under.

Link til spørreskjemaet: <*link*>

Hensikt
Hensikten med prosjektet er å kartlegge erfaringer med seksuell trakassering/uønsket seksuell oppmerksomhet hos elever på toppidrettsgymnas og ordinære videregående skoler.
Ledelsen ved din skole har takket ja til at skolen deltar, men det er selvfølgelig frivillig for deg å delta. Dersom du nå velger å delta, kan du når som helst på et senere tidspunkt velge å trekke deg fra studien uten å oppgi noen grunn.

Hva innebærer prosjektet?
Dersom du velger å delta vil du bli bedt om å besvare et elektronisk spørreskjema nå i 2. klasse og et skjema i 3.klasse. Det tar ca. 20-30 minutter å fylle ut spørreskjemaet. Skjemaet inneholder spørsmål knyttet til dine erfaringer med seksuell trakassering, på eller utenfor skolen, og noen spørsmål knyttet til ulike forhold som kan ha sammenheng med opplevd trakassering (psykiske plager, selvfølelse, livskvalitet, samt forhold til mat og kropp). Resultatene fra spørreskjemaundersøkelsen vil bli brukt i vitenskapelige publiseringer, men uten at verken du eller din skole blir omtalt på noen måte.
I tillegg vil ca. 16 elever (8 fra hhv. toppidrettsgymnas og ordinære videregående skoler) trekkes tilfeldig ut og få forespørsel om å delta i en times intervju. Det er helt frivillig å delta i intervjuene, selv om du tidligere har takket ja til deltagelse på spørreskjemadelen.

Mulige fordeler og ulemper
Fordelen med å delta i prosjektet er at du kan bidra til økt kunnskap om seksuell trakassering i og utenfor skolen, og dermed bidra til å legge til rette for forebyggende tiltak slik at trakassering ikke forekommer i fremtiden. Det er ingen forventet risiko ved å delta, men det kan tenkes at de som har opplevd trakassering kan oppleve det krevende å besvare spørreskjemaet og/eller delta i intervju. Det er derfor opprettet en beredskapsplan med en bestemt kontaktperson på skolen som du kan henvende deg til dersom du skulle trenge oppfølging. Du kan også kontakte prosjektleder Jorunn Sundgot-Borgen.

Dersom du besvarer spørreskjemaet, og spesifikt samtykker til muligheten for å vinne premier, er du ved begge spørreskjemarundene med i trekningen av SuperGavekort til valgfrie butikker/nettbutikker. **Gavekortene fordeler seg slik: 40 stk SuperGavekort à kr 500, 50 stk SuperGavekort à kr 250 og 50 stk SuperGavekort à kr 150.**

Frivillig deltakelse og mulighet for å trekke ditt samtykke
Det er frivillig å delta i dette prosjektet. Du kan når som helst, og uten å oppgi noen grunn, trekke ditt samtykke til å delta i studien uten at det vil ha noen negative konsekvenser for deg. Du kan da kreve innsamlede opplysninger slettet dersom det er aktuelt.

Hvis du nå velger å si ja til å delta i spørreskjemaundersøkelsen kan du senere takke nei til å delta i intervju dersom du skulle bli forespurt om det.
Videre opplyses det om at du er forsikret dersom det skulle oppstå skade eller

komplikasjoner som følge av deltakelse i forskningsprosjektet. NIH er en statlig institusjon som betyr at NIH dekker en eventuell erstatning og ikke et forsikringsselskap.

Hva skjer med informasjonen om deg?
Informasjonen som registreres om deg behandles på bakgrunn av ditt samtykke, og skal kun brukes slik som beskrevet i hensikten med studien. Du har rett til innsyn i hvilke opplysninger som er registrert om deg og rett til å få korrigert/slettet eventuelle feil i de opplysningene som er registrert. Du har også rett til å få utlevert en kopi av dine personalopplysninger. Ved behov kan du også sende klage til personvernombudet ved NIH eller Datatilsynet angående behandlingen av dine personalopplysninger.

Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre gjenkjennende opplysninger. En kode knytter deg til dine opplysninger gjennom en navneliste. Prosjektleder har ansvar for den daglige driften av forskningsprosjektet og at opplysninger om deg blir behandlet på en sikker måte. Informasjon om deg vil bli anonymisert eller slettet senest fem år etter prosjektslutt.

Spørsmål?
Dersom du har spørsmål om studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Prosjektleder og professor ved NIH: Jorunn Sundgot-Borgen
  Telefon: 23 26 23 35 / 922 41 745,
  e-post: jorunn.sundgot-borgen@nih.no
- Personvernombud ved NIH: Rolf Haavik
  Tlf: 90 73 37 60, e-post: rolf.haavik@habberstad.no
- NSD – Norsk senter for forskningsdata AS
  Tlf: 55 58 21 17, e-post: personverntjenester@nsd.no

Godkjenning
Prosjektet er godkjent av Regional komité for medisinsk og helsefaglig forskningsetikk (REK) (2018/661) og Norsk senter for forskningsdata AS (NSD) har vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dersom du nå velger å delta i undersøkelsen trykker du på denne linken <*link*> og velger "jeg samtykker". Du vil da få tilgang til spørreskjemaet.

På forhånd takk!

NIH NORGES IDRETTSHØGSKOLE

Med vennlig hilsen

Jorunn Sundgot-Borgen, prosjektleder
Professor, PhD
Seksjon for idrettsmedisin
Norges Idrettshøgskole
Tlf.: +47 23 26 23 35 / +47 922 41 745
E-mail: jorunn.sundgot-borgen@nih.no

Nina Sølvberg
PhD. Stipendiat
Seksjon for idrettsmedisin
Norges idrettshøgskole
Tlf: +47 23262232 / +47 480 42 153
E-mail: nina.solvberg@nih.no

Appendix VI

Informed consent letter to the leaders and coaches

NORGES IDRETTSHØGSKOLE

Hei!

Dette er en forespørsel til deg som rektor/leder eller trener om å delta i forskningsprosjektet "seksuell trakassering på toppidrettsgymnas og ordinære videregående skoler" som gjennomføres på vegne av Norges Idrettshøgskole.

Før du svarer på undersøkelsen ber vi deg om å lese igjennom informasjonsskrivet vedlagt. Dersom du ønsker å delta klikker du på linken og gir ditt samtykke til deltagelse ved å klikke "jeg samtykker". Du får deretter tilgang til spørreskjemaet.

Link til spørreskjemaet: <*link*>

Hensikt
Hensikten med prosjektet er å kartlegge erfaringer med seksuell trakassering/uønsket seksuell oppmerksomhet hos elever, trenere og ledere når det gjelder seksuell trakassering på og utenfor skolen.

