

Research article

Protocol Design for Large-Scale Cross-Sectional Studies of Sexual Abuse and Associated Factors in Individual Sports: Feasibility Study in Swedish Athletics

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Abstract

To ensure health and well-being for their athletes, sports organizations must offer preventive measures against sexual abuse. The aim of this study was to design and evaluate feasibility of a research protocol for cross-sectional epidemiological studies of sexual abuse in athletics. Examination of the requirements on the study of sexual abuse in athletics was followed by iterated drafting of protocol specifications and formative evaluations. The feasibility of the resulting protocol was evaluated in a national-level study among elite athletics athletes ($n = 507$) in Sweden. The definition of sexual abuse, the ethical soundness of the protocol, reference populations and study of co-morbidity, and the means for athlete-level data collection were identified as particularly complex issues in the requirements analyses. The web-based survey defined by the protocol facilitates anonymous athlete self-reporting of data on exposure to sexual abuse. 198 athletes (39%) fully completed the feasibility survey. 89% ($n = 177$) reported that they agreed with that the questions in the survey were important, and 95% ($n = 189$) reported that they answered truthfully to all questions. Similarly, 91% ($n = 180$) reported that they did not agree with that the questions were unpleasant for them. However, 16% ($n = 32$) reported that they did not find the survey to be of personal value, and 12% ($n = 23$) reported that the survey had caused them to think about issues that they did not want to think about. Responding that participation was not personally gratifying was associated with training more hours ($p = 0.01$). There is a scarcity of research on the prevention of sexual abuse in individual sports. The present protocol should be regarded as a means to overcome this shortcoming in athletics. When implementing the protocol, it is necessary to encourage athlete compliance and to adapt the web-based survey to the particular infrastructural conditions in the sports setting at hand.

Key words: Sports epidemiology; sexual abuse; survey methods; gender issues; research ethics.

Introduction

The International Olympic Committee (IOC) encourages international sports federations and national sports governing bodies to maintain safety with regard to sexual harassment and abuse for all groups of athletes (IOC, 2008). The risk for sexual abuse is unknown in most

sports settings due to the challenge of conducting epidemiological studies on this subject which is often hidden by athletes. Correspondingly, the main motivation for epidemiological studies of sexual abuse in sports is the need to tailor preventive interventions to subgroups of athletes, taking into regard, e.g. age group, sex, and characteristics of the sexual abuse itself (Leventhal, 1998). Surveillance and design of interventions require repeated collection of individual-level data. Athletics (track and field) is a popular sport worldwide with international championships organized for athletes from 17 years of age. In 2013, the International Association of Athletics 54 Federation (IAAF) represented 212 national athletic federations (<http://www.iaaf.org>). Due to the wide geographical distribution of participants, the monitoring of safety in an individual sport such as athletics requires elaborated infrastructural means, such as the use of Internet-based information technology (Jacobsson et al., 2010).

The design of surveys about sexual abuse is challenging regardless of the targeted population, and a study among athletic athletes constitutes no exception. It is in the interest of sports organizations accepting a social responsibility for their athletes to be able to offer preventive measures against sexual abuse, while simultaneously survey designs should not breach confidentiality. We set out to design a study protocol with documented design decisions for cross-sectional epidemiological studies of sexual abuse in athletics and to evaluate its feasibility. The study protocol is to be used to investigate lifetime prevalence and to identify factors that can be used to inform primary prevention and interventions for support of sexual abuse victims. The purpose is to provide a methodological platform for easily implementable and reliable epidemiological studies of sexual abuse in sports settings. Ethical aspects has restricted the possibility of conducting prospective population-based studies of maltreatment among young people (Kendall-Tackett and Becker-Blease, 2004), and consequently retrospective studies are a recommended approach (Butchart et al., 2006; Sethi et al., 2013) – despite the risk of recall bias inherent in this survey method (Hardt and Rutter, 2004).