Hva innebærer prosjektet?
Du blir bedt om å fylle ut et elektronisk spørreskjema om dine erfaringer med, og evt. håndtering av seksuell trakassering i skolen, og i hvilken grad trakassering har vært et tema på din skole. Det tar ca. 5-10 minutter å besvare spørreskjemaet. I tillegg vil et tilfeldig utvalg ledere (n=8 fra toppidrettsgymnas og n=8 fra vanlige videregående skoler) og trenere (n=16) trekkes tilfeldig ut og inviteres til å delta i et intervju. Resultatene vil bli benyttet i vitenskapelige publiseringer sammen med data innhentet fra samtykkende elever.

Mulige fordeler og ulemper
Fordelen ved å delta i undersøkelsen er at du kan bidra til økt kunnskap om seksuell trakassering i skolen, og dermed bidra til å legge til rette for forebyggende tiltak slik at trakassering ikke forekommer i skolesettingen. Det er ikke forventet risiko forbundet med deltagelse. Det kan imidlertid tenkes at du før eller etter utfylling av spørreskjemaet har spørsmål knyttet til dette temaet, og det vil da være mulig å kontakte prosjektleder Jorunn Sundgot-Borgen.

Frivillig deltakelse og mulighet for å trekke sitt samtykke
Selv om din skole har takket ja til at skolen skal delta i undersøkelsen, er det selvfølgelig frivillig for deg å delta. Dersom du nå samtykker til å delta, kan du når som helst senere trekke deg fra studien uten å oppi noen grunn og uten at det får noen negative konsekvenser for deg. Du kan da kreve innsamlede opplysninger slettet dersom det er aktuelt.

Videre opplyses det om at du er forsikret dersom det skulle oppstå skade eller komplikasjoner som følge av deltakelse i forskningsprosjektet. NIH er en statlig institusjon som betyr at NIH dekker en eventuell erstatning og ikke et forsikringsselskap.

Hva skjer med informasjonen om deg?
Informasjonen som registreres om deg behandles på bakgrunn av ditt samtykke, og skal kun brukes slik som beskrevet i hensikten med studien. Du har rett til innsyn i hvilke opplysninger som er registrert om deg og rett til å få korrigert/slettet eventuelle feil i de opplysningene som er registrert. Du har også rett til å få utlevert en kopi av dine personalopplysninger. Ved behov kan du også sende klage til personvernombudet ved NIH eller Datatilsynet angående behandlingen av dine personalopplysninger.

En kode knytter deg til dine opplysninger gjennom en navneliste. Navnelisten oppbevares atskilt fra utfylte spørreskjema, og kun administrator har adgang til koblingen mellom personopplysninger og de avidentifiserte spørreskjemaene, som da ikke inneholder navn, eller andre opplysninger som kan tilbakeføres til din person.

Prosjektleder har ansvar for den daglige driften av forskningsprosjektet og at opplysninger om deg blir behandlet på en sikker måte. Informasjon om deg vil bli anonymisert eller slettet senest fem år etter prosjektslutt.

Spørsmål?
Dersom du har spørsmål om studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Prosjektleder og professor ved NIH, Jorunn Sundgot-Borgen
  Telefon: 23 26 23 35 / 922 41 745,
  e-post: jorunn.sundgot-borgen@nih.no
- Personvernombud ved NIH: Rolf Haavik
  Tlf: 90 73 37 60, e-post: rolf.haavik@habberstad.no
- NSD – Norsk senter for forskningsdata AS
  Tlf: 55 58 21 17, e-post: personverntjenester@nsd.no

Godkjenning
Prosjektet er godkjent av Regional komité for medisinsk og helsefaglig forskningsetikk (REK) (2018/661) og Norsk senter for forskningsdata AS (NSD) har vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dersom du nå etter å ha lest informasjonsskrivet samtykker til deltagelse, klikker du på denne linken: <*link*> og avgir ditt samtykke ved å velge "jeg samtykker". Du vil da få tilgang til spørreskjemaet.

På forhånd takk!

NIH NORGES IDRETTSHØGSKOLE

Med vennlig hilsen

Jorunn Sundgot-Borgen, prosjektleder
Professor, PhD
Seksjon for idrettsmedisin
Norges Idrettshøgskole
Tlf.: +47 23 26 23 35 / +47 922 41 745
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Seksjon for idrettsmedisin
Norges idrettshøgskole
Tlf: +47 23262232 / +47 480 42 153
E-mail: nina.solvberg@nih.no

Appendix VII

Questionnaire, adolescent version (T1)

Spørreskjema elever

Bakgrunnsinformasjon

Kjønn

(1) ☐ Mann
(2) ☐ Kvinne
(3) ☐ Annet (f.eks. trans*, interkjønn)

Alder (år)

Vennligst oppgi din alder i antall år_____

Høyde (cm)

Vennligst oppgi din høyde i cm_____

Vekt (kg)

Vennligst oppgi din vekt i kg_____

Seksuell orientering

(1) ☐ Heterofil
(2) ☐ Homofil (lesbisk eller homofil)
(3) ☐ Bifil
(5) ☐ Annet (f.eks. panfil, aseksuell)
(6) ☐ Vet ikke/ønsker ikke svare

Hva slags videregående skole/linje går du på nå?

(1) ☐ Toppidrett
(2) ☐ Idrettsfag (breddeidrett)
(3) ☐ Ordinær videregående skole (studiespesialiserende)

Nåværende bosituasjon

(1) ☐ Med begge foreldre/foresatte i samme hushold
(2) ☐ Med én forelder/foresatt
(3) ☐ Med venn(er)
(4) ☐ Internat
(5) ☐ Alene
(6) ☐ Annet

Har du selv og/eller dine foreldre innvandret til Norge?

(1) ☐ Ja, jeg selv og begge mine foreldre
(2) ☐ Ja, jeg selv og én av mine foreldre
(3) ☐ Ja, jeg selv, men begge mine foreldre er født i Norge
(4) ☐ Ikke jeg, men begge mine foreldre
(5) ☐ Nei

HVIS JA:
Hvilket land er du født i? *(nedtrekksliste)*

Hvilket land er din mor født i? *(nedtrekksliste)*
Hvis du er adoptert - velg fødelandet til din adoptivmor

Hvilket land er din far født i? *(nedtrekksliste)*
Hvis du er adoptert - velg fødelandet til din adoptivfar

Fysisk aktivitet og trening

Fysisk aktivitet er ALL kroppslig bevegelse (f.eks. å gå, sykle, skate, danse, friluftsliv og trening/idrett).
Trening er mer planlagt og regelmessig enn fysisk aktivitet, og noe en gjør for å vedlikeholde eller forbedre fysisk form (f.eks. drive ulike idretter, styrketrening, kondisjonstrening osv.).

I løpet av de siste fire ukene, hvor mye tid har du gjennomsnittlig PER UKE brukt på all fysisk aktivitet og trening slik at du blir varm og andpusten? (f.eks. 5 t og 30 min)
Beregn total fysisk aktivitet- og treningsmengde inkludert aktiv transport (f.eks. sykle til skolen), aktiviteter med venner/familie, gym/trening på skolen, aktivitet organisert i idrettslag/klubb og ikke-organisert aktivitet som f.eks. trening på treningssenter og annen egentrening som klatring, løping, dansing osv.

Antall timer per uke:_____
Antall minutter utover timer per uke:_____

I løpet av de siste fire ukene, hvor mange treningsøkter har du gjennomsnittlig hatt PER UKE?
Beregn organisert trening (f.eks. i idrettsklubb/lag), ikke-organisert trening (f.eks. egentrening på treningsstudio, joggetur osv.) og trening/gym på skolen. _____

I løpet av de siste fire ukene, hvor mye tid har du gjennomsnittlig PER UKE brukt på trening?
Beregn organisert trening (f.eks. i idrettsklubb/lag), ikke-organisert trening (f.eks. egentrening på treningsstudio, joggetur osv.) og trening/gym på skolen.

Antall timer per uke:_____
Antall minutter utover timer per uke:_____

Hvilke(n) idrett(er)/treningsform(er) driver du med?
Vennligst oppgi alle idrettene/treningsformene du driver med. Hvis du ikke driver med idrett/trening, vennligst skriv "ingen" _____

Driver du konkurranseidrett nå?

(1) □ Ja

(2) □ Nei

HVIS JA PÅ KONKURRANSEIDRETT:
Hvilken idrett er din primære konkurranseidrett?_____

Hvor gammel var du da du startet med konkurranseidretten din?_____

Hvor gammel var du da du valgte å «satse» på konkurranseidretten din/spesialisere deg?_____

Hvordan hevder du deg prestasjonsmessig i din konkurranseidrett?

(1) □ Klubbnivå (klubbmesterskap)

(2) □ Kretsnivå (kretslag/regionslag og/eller kretsmesterskap/kamper innenfor krets/region)

(3) □ Nasjonalt nivå (nasjonale konkurranser/kamper som Norgesmesterskap, Norgescup)

(4) □ Internasjonalt nivå (Europacup, Verdenscup, Europamesterskap, Verdensmesterskap, Ungdoms-OL)

Omtrent hvor mange reisedøgn har du i året i tilknytning til din konkurranseidrett? _____

Har du i løpet av de siste 12 måneder vært borte fra trening/konkurranse i mer enn 3 uker pga. skader/sykdom?

(1) □ Ja

(2) □ Nei

HVIS NEI PÅ KONKURRANSEIDRETT:

Har du drevet konkurranseidrett tidligere?

(1) □ Ja

(2) □ Nei

HVIS JA:
Samme oppfølgingsspørsmål som HVIS JA på «konkurranseidrett nå», men formulert i fortid.

Nedenfor følger 13 spørsmål som handler om ulike hendelser og opplevelser med uønsket seksuell oppmerksomhet/seksuell trakassering.

Vi ber om at du leser dette før du fortsetter:
Med seksuell trakassering menes «enhver form for uønsket seksuell oppmerksomhet som oppleves som krenkende, skremmende, fiendtlig, nedverdigende, ydmykende eller plagsom».

Det kan være å få kommentarer på kropp, utseende eller privatliv, eller andre meldinger med seksuelt innhold eller forslag om seksuelle tjenester (muntlig, skriftlig eller digitalt). Seksuell trakassering kan også være å bli utsatt for nærgående blikk, seksuelle kroppsbevegelser, blotting, forfølgning eller spredning av private/intime bilder uten at du ville det. Seksuell trakassering innebærer også ufrivillig klemming, kyssing eller annen fysisk berøring, samt voldtekt- og voldtektsforsøk. Seksuell trakassering kan forekomme på alle arenaer som f.eks på skolen, innen idrett, hjemme eller andre steder.

Når du svarer på spørsmålene, tenk bare på hendelser/opplevelser du opplevde som uønskede – altså som du på daværende tidspunkt ikke ønsket å delta i.

Forklaringer:
I skolesammenheng: i skoletiden og/eller arrangement i regi av skolen som avslutninger, samlinger, turer osv.
I idrettssammenheng utenfor skolen: f.eks. på klubbtrening, treningssenter, egentrening osv.
Utenfor skole- og idrettssammenheng: f.eks. på fritiden, på jobb, med venner, i familiesituasjoner osv.

1. Har du opplevd uønskede seksuelle hentydninger (slengbemerkninger, meldinger, fleip, erting) om din kropp, utseende, privatliv, seksuelle orientering eller lignende?
F.eks. «hore», «homo», «kuk», «bitch» osv.

(1) ☐ Ja
(2) ☐ Nei

HVIS JA:
Har du opplevd uønskede seksuelle hentydninger i skolesammenheng?
(i skoletiden og/eller arrangement i regi av skolen som avslutninger, treningsleir, turer osv.)

(1) ☐ Ja
(2) ☐ Nei

Har du opplevd uønskede seksuelle hentydninger i idrettssammenheng utenfor skolen? (f.eks på fotballtrening, treningssenter osv.)

(1) ☐ Ja
(2) ☐ Nei

Har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng? (på fritiden med venner, i familiesituasjon osv.)

(1) ☐ Ja
(2) ☐ Nei

HVIS SKOLESAMMENHENG:
Har du opplevd uønskede seksuelle hentydninger i skolesammenheng de siste 12 måneder?

(1) ☐ Ja
(2) ☐ Nei

Har du opplevd uønskede seksuelle hentydninger i skolesammenheng tidligere i livet?

(1) ☐ Ja

(2) ☐ Nei

HVIS 12 MND:

Hvor ofte har du opplevd uønskede seksuelle hentydninger i skolesammenheng de siste 12 måneder?

(1) ☐ Én enkelt gang

(2) ☐ Noen få ganger

(3) ☐ Ofte/regelmessig

Fra hvem har du opplevd uønskede seksuelle hentydninger i skolesammenheng de siste 12 måneder?

	Kjønn på gjerningsperson			
	Ikke opplevd	Kvinne	Mann	Begge kjønn
Venner/medelever	(1)	(2)	(3)	(4)
Lærer/trener/instruktør	(1)	(2)	(3)	(4)
Støtteapparat/helsepersonell (helsesykepleier, fysioterapeut, lege, psykolog, ernæringsfysiolog, etc.)	(1)	(2)	(3)	(4)
Andre	(1)	(2)	(3)	(4)

Eventuelle kommentarer: _____

HVIS TIDLIGERE:

Hvor ofte har du opplevd uønskede seksuelle hentydninger i skolesammenheng tidligere i livet?