Prevalence and correlates of sexual abuse: There are relatively few epidemiological studies reporting on the

prevalence of sexual abuse victims in sport. A Norwegian study where elite female athletes were compared with a sample of age-matched controls showed no overall differences between the groups, but the prevalence of sexual harassment and abuse in athletes increased with age. The female athletes had experienced abuse from both men and women, and the prevalence rate of athletes' experiences of sexual harassment and abuse from male authority figures in sport was greater than what the controls had experienced in a workplace or educational setting (Fasting et al., 2003). A large-scale survey study from Australia reported that 13% of female and 6% of male participants in organized competitive sport had experienced sexual abuse in the sport environment (Brackenridge and Fasting, 2008). Regarding specific risk factors, an investigation of student-athletes and coaches on perceptions of interpersonal coach-athlete relations found that 2% of the athletes had experienced sexual abuse in sport, and 3% of the coaches admitted to having been intimately involved with an athlete under the age of 18 years (Brackeridge and Kirby, 1997). Apart from coach-related factors, the athletic maturation of the athlete (Tofetgaard, 2001), sport type (Fasting et al., 2004), and the subculture of sport (Bringer et al., 2001) have been discussed as areas mediating the risk for sexual abuse.

In comprehensive meta-analysis of 217 publications covering about 10 million children and adolescents in the general population, 127/1000 of participants reported to have been exposed to sexual abuse (Stoltenborgh et al., 2011). Variations in prevalence rates between different studies can be explained by differences in definition of sexual abuse, measurement, samples, and reporting methods (Fergusson and Mullen, 1999, Peters et al., 1986). The variations can also result from real differences in different cultures, either within multicultural populations (Kenny and McEachern, 2000) or between different countries. Fergusson et al. (1997) and Halpérin et al. (1996) separate between three types of sexual abuse: abuse without contact, abuse with contact (no penetration), and abuse with contact and penetration. A study using this definition of 18-year-olds in Norway, Lithua-

nia, Estonia, Sweden, and Poland reports that the prevalence rate of penetrating abuse was rather evenly spread among females from all five countries (Mossige et al., 2007). Regarding associations between sexual abuse and sociodemographic variables, there is in the literature substantial agreement concerning family structure in that not living with both biological parents places a child at higher risk for sexual abuse (Fergusson and Mullen, 1999; Holmes and Slap, 1998). Concerning ethnicity and sexual abuse, Finkelhor and Baron (1986) observed that studies have not found Black-White differences, but hints of possible differences for other ethnic group. Rickert et al. (2004) and Fergusson et al. (1997) found no differences between ethnic groups. Edgardh and Ormstad (2000) found no differences concerning immigrant background in a Swedish sample. Also, adolescents with a history of sexual abuse have been shown to be younger at first consensual intercourse than non-abused adolescents (Edgardh and Ormstad, 2000; Fergusson et al., 1997).

Methods

An argument-based method for investigation of complex design problems (Rittel and Webber, 1973) was employed to structure the collection and analysis of the data used for the protocol design. Examination of requirements on study of sexual abuse in athletics was followed by iterated drafting of protocol specifications and pilot tests. The feasibility of the resulting protocol was evaluated in association to implementation in a national-level study among elite athletics athletes in Sweden.

Requirements data collection

A nominal group process was used for the requirements analysis. Two expert panels examined requirements on the data to be collected by the study protocol and the study implementation process, respectively (Figure 1A). Individual expert's reviews of working requirements document were followed by telephone discussions. Requirements on the data to be collected were defined by a panel consisting of scientists and practitioners ($n = 8$)

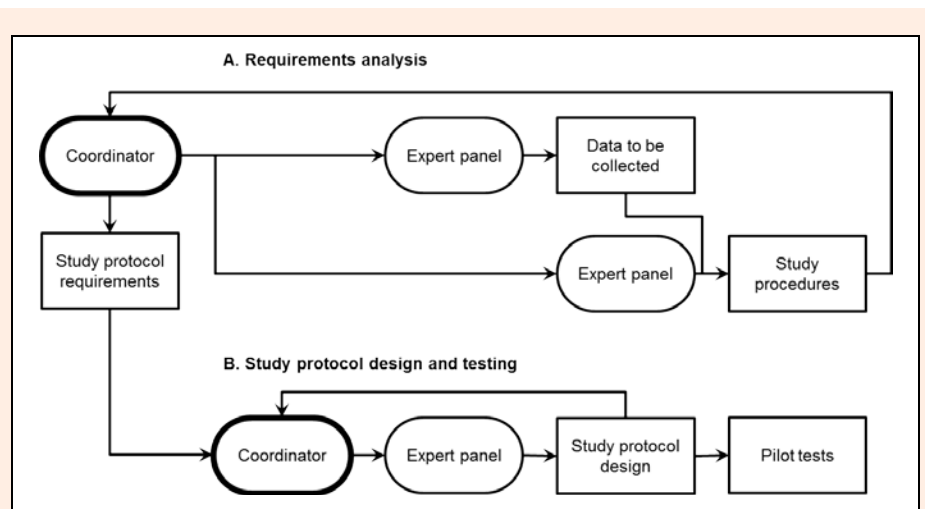


Figure 1. Display of the procedure for the study protocol design and pilot tests. An analysis of requirements performed by two expert panels (A) was followed by study protocol design and pilot tests (B).

with backgrounds in sports medicine and epidemiology, social medicine, child and adolescent psychiatry, biostatistics, and medical psychology. The panel examining requirements on implementation of the study in practice consisted of experts with backgrounds in athletics coaching, social medicine, biostatistics, health informatics, and cognitive science. All experts provided a first round of comments to the study coordinator, who assembled these into a protocol requirements document. When subsequent turns did not return with significant changes in the document, the requirements were considered finalized.

Design specification

The outcomes of the requirements analysis processes were transferred to a study protocol specification procedure. Representatives from the two panels ($n = 7$) were merged into one panel for specification of the protocol design (Figure 1B). The task communicated to the group was to formulate a preliminary study protocol using the requirements, their personal expertise, and the published literature. The experts first provided their individual design suggestions, which were collected by a design process coordinator. Formulation of these suggestions was performed independently by each expert. A working study design document was repeatedly circulated to the entire expert group and a consensus document was progressively established. The experiences from this process were documented as design issues and their solutions. In the third and final step, the document was approved as the preliminary study design protocol to be used in formative evaluations.

Formative evaluations

Two formative evaluations were performed of the preliminary protocol. In the first evaluation, a cognitive walkthrough review was performed of the definition of sexual abuse (used to collect data for the dependent variable) in the preliminary protocol. Six athletes and coaches individually reviewed the corresponding section of the protocol. The reviewers were instructed to report if they noted any ambiguities or vague formulations, lack of suitable alternatives or risk of misinterpretation and what the consequences of these observations would be. The reviewers' reports were analysed and the preliminary protocol revised.

The second formative evaluation of the prototype survey protocol was performed in a pilot study that was carried out among adult and youth athletes ($n = 9$). The participants were asked to fill in a survey based on the prototype protocol and thereafter complete a questionnaire. The questionnaire data were used to revise the protocol into its final version. The protocol design was specified in terms of the main self-report questions and the basic format for statistical analyses.

Feasibility evaluation

The feasibility of the protocol was examined by implementation in a study involving all youth and adult elite athletes listed by Swedish Athletics. The web-based system for data collection is based on a commercial product for collection of survey data over the world wide web

(SiteVision v2.5, Senselogic AB, Örebro, Sweden). The product enables definition of personal codes (usernames and passwords) to protect data from unauthorised use.

Ethics

Ethical approval for the feasibility study was obtained from the Research Ethics Committee in Linköping, Sweden (Dnr 2012/140-31). Informed written consent is collected from all study participants. For those under the age of 18 years, approval is collected from their parents. Informed written consent is also collected from all participants in the pilot studies.

Subjects

The eligible population for the feasibility evaluation was defined by the criteria: 1) being among the top-15 Swedish adult or youth (under 19 years of age) athletes in an athletics event (19 events for adults, 18 events for youths), 2) having had the athletics career in Sweden, and 3) staying in Sweden at the time of the data collection (May-August 2013). Four top-15 lists (two adult and two youth) for each discipline are thus compiled by the Swedish Athletic Association (SAA). The SAA maintains statistics for the top-25 adult and top-20 adolescent athletes in each discipline (www.friidrott.se). If an athlete was ranked among the top-15 in more than one discipline, the athlete was only included in his/her self-reported main discipline.