(1) ☐ Én enkelt gang

(2) ☐ Noen få ganger

(3) ☐ Ofte/regelmessig

Fra hvem har du opplevd uønskede seksuelle hentydninger i skolesammenheng tidligere i livet?

	Kjønn på gjerningsperson			
	Ikke opplevd	Kvinne	Mann	Begge kjønn
Venner/medelever	(1)	(2)	(3)	(4)
Lærer/trener/instruktør	(1)	(2)	(3)	(4)
Støtteapparat/helsepersonell (helsesykepleier, fysioterapeut, lege, psykolog, ernæringsfysiolog, etc.)	(1)	(2)	(3)	(4)
Andre	(1)	(2)	(3)	(4)

Eventuelle kommentarer: _____

HVIS IDRETTSSAMMENHENG:

Har du opplevd uønskede seksuelle hentydninger i idrettssammenheng de siste 12 måneder?

(1) □ Ja

(2) □ Nei

Har du opplevd uønskede seksuelle hentydninger i idrettssammenheng tidligere i livet?

(1) □ Ja

(2) □ Nei

HVIS 12 MND:

Hvor ofte har du opplevd uønskede seksuelle hentydninger i idrettssammenheng de siste 12 måneder?

(1) □ Én enkelt gang

(2) □ Noen få ganger

(3) □ Ofte/regelmessig

Fra hvem har du opplevd uønskede seksuelle hentydninger i idrettssammenheng de siste 12 måneder?

	Kjønn på gjerningsperson			
	Ikke opplevd	Kvinne	Mann	Begge kjønn
Venner/lagkamerater	(1)	(2)	(3)	(4)
Trener/instruktør	(1)	(2)	(3)	(4)
Støtteapparat/helsepersonell (fysioterapeut, lege, psykolog, ernæringsfysiolog, etc.)	(1)	(2)	(3)	(4)
Familiemedlemmer	(1)	(2)	(3)	(4)
Andre	(1)	(2)	(3)	(4)

Eventuelle kommentarer: _____

HVIS TIDLIGERE:

Hvor ofte har du opplevd uønskede seksuelle hentydninger i idrettssammenheng tidligere i livet?

(1) □ Én enkelt gang

(2) □ Noen få ganger

(3) □ Ofte/regelmessig

Fra hvem har du opplevd uønskede seksuelle hentydninger i idrettssammenheng tidligere i livet?

	Kjønn på gjerningsperson			
	Ikke opplevd	Kvinne	Mann	Begge kjønn
Venner/lagkamerater	(1)	(2)	(3)	(4)
Trener/instruktør	(1)	(2)	(3)	(4)
Støtteapparat/helsepersonell (fysioterapeut, lege, psykolog, ernæringsfysiolog, etc.)	(1)	(2)	(3)	(4)
Familiemedlemmer	(1)	(2)	(3)	(4)
Andre	(1)	(2)	(3)	(4)

Eventuelle kommentarer: _____

HVIS UTENFOR SKOLE/IDRETT:

Har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng de siste 12 måneder?

(1) ☐ Ja
(2) ☐ Nei

Har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng tidligere i livet?

(1) ☐ Ja
(2) ☐ Nei

HVIS 12 MND:

Hvor ofte har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng de siste 12 måneder?

(1) ☐ Én enkelt gang
(2) ☐ Noen få ganger
(3) ☐ Ofte/regelmessig

Fra hvem har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng de siste 12 måneder?

	Kjønn på gjerningsperson			
	Ikke opplevd	Kvinne	Mann	Begge kjønn
Venner	(1)	(2)	(3)	(4)
Lærer/trener/instruktør	(1)	(2)	(3)	(4)
Helsepersonell (fysioterapeut,lege, psykolog, ernæringsfysiolog, etc.)	(1)	(2)	(3)	(4)
Familiemedlemmer	(1)	(2)	(3)	(4)
Arbeidsgiver	(1)	(2)	(3)	(4)
Andre	(1)	(2)	(3)	(4)

Eventuelle kommentarer: _____

HVIS TIDLIGERE:
Hvor ofte har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng tidligere i livet?

(1) □ Én enkelt gang
(2) □ Noen få ganger
(3) □ Ofte/regelmessig

Fra hvem har du opplevd uønskede seksuelle hentydninger utenfor skole- og idrettssammenheng tidligere i livet?

		Kjønn på gjerningsperson		
	Ikke opplevd	Kvinne	Mann	Begge kjønn
Venner	(1)	(2)	(3)	(4)
Lærer/trener/instruktør	(1)	(2)	(3)	(4)
Helsepersonell (fysioterapeut,lege, psykolog, ernæringsfysiolog, etc.)	(1)	(2)	(3)	(4)
Familiemedlemmer	(1)	(2)	(3)	(4)
Arbeidsgiver	(1)	(2)	(3)	(4)
Andre	(1)	(2)	(3)	(4)

Eventuelle kommentarer: _____

2. Har du opplevd uønskede seksuelle tilnærminger og/eller forslag/invitasjoner (muntlig, skriftlig eller digitalt) til seksuelle tjenester med tilbud/løfte om belønning eller privilegier? F.eks. fordeler i idrett/skole slik som "større sjanse for å komme på laget", "bedre karakter" etc.

(1) □ Ja
(2) □ Nei

HVIS JA, samme oppfølgingsspørsmål som for spm 1 (samme prosedyre også for spm. 3-13 under).

3. Har du opplevd ryktespredning eller latterliggjøring av dine prestasjoner (skole, idrett, kultur osv.) og/eller av deg som person pga. ditt kjønn eller din seksuelle orientering? F.eks. «fotball passer ikke for jenter».

4. Har du opplevd uønskede nærgående/seksuelt ladede blikk, stirring eller kroppsbevegelser?

5. Har du opplevd at noen har vist deg seksuelle bilder/videoer (inkludert på internett/sosiale medier) uten at du ville det?

6. Har du opplevd å bli eksponert for uønsket blotting (visning av intime kroppsdeler/kjønnsorgan)?

7. Har du opplevd å bli forfulgt av en person og/eller motta uønskede gaver, brev etc.?

8. Har du opplevd å bli utsatt for ydmykende behandling eller uønsket situasjon av seksuell karakter som har påvirket din selvrespekt og/eller hatt negativ innvirkning på din prestasjon (skole, idrett, kultur osv.)?