If an adult athlete's address was not recorded at the Swedish Athletic Association, it was tracked and obtained from their athletics club. No such central record exists at the SAA for youth athletes. The addresses were instead collected from a web site listing contact information for Swedish citizens (www.upplysning.se, Berlock Information AB, Enköping, Sweden). Letters of invitation were distributed by postal mail to all athletes targeted for the study and for whom addresses could be found. The athletes received information about the forthcoming study, a consent form for participation, a request for a contact email address, and a pre-paid return envelope.

For the present study, feasibility data were collected by adding items to the questionnaire used in the main study. Data were collected on a four graded scale (do not agree at all, agree to some extent, agree to high extent, totally agree) about the perceived importance of the study topic, whether the questions in the survey were unpleasant, if questions of nature of those included in the questionnaire should be used in population surveys, and whether the respondents responded truthfully. In addition, a comprehensive non-participation analysis was performed. The latter analysis was considered essential for highlighting possible participation bias that may cause the results becoming non-representative because the participants disproportionately possess certain traits which affect the outcome (McCambridge et al., 2014).

Statistical analyses

The feasibility data were first presented using descriptive statistics and by cohort, sex and subgroups of athletes (age categories (under 19 years, 19 years and older), sociodemographics, training load groups, and athletic events

(sprint, jump, throw, long/middle distance running, and combined events)). Associations between opinions on the survey and subgroup characteristics were analysed.

Results

Design issues and protocol solutions

Four design issues were identified as particularly complex in the requirements analyses; the definition of sexual abuse, the ethical soundness of the protocol, reference populations and study of co-morbidity, and means for athlete-level data collection. These issues were examined in detail and their solutions documented during the design specification process.

Definition of sexual abuse

Design issue: The sexual abuse concept needs to be strictly defined in order for epidemiological studies to produce valid and reliable results. According to the IOC, sexual harassment refers to behavior towards an individual or group that involves sexualized verbal, nonverbal, or physical behavior, whether intended or unintended, legal or illegal, that is based upon an abuse of power and trust and is considered by the victim or a bystander to be unwanted or coerced (IOC 2008). Sexual abuse involves any sexual activity where consent is not or cannot be given. In sport, it may also involve manipulation and entrapment of the athlete.

Protocol solution: The definition of sexual abuse used for the protocol follows the definitions used in previous large-scale epidemiological studies among youth. In the protocol, sexual abuse defined as “any sexual interaction with person(s) of any age that is perpetrated against the victim’s will, without consent or in an aggressive, exploitative, manipulative or threatening manner” (Lanhinrichsen-Rohling et al., 2006). The sexually abusive behaviours are divided into touching and non-touching sexual offences, and the touching behaviours are further categorized into penetrating and non-penetrating.

Ethical soundness

Design issue: The pillars underpinning ethical research include minimizing the risk of harm for the study participants, provision of information about the aim of the research, voluntary participation, and guarantees as well as maintenance of confidentiality. A North American study of sexual abuse in adolescents (Lanhinrichsen-Rohling et al., 2006) found that participants who reported being sexually abused more often perceived feelings of being upset than did non-abused participants. However, experiences of sexual abuse accounted only for 1.6% of the variance in “being upset” ratings. In a Norwegian study about experiences of sexuality among 18- or 19-year old adolescents, 6% strongly agreed with the statement “The questions were unpleasant” and 12% strongly agreed with the statement “The questions were too private” (Mossige et al., 2007). In comparison, a Danish study of school pupils 15-16 years old reported that 16% perceived questions about sexual experiences as embarrassing and 4% as offensive (Helweg-Larsen and Larsen, 2003; Priebe et al., 2010). These findings indicate that discomfort associated

with questions about sexuality is reduced with increasing age. It can be expected that sexual inexperience is related to being upset or discomfort. The reasons for a young person being sexually inexperienced may vary from shyness, difficulties in finding a partner for various reasons, insecurity or anxiety concerning sexuality and sexual orientation or traditional values of the young person or his or her family. All of these may contribute to the experience of discomfort.

Protocol solution: The study protocol includes questions about sexual experiences within and outside sports contexts, while measures are taken to minimize risks of sustaining harm. In research design settings, “minimal risk” means that the probability and magnitude of harm or discomfort anticipated in the research are not greater than those ordinarily encountered in daily life or during routine physical or psychological examinations or tests (HHS, 2005). This is not equal to “no risk.” The extent to which minimal harm or a minor increase in the risk of harm can be accepted depends on the extent to which the research has potential benefits. The protocol thereby adheres to contemporary guidelines for research involving young people (Save the Children, 2004), e.g. by adapting information and methods, being prepared to deal with any distress the young participants may express during the research process, and making arrangements for providing further ongoing support to those who need it.

Reference populations and co-morbidity

Design issue: In general populations of children and adolescents, increased rates of sexual abuse in disadvantaged groups that also suffer from high rates of other emotional and behavioural issues have been reported. Additionally, meta-analyses have shown that sexual abuse increases the risk of experiencing symptoms of clinical depression and that victims suffer from higher rates of suicidal ideation, attempts and completed suicides (Marks et al., 2012). In order to be able to inform planning of both primary prevention and interventions to support victims, sexual abuse survey methods deployed in sports populations need to provide data for analyses of risk factors and co-morbidities, as well as for comparisons with sports and non-sports reference populations. More specifically, correlations between sexual abuse and adolescents’ abilities to perceive life as comprehensible and manageable (sense of coherence) (Priebe et al., 2010), and non-sexual abuse and unintentional injuries (Gilbert et al. 2012; Nyberg et al., 2012) have previously been reported from studies in general populations of adolescents. Sense of coherence is defined as a global orientation that expresses the extent to which one has an enduring feeling of confidence that the stimuli deriving from one’s internal and external environments in the course of living are and explicable, resources are available to one to meet the demands posed by these stimuli, and these demands are challenges, worthy of investment and engagement (Antonovsky, 1993).

Protocol solution: The protocol employs definitions and methods aimed to allow comparisons with epidemiological studies of sexual abuse in general and sports populations. The questionnaire is extended to include collection of data on sociodemographic and sports-

specific risk factors, and co-morbidity data covering the areas of physical abuse, unintentional injuries within and outside sports, and suicidal ideation. In addition, the protocol includes measurement of sense of coherence in its three components; comprehensibility, manageability and meaningfulness.

Means for athlete-level data collection

Design issue: Means for confidential and reliable collection of survey data on sexual abuse in sports need to be established. Unlike participants in team sports, the majority of elite athletics athletes are distributed over wide geographic areas and perform their training sessions individually using a set program. Although the athletes sometimes train in groups, these constellations are often dynamic and limited in time. Most elite athletics athletes have regular contacts with sports physicians and/or psychologists, but the structure underpinning these contacts is not uniform. One possibility to distribute surveys to geographically and socially dispersed populations is by using the Internet. However, questions have been raised about the possibility that Internet studies are marred by sampling bias (Krantz and Dalal, 2000; Kraut et al., 1998). Two main sampling approaches can be employed in Internet-mediated epidemiological research. Response to the research can be generated through an “open” approach allowing all individuals who access a site the ability to take part in the research, and a more selective approach targeting specific groups, e.g. members of a particular forum.

Protocol solution: The protocol uses a combination of an initial correspondence with the eligible athletes about participation and a separate web-based data collection system. In order to secure the integrity of the respondents, the option of using clubs to assist with data collection was ruled out. An alternative considered was to involve local physicians and sports psychologists, but this solution was found not feasible due to the irregularity in individual practice schedules and was difficult in practice since elite athletic athletes stay at various geographic locations. Web-based survey methods have been reported to be reliable in particular among young adults (Ekman et al., 2006; 2007). An early criticism leveled at Internet studies is that a non-representative sample will emerge due to different characteristics of the population who have access to, and use, the Internet (Krantz and Dalal, 2000; Kraut et al., 1998). With the wider and increasing access, this concern has diminished.

Protocol specification

The core of the protocol was deployed on an Internet website for athlete anonymous self-report of data on exposure to sexual abuse. The document providing the key between lists of invited athletes and website codes was kept only on paper and used merely for sending reminder notes and non-participation analyses. The collected data were immediately stored in a secure database. The athlete entered the primary data him/herself on the website (Additional file 1).