9. Har du opplevd uønsket tagning eller spredning av private bilder/videoer av deg med seksuelt innhold på mobil/internett/sosiale medier?

10. Har du opplevd uønsket fysisk kontakt som kroppsberøring (klyping, bli plukket på), klemming eller kyssing mot din vilje?

11. Har du opplevd å bli tvunget til uønsket seksuell handling (f.eks. beføling av bryster eller kjønnsorgan) og/eller uønsket seksuell omgang (f.eks. samleie, annen inntrengning i kroppens hulrom av gjenstander eller kroppsdeler, masturbasjon/onanering av andre, slikking av kjønnsorgan) uten at du samtykket til det?

12. Har du opplevd voldtekt?
Voldtekt defineres som seksuell omgang ved bruk av vold eller trusler (enten ved fysisk kontakt etter via internett), eller seksuell omgang med personer som er bevisstløse eller ute av stand til å gi sitt samtykke (som f.eks. ved søvn, beruselse, frykt). Det regnes også som voldtekt å bruke vold eller trusler til å få noen til å ha seksuell omgang med andre eller med seg selv, samt enhver form for seksuell omgang med barn under 14 år.

13. Har du opplevd voldtektsforsøk?
Voldtektsforsøk defineres som forsøk på voldtekt som avbrytes/ikke lykkes fordi offeret klarer å motsette seg handlingen.

HVIS JA PÅ EN ELLER FLERE AV SPØRSMÅLENE 1-13:

Varslet du noen om hendelsen(e)?

(1) ☐ Ja
(2) ☐ Nei

(HVIS JA PÅ VARSLET):
Varslet du noen om hendelsen(e) som skjer/skjedde i <u>skolesammenheng</u>? Evt. hvem? Du kan velge flere svaralternativer. Hvis du ikke varslet noen i denne sammenhengen, velg "ikke relevant".

(1) ☐ Venner/medelever/lagkamerater
(2) ☐ Lærer/trener/instruktør
(3) ☐ Arbeidsgiver
(4) ☐ Helsesykepleier/helsepersonell/støtteapparat
(5) ☐ Foreldre/familie
(6) ☐ Andre
(7) ☐ Brukte varslingssystem
(8) ☐ Ikke relevant

Varslet du noen om hendelsen(e) som skjer/skjedde i <u>idrettssammenheng utenfor skolen</u> (f.eks i forbindelse med klubbtrening, treningssenter, egentrening osv.)? Evt. hvem?
Du kan velge flere svaralternativer. Hvis du ikke varslet noen i denne sammenhengen, velg "ikke relevant".

(1) ☐ Venner/medelever/lagkamerater
(2) ☐ Lærer/trener/instruktør
(3) ☐ Arbeidsgiver
(4) ☐ Helsesykepleier/helsepersonell/støtteapparat
(5) ☐ Foreldre/familie
(6) ☐ Andre
(7) ☐ Brukte varslingssystem
(8) ☐ Ikke relevant

Varslet du noen om hendelsen(e) som skjer/skjedde utenfor skole- og idrettssammenheng (på fritiden, med venner, i familiesituasjoner osv.)? Evt. hvem? Du kan velge flere svaralternativer. Hvis du ikke varslet noen i denne sammenhengen, velg "ikke relevant".

(1) ☐ Venner/medelever/lagkamerater
(2) ☐ Lærer/trener/instruktør
(3) ☐ Arbeidsgiver
(4) ☐ Helsesykepleier/helsepersonell/støtteapparat
(5) ☐ Foreldre/familie
(6) ☐ Andre
(7) ☐ Brukte varslingssystem
(8) ☐ Ikke relevant

Etter at du har lest definisjonen av seksuell trakassering, mener du selv du kan ha bidratt til at noen har opplevd det?
Seksuell trakassering defineres som: «enhver form for **uønsket** seksuell oppmerksomhet som oppleves som krenkende, skremmende, fiendtlig, nedverdigende, ydmykende eller plagsom».

(1) ☐ Ja
(2) ☐ Nei

HVIS JA:
I hvilken sammenheng kan du ha bidratt til dette?
Flere svaralternativer mulig

(1) ☐ I skolesammenheng
(2) ☐ I idrettssammenheng utenfor skolen
(3) ☐ Utenfor idrett- og skolesammenheng

Har din skole rutiner for å varsle om seksuell trakassering?

(1) ☐ Ja
(2) ☐ Nei
(3) ☐ Vet ikke

HVIS JA:
Hvordan fikk du vite om disse rutinene?

(1) ☐ Skriftlig
(2) ☐ Muntlig
(3) ☐ Begge deler

Har din skole beredskapsrutiner og/eller tilbud om hjelp dersom noen blir utsatt for og/eller varsler om seksuell trakassering?

(1) ☐ Ja
(2) ☐ Nei
(3) ☐ Vet ikke

HVIS JA:
Hvordan fikk du vite om disse rutinene/hjelpetiltakene?

(1) ☐ Skriftlig
(2) ☐ Muntlig
(3) ☐ Begge deler

Ville du selv benyttet deg av beredskaps/hjelpetilbudet dersom det var aktuelt for deg?

(1) ☐ Ja
(2) ☐ Nei
(3) ☐ Vet ikke

HVIS NEI PÅ BEREDSKAPSRUTINER:
Kan du kort si hvorfor du ikke ville benyttet tilbudet? Hva kunne vært annerledes, forslag til andre tiltak du heller ville benyttet deg av?

_____

World Health Organization Quality of Life (WHOQOL-BREF)

(The WHOQOL Group, 1998)

Les følgende spørsmål og velg det svaret som passer best for hvordan du har hatt det de siste TO ukene.

Hvordan vil du vurdere kvaliteten på livet ditt?

(1) ☐ Svært dårlig
(2) ☐ Dårlig
(3) ☐ Verken god eller dårlig
(4) ☐ God
(5) ☐ Svært god

Hvor tilfreds er du med helsen din?