Data for the dependent variable

The design of the self-report questions used in the protocol is based on a Norwegian survey of young people’s attitudes toward sexuality and sexual abuse (Mossige, 2001). The participant was asked for sexual abuse sustained both within and outside athletics. The dependent variable for the study was defined from the statement and questions: “Sometimes people are persuaded, pressed, or forced to do sexual activities they cannot protect themselves from. The following questions are about such situations. Have you been exposed to any of the following *against your will?*” (it is possible to choose several alternatives):

- (a) “Somebody exposed himself or herself indecently toward you,”
- (b) “Somebody has pawed (touched your body in an indecent way) you,”
- (c) “You masturbated somebody else,”
- (d) “You have had sexual intercourse,”
- (e) “You have had oral sex,” and
- (f) “You have had anal sex.”

Participants who report experience of sexual abuse were asked to answer additional questions about the abuse experience, such as how often they had been exposed, if they had been photographed or filmed at any abuse occasion, or if they had received compensation at any abuse occasion. Several questions were related to the first or only (in case of one-time abuse) abuse occasion, including participant age, offender age, gender of offender, offender identity (alternatives include coach, other athlete, biological parents, other relatives, friends or acquaintance of the family, stranger), substance use at the time of sexual by the participant or the offender, and types of persuasion, pressure, or force used by the offender (alternatives include deception, verbal coercion, and physical coercion/threats).

Baseline data

Baseline data was collected in two sets. First, data was collected using the web questionnaires on demographics and subject characteristics, i.e. sex, age, experiences from participation in athletics, and major event/discipline. Second, data on sexuality and sexual abuse outside sports were collected. The full baseline data section contains questions regarding sociodemographic data including lifetime family context and consensual sexual experiences.

Additional data on risk factors, co-morbidity, and consequences

Data was collected on lifetime physical abuse within and outside sports. The respondents were also asked whether they have suffered a significant unintentional injury within and outside athletics during the past year (one-year injury prevalence). A significant athletics injury was defined as an injury that caused at least three weeks of absence from normal participation in athletics training or competition, while a significant injury outside the athletics context was defined as an injury requiring medical care. Follow-up questions were asked about injury location and type. The 13-item “Orientation to Life Question-

naire” was included to assess sense of coherence; five questions measure comprehensibility, four manageability, and four questions quantity meaningfulness. A total score can be calculated, the range being between 13 and 91 points (Antonovsky, 1993).

Protocol evaluation

Out of 507 eligible athletes, 198 (39%) returned complete feed-back data on the survey; 53% ($n = 105$) of the respondents were female. The event groups were distributed among the respondents in proportion to the number of invited athletes; 31% of the respondents were middle- or long-distance runners, 25% throwers, 20% jumpers, 19% sprinters, and 5% were combined event athletes.

Eighty-nine percent ($n = 177$) of the respondents reported that they agreed (completely or to a high degree) with the statement that the questions in the survey were important, while 95% ($n = 189$) reported that they agreed with that they answered truthfully to all questions. Similarly, 91% ($n = 180$) reported that they did not agree (at all or agreed to a low degree) with the statement that the questions were unpleasant for them, while 90% ($n = 179$) reported that they did not agree with that questions such as those included in the questionnaire should not be asked in surveys.

However, 12% ($n = 23$) of the respondents reported that they agreed with that the survey had caused them to think about issues that they did not want to think about, and 16% ($n = 32$) reported that they did not agree at all with that participation in the survey was personally gratifying. Responding that participation was not personally gratifying at all was associated with training more hours (at least 15 hours/week) ($p = 0.01$, Cramer's $V = 0.24$). Responses fully agreeing that the questions were important were associated with event group (multiple events excluded because of too few participants; $p < 0.001$, Cramer's $V = 0.36$), as were responses fully agreeing to participate in a similar study again ($p = 0.003$, Cramer's $V = 0.28$). Middle/long distance runners less often responded that they fully agreed that questions were important (std. residual = -2.9) and less often agreed fully to participate again (std. residual = -2.2). No other opinion on the survey was significantly associated with socioeconomic or sports-specific characteristics of the athletes.