(1) ☐ Svært utilfreds
(2) ☐ Utilfreds
(3) ☐ Verken tilfreds eller utilfreds
(4) ☐ Tilfreds
(5) ☐ Svært tilfreds

Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965)

Vennligst kryss av for det alternativet som passer best for deg på hvert av de 10 utsagnene nedenfor:

	Helt enig	**Enig**	**Uenig**	**Sterkt uenig**
1. Jeg er stort sett fornøyd med meg selv	(1) ❑	(2) ❑	(3) ❑	(4) ❑
2. Noen ganger synes jeg at jeg ikke er god for noen ting	(1) ❑	(2) ❑	(3) ❑	(4) ❑
3. Jeg synes at jeg har flere gode kvaliteter	(1) ❑	(2) ❑	(3) ❑	(4) ❑
4. Jeg er i stand til å gjøre ting like godt som folk flest	(1) ❑	(2) ❑	(3) ❑	(4) ❑
5. Jeg føler at jeg ikke har mye å være stolt av	(1) ❑	(2) ❑	(3) ❑	(4) ❑
6. Til tider føler jeg meg ubrukelig	(1) ❑	(2) ❑	(3) ❑	(4) ❑
7. Jeg føler at jeg er en verdifull person, i det minste på samme nivå som andre	(1) ❑	(2) ❑	(3) ❑	(4) ❑
8. Jeg skulle ønske at jeg hadde mer respekt for meg selv	(1) ❑	(2) ❑	(3) ❑	(4) ❑
9. Alt i alt er jeg tilbøyelig til å føle meg mislykket	(1) ❑	(2) ❑	(3) ❑	(4) ❑
10. Jeg har en positiv innstilling til meg selv	(1) ❑	(2) ❑	(3) ❑	(4) ❑

Eating Disorder Examination Questionnaire (EDE-q) (Fairburn and Beglin. 2008)

De neste spørsmålene handler kun om de siste fire ukene (28 dager).
Les hvert spørsmål nøye og svar på alle spørsmålene.
Spørsmål 1 til 12: Velg det tallet som du synes passer best.

På hvor mange av de siste 28 dagene...

(1) Ingen dager *(2) 1-5 dager* *(3) 6-12 dager* *(4) 13-15 dager*
(5) 16-22 dager *(6) 23-27 dager* *(7) Alle dager*

1. Har du bevisst prøvd å begrense mengden mat du spiser for å påvirke din figur eller vekt (uavhengig av om du har klart det eller ikke)?

2. Har du i lengre perioder (8 våkne timer eller mer) ikke spist noe i det hele tatt for å påvirke din figur eller vekt?

3. Har du prøvd å utelukke noen typer mat du liker, for å påvirke din figur eller vekt (uavhengig av om du har klart det eller ikke)?

4. Har du prøvd å følge bestemte regler for hva eller hvordan du spiser (f.eks.en kalorigrense) for å påvirke din figur eller vekt (uavhengig av om du har klart det eller ikke)?

5. Har du hatt et klart ønske om å ha tom mage for å påvirke din figur eller vekt?

6. Har du hatt et klart ønske om å ha en helt flat mage?

7. Har du opplevd at tanker om mat, spising eller kalorier har gjort det veldig vanskelig å konsentrere deg om ting du er interessert i (f.eks. å arbeide, følge en samtale eller lese)?

8. Har du opplevd at tanker om figur eller vekt har gjort det veldig vanskelig å konsentrere deg om ting du er interessert i (f.eks. å arbeide, følge en samtale eller lese)?

9. Har du hatt en klar frykt for å miste kontroll over spisingen din?

10. Har du hatt en klar frykt for at du kan gå opp i vekt?

11. Har du følt deg tykk?

12. Har du hatt et sterkt ønske om å gå ned i vekt?

Spørsmål 13 til 18: Fyll inn passende antall i boksene til høyre. Dersom det ikke er relevant for deg svarer du "0".
Spørsmålene handler kun om de siste fire ukene (28 dagene).

13. I løpet av de siste 28 dagene, hvor mange GANGER har du spist det andre ville betraktet som en uvanlig stor mengde mat (omstendighetene tatt i betraktning)? _____

14. Ved hvor mange av disse episodene hadde du en følelse av å ha mistet kontrollen over spisingen din (mens du spiste)?_____

15. I løpet av de siste 28 dagene, hvor mange DAGER har slike episoder med overspising forekommet (dvs. der du har spist uvanlig store mengder mat og hatt en følelse av å miste kontrollen mens du spiste)? _____

16. I løpet av de siste 28 dagene, hvor mange GANGER har du kastet opp for å kontrollere din figur eller vekt?_____

17. I løpet av de siste 28 dagene, hvor mange GANGER har du brukt avføringsmidler for å kontrollere din figur eller vekt?_____

18. I løpet av de siste 28 dagene, hvor mange GANGER har du følt deg drevet eller tvunget til å trene for å kontrollere din vekt, figur eller fettmengde, eller for å forbrenne kalorier?_____

Spørsmål 19 til 21: Kryss av for det tallet som du synes passer best.
Vær oppmerksom på at i disse spørsmålene brukes begrepet "overspisingsepisode" om å spise det andre ville synes var en uvanlig stor mengde mat i den situasjonen du var i, samtidig med en følelse av å ha mistet kontroll over spisingen.

19. I løpet av de siste 28 dagene, hvor mange dager har du spist i hemmelighet (i skjul)? Tell ikke med overspisingsepisoder

(1) ☐ Ingen dager
(2) ☐ 1-5 dager
(3) ☐ 6-12 dager
(4) ☐ 13-15 dager
(5) ☐ 16-22 dager
(6) ☐ 23-27 dager
(7) ☐ Alle dager

20. Hvor mange av de gangene du har spist, har du hatt skyldfølelse (følt at du har gjort noe galt) fordi det kan påvirke din figur eller vekt? Tell ikke med overspisingsepisoder

(1) ☐ Ingen av gangene
(2) ☐ Noen få ganger
(3) ☐ Færre enn halvparten
(4) ☐ Halvparten
(5) ☐ Mer enn halvparten
(6) ☐ De fleste gangene
(7) ☐ Hver gang

21. løpet av de siste 28 dagene, hvor bekymret har du vært for at andre mennesker ser deg spise? Tell ikke med overspisingsepisoder

(1) ☐ 0 - Ikke i det hele tatt
(2) ☐ 1
(3) ☐ 2 - Litt
(4) ☐ 3
(5) ☐ 4 - Ganske mye
(6) ☐ 5
(7) ☐ 6 - Veldig mye

Spørsmål 22 til 28: Velg det tallet som du synes passer best.
Spørsmålene handler kun om de siste fire ukene (28 dagene).

I løpet av de siste 28 dagene...

(0) Ikke i det hele tatt (1) (2) Litt (3) (4) Ganske mye (5) (6) Veldig mye

22. Har vekten din påvirket hvordan du tenker om (bedømmer) deg selv som person?

23. Har figuren din påvirket hvordan du tenker om (bedømmer) deg selv som person?

24. Hvor opprørt ville du bli hvis du ble bedt om å veie deg en gang i uken (ikke mer, ikke mindre) de neste fire ukene?

25. Hvor misfornøyd har du vært med vekten din?

26. Hvor misfornøyd har du vært med figuren din?

27. Hvor mye ubehag har du følt ved å se kroppen din (f.eks. når du ser figuren din i speilet, reflektert i et butikkvindu, ved klesskift, eller når du bader eller dusjer)?

28. Hvor mye ubehag har du følt ved at andre ser figuren din (f.eks. i offentlige omkledningsrom, når du svømmer, eller når du har på deg trange klær)?

Health Behavior in School-aged Children – Symptom Checklist (HBSCL-SCL)

(Currie et al., 2014)

Hvor ofte har du i løpet av de siste 6 måneder hatt følgende plager:

(1) Omtrent hver dag *(2) Mer enn en gang per uke* *(3) Omtrent hver uke*
(4) Omtrent hver måned *(5) Sjelden eller aldri*

1. Hodepine	(1)	(2)	(3)	(4)	(5)
2. Vondt i magen	(1)	(2)	(3)	(4)	(5)
3. Vondt i ryggen	(1)	(2)	(3)	(4)	(5)
4. Følt deg nedfor (trist)	(1)	(2)	(3)	(4)	(5)
5. Vært irritabel eller i dårlig humør	(1)	(2)	(3)	(4)	(5)
6. Nervøs	(1)	(2)	(3)	(4)	(5)
7. Vanskelig for å sovne	(1)	(2)	(3)	(4)	(5)
8. Svimmel	(1)	(2)	(3)	(4)	(5)
9. Følelse av utmattelse	(1)	(2)	(3)	(4)	(5)
10. Fysiske skader	(1)	(2)	(3)	(4)	(5)

Resilience scale for adolescence (READ) (Hjemdal et al., 2006)

Tenk på hvordan du har hatt det i løpet av de siste to dager.

Hvordan du har tenkt og følt om deg selv, og om andre mennesker omkring deg?

Vennligst kryss av i boksen som er nærmest det som passer for deg.
Det er ingen riktige eller feil svar.

(1) Helt enig (2) Litt enig (3) Vet ikke (4) Litt uenig (5) Helt uenig

1. Jeg kommer i mål dersom jeg står på	(1)	(2)	(3)	(4)	(5)
2. Jeg fungerer best når jeg lager meg klare mål	(1)	(2)	(3)	(4)	(5)
3. Jeg har noen venner/familiemedlemmer som pleier å oppmuntre meg	(1)	(2)	(3)	(4)	(5)
4. Jeg er fornøyd med livet mitt til nå	(1)	(2)	(3)	(4)	(5)
5. I familien min er vi enige om hva som er viktig i livet	(1)	(2)	(3)	(4)	(5)
6. Jeg får lett andre til å trives sammen med meg	(1)	(2)	(3)	(4)	(5)
7. Jeg vet hvordan jeg skal nå målene mine	(1)	(2)	(3)	(4)	(5)
8. Jeg legger alltid en plan før jeg begynner med noe nytt	(1)	(2)	(3)	(4)	(5)
9. Vennene mine holder alltid sammen	(1)	(2)	(3)	(4)	(5)
10. Jeg trives godt i familien min	(1)	(2)	(3)	(4)	(5)
11. Jeg har lett for å finne nye venner	(1)	(2)	(3)	(4)	(5)
12. Når det er umulig for meg å forandre på ting slutter jeg å gruble på dem	(1)	(2)	(3)	(4)	(5)
13. Jeg er flink til å organisere tiden min	(1)	(2)	(3)	(4)	(5)
14. Jeg har noen nære venner/familiemedlemmer som virkelig bryr seg om meg	(1)	(2)	(3)	(4)	(5)
15. I familien min er vi enig om det meste	(1)	(2)	(3)	(4)	(5)
16. Jeg er flink til å snakke med nye folk	(1)	(2)	(3)	(4)	(5)
17. Jeg føler jeg er dyktig	(1)	(2)	(3)	(4)	(5)
18. I familien min har vi regler som forenkler hverdagen	(1)	(2)	(3)	(4)	(5)
19. Jeg har alltid noen som kan hjelpe meg når jeg trenger det	(1)	(2)	(3)	(4)	(5)
20. Når jeg skal velge noe vet jeg oftest hva som blir riktig for meg	(1)	(2)	(3)	(4)	(5)
21. Familien min ser positivt på tiden framover selv om det skjer noe veldig leit	(1)	(2)	(3)	(4)	(5)
22. Jeg finner alltid noe artig å snakke om	(1)	(2)	(3)	(4)	(5)
23. Min tro på meg selv får meg gjennom vanskelige perioder	(1)	(2)	(3)	(4)	(5)
24. I familien min støtter vi opp om hverandre	(1)	(2)	(3)	(4)	(5)

25. Jeg finner alltid på noe trøstende å si til andre som er lei seg	(1)	(2)	(3)	(4)	(5)
26. I motgang har jeg en tendens til finne noe bra jeg kan vokse på	(1)	(2)	(3)	(4)	(5)
27. I familien min liker vi å finne på ting sammen	(1)	(2)	(3)	(4)	(5)
28. Jeg har noen nære venner/familie-medlemmer som setter pris på egenskapene mine	(1)	(2)	(3)	(4)	(5)

Tusen takk for at du deltok i undersøkelsen!

Husk å klikk "avslutt" etter at du har besvart de to siste spørsmålene under.

Eventuelle kommentarer til undersøkelsen: _____

Ønsker du å være med i trekningen av gavekort?
Ved å svare ja samtykker du til at prosjektgruppen kan innhente din e-postadresse for å kontakte deg hvis du vinner

(1) ☐ Ja
(3) ☐ Nei

Føler du behov for å snakke med noen om dine opplevelser med seksuell trakassering og/eller psykisk helse (angst, depresjon, spiseforstyrrelser)?
Ved å svare ja samtykker du til at prosjektgruppen kan hente opp din e-postadresse og ta kontakt med deg.

(1) ☐ Ja
(2) ☐ Nei

Ekstra spørsmål ved T2:

Har du registrert om skolen har gjort noe/satt inn tiltak knyttet til temaet seksuell trakassering/uønsket seksuell oppmerksomhet og overgrep det siste året?

(1) ☐ Ja

(2) ☐ Nei

HVIS JA:
Hvilke tiltak har skolen satt inn? _____

Hvordan opplevde du å besvare denne spørreundersøkelsen?

	Sterkt uenig	**Uenig**	**Hverken uenig eller enig**	**Enig**	**Helt enig**
Spørsmålene var bra	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Det var fint at det blir satt fokus på slike temaer	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Spørsmålene var ubehagelige å svare på	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Man bør ikke spørre folk om slike spørsmål	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Spørsmålene kan ha uheldig påvirkning	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Jeg synes spørsmålene var for private	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑

Appendix VIII

Questionnaire, leader and coach version (T1)

Spørreskjema ledere/trenere

Bakgrunnsinformasjon

Alder (år): _____

Kjønn

(1) Mann

(2) Kvinne

(3) Annet (f.eks. trans*, interkjønn)

Er du

(1) Rektor/leder

(2) Trener/lærer

Har du selv og/eller dine foreldre innvandret til Norge?

(1) Ja, jeg selv og begge mine foreldre

(2) Ja, jeg selv og én av mine foreldre

(3) Ja, jeg selv, men begge mine foreldre er født i Norge

(4) Ikke jeg, men begge mine foreldre

(5) Nei

Mitt fødeland
(nedtrekksliste)

Har du utdanning innen idrettsfag?
(1) Ja

(2) Nei

(HVIS JA) Hvilken type idrettsfaglig utdanning har du?

(f.eks. bachelor i idrettsvitenskap, faglærer idrett, personlig trener osv.)

_____

Driver du selv/har du tidligere selv drevet med idrett?

(1) Ja

(2) Nei

(HVIS JA) Hvilken idrett er/har vært din hovedidrett som aktiv?

_____

Hvor lenge har du vært trener på toppidrettsgymnas/idrettslinje? (f.eks. 2 år og 6 mnd)

Antall år_____

Antall måneder_____

Er du trener i idrett utenfor skolen (f.eks. i klubb, organisasjon, treningssenter)?

(1) Ja

(2) Nei

(HVIS JA) Hvilke(n) idrett(er) er du trener for utenfor skolen?

Dersom du er trener i flere idretter, vennligst angi alle idrettene du er trener for.
_____

Hvor lenge har du vært trener utenfor skolen? (f.eks. 2 år og 6 mnd)

Antall år_____

Antall måneder_____

Nedenfor følger noen spørsmål om uønsket seksuell oppmerksomhet/seksuell trakassering

Vi ber om at du leser dette før du fortsetter:

Med seksuell trakassering menes *«enhver form for uønsket seksuell oppmerksomhet som oppleves som krenkende, skremmende, fiendtlig, nedverdigende, ydmykende eller plagsom».*

Det kan være å få kommentarer på kropp, utseende eller privatliv, eller andre meldinger med seksuelt innhold eller forslag om seksuelle tjenester (muntlig, skriftlig eller digitalt). Seksuell trakassering kan også være å bli utsatt for nærgående blikk, seksuelle kroppsbevegelser, blotting, forfølgning eller spredning av private/intime bilder uten at du ville det. Seksuell trakassering innebærer også ufrivillig klemming, kyssing eller annen fysisk berøring, samt voldtekt- og voldtektsforsøk. Seksuell trakassering kan forekomme på alle arenaer som f.eks på skolen, innen idrett, hjemme eller andre steder.

Vet du om noen av elevene ved din skole blir seksuelt trakassert?

(1) Ja

(2) Nei

(HVIS JA) I hvilken sammenheng blir han/hun seksuelt trakassert?
(Du kan velge flere svaralternativer)

(1) I skolesammenheng (i skoletiden og/eller arrangement i regi av skolen som avslutninger, samlinger, turer osv.)

(2) I idrettssammenheng utenfor skolen (f.eks på klubbtrening, treningssenter)

(3) Hverken i skole- eller idrettssammenheng (på fritiden, andre arenaer)

Fra hvem fikk du først kjennskap til dette?

(1) Direkte fra eleven(e) det gjaldt

(2) Fra medelever/venner

(3) Fra lærer/trener/andre ansatte på skolen

(4) Fra trener/idrettsleder utenfor skolen

(5) Fra foreldre

(6) Fra helsepersonell (lege, psykolog, helsesykepleier etc.)

(7) Fra media

Hvordan håndterer/håndterte du saken(e)?

(1) Gjør/gjorde ingen ting

(2) Går/gikk videre med saken

Hvordan tror du at eleven(e) det gjaldt opplever/opplevde håndteringen av saken

(1) Som at ingen brydde seg

(2) Som at de fikk/får noe hjelp og støtte

(3) Som at de fikk/får mye hjelp og støtte

Finnes det rutiner på din skole der elever, ansatte og/eller andre kan varsle om seksuell trakassering?

(1) Ja

(2) Nei

(3) Vet ikke

(HVIS JA) Hvordan informeres det om disse varslingsrutinene til

	Skriftlig	Muntlig	Begge deler	Ingen av delene
Ansatte	(1)	(2)	(3)	(4)
Elevene	(1)	(2)	(3)	(4)
Foresatte	(1)	(2)	(3)	(4)

Finnes det beredskapsrutiner/tilbud om hjelp ved din skole til de som evt. opplever seksuell trakassering eller varsler om seksuell trakassering?

(1) Ja

(2) Nei

(3) Vet ikke

(HVIS JA) Hvordan informeres det om disse beredskapsrutinene/ hjelpetilbudene til

	Skriftlig	Muntlig	Begge deler	Ingen av delene
Ansatte	(1)	(2)	(3)	(4)
Elevene	(1)	(2)	(3)	(4)
Foresatte	(1)	(2)	(3)	(4)

Har du fått opplæring i hvordan håndtere varsler/saker om seksuell trakassering på din skole?

(1) Ja

(2) Nei

Kjenner du til rutinene til Norges idrettsforbund (NIF) for å varsle om seksuell trakassering?

(1) Ja

(2) Nei

(HVIS JA) Hvordan fikk du vite om disse rutinene?

(1) I skolesammenheng (informasjon fra skolen, på kurs/konferanse/utdanning via skolen)

(2) Utenfor skolesammenheng (f.eks i annen idrettssammenheng/ arrangement i regi av klubb, forbund, NIF etc, eller annen opplysning som tilfeldig lesning på internett)

Etter at du nå har lest definisjonen av seksuell trakassering, mener du selv du kan ha bidratt til at noen har opplevd det? Seksuell trakassering defineres som *«enhver form for uønsket seksuell oppmerksomhet som oppleves som krenkende, skremmende, fiendtlig, nedverdigende, ydmykende eller plagsom».*

(1) Ja

(2) Nei

(3) Vet ikke

(HVIS JA) I hvilken sammenheng kan du ha bidratt til dette?
(Du kan velge flere svaralternativer)

(1) I skolesammenheng (i skoletiden og/eller arrangement i regi av skolen som avslutninger, samlinger, turer osv.)

(2) I idrettssammenheng utenfor skolen (f.eks på klubbtrening, treningssenter)

(3) Hverken i skole- eller idrettssammenheng (på fritiden, andre arenaer)

Tusen takk for din deltagelse!

Vennligst klikk "avslutt" for å avslutte undersøkelsen.

Eventuelle kommentarer til spørreundersøkelsen: _____