Discussion

We have presented a protocol for the epidemiological study of sexual abuse in athletics, provided arguments for its design, and presented results from a feasibility evaluation. The definition of sexual abuse, the ethical soundness of the protocol, reference populations and co-morbidity, and means for athlete-level data collection were identified as challenging issues in the analysis of protocol requirements, and were accordingly given particular attention in the design process. The feasibility evaluation showed a high non-participation rate (61%), but also that the large majority of participants found the study important and that questions were answered truthfully. Athletes training more hours were more likely to report that participation was not personally beneficial for them. These observa-

tions need to be taken into regard when the protocol is implemented in future studies.

For this protocol, sexual abuse was defined as “any sexual interaction with person(s) of any age that is perpetrated against the victim's will, without consent or in an aggressive, exploitative, manipulative or threatening manner”. In comparison, sexual harassment has by the IOC been described as behavior towards an individual or group that involves sexualized verbal, nonverbal, or physical behavior, whether intended or unintended, legal or illegal, that is based upon an abuse of power and trust and is considered by the victim or a bystander to be unwanted or coerced (IOC, 2008). The protocol definition of sexual abuse thus includes aspects of sexual harassment, but contrasts from the strict meaning of harassment in that the recorded behavior did not necessarily have to be based upon an abuse of power or trust, or be performed by individuals within a prescribed position of authority over the athlete. The protocol highlights that the study of sexual abuse in sports cannot be restricted to abuse that occurs between an adolescent and an adult, but must include abuse occurring between adolescents, and even between children. A consequence of there being no consistent agreed separation between the definitions of sexual abuse and sexual harassment is that operational definitions of exploiting sexual behavior used in studies vary greatly. This observation is of course worrying, as the disparate definitions constitute the main reason for pronounced variations in prevalence estimates, and thus make comparison between results and aggregation of data difficult (Goldman and Padayachi, 2000; Wyatt and Peters, 1986). More research into the definitional issues is therefore warranted.

There are only a few studies available reporting young people's experience of participation in research about sensitive issues (Ott, 2008) and their views on the harms and benefits of research (Singer and Levine, 2003). We found that 12% of the respondents reported that the survey had caused them to think about issues that they did not want to think about. Nonetheless, the observation of distress in connection with research participation does not indicate harm per se (DePrince and Freyd, 2004); distress cannot be regularly assumed to be harm in that it may be transitory or comparable to emotions experienced in daily life. If negative feelings evoked by research make a participating athlete seek help, there may even be a beneficial outcome (Becker-Blease and Freyd, 2006). In addition, not all respondents (only 90%) agreed with that questions such as those included in the questionnaire should be asked in surveys. In a study of male undergraduate student's experiences with abuse perpetration, a small group of participants reported that they did not think that this kind of research should be conducted at all (Becker-Blease and Freyd, 2006). The authors suggest that these non-abused participants were unhappy about having to confront the fact that abuse occurs. Rape myth acceptance defines a phenomenon where individuals hold prejudicial beliefs about sexual abuse, such as the denial of the impact on the victim and the blaming of the victim for their own victimization (Payne et al., 1999). It is possible that also athletes who display a high level of rape myth ac-

ceptance do not think that research about sexual abuse is beneficial and that they feel discomfort when participating in such research. A similar phenomenon may occur as a consequence of the existence of a rape culture. When exposed to such a culture, a collective positive social deviance may create bonds between sportspersons that produce hubris and a sense of privilege that make various forms of negative deviance acceptable, such as sexual assault. Here, positive social deviance denotes supranormal actions that go beyond what is tolerable. Such deviance occurs, for instance, when sportspersons in their ambition to improve performance stretch norms without questions, e.g. when athletes uncritically accept heavy training schedules demanded of a charismatic coach (Hughes and Coakley, 1991). In contrast, negative social deviance involves subnormal action that does not measure up to what is acceptable, occurring when sportspersons ignore a social norm, e.g. by participating in sexual harassment or abuse. Prejudicial beliefs about sexual abuse may thus also be the consequence of charismatic sportspersons initiating and maintaining sexually abusive behaviors that become the local norm within a closed setting. Finally, we found that about one athlete out of six (16%) reported that they did not agree that participation in the survey was personally gratifying, and that this opinion was associated with training more hours. From the viewpoint of previous research, this observation is hardly surprising, but somewhat disquieting. The observation can be interpreted to indicate a low concern for the issue of sexual abuse and a strong devotion to athletics, and indirectly to the coach, which both are risk factors for being abused (Brackenridge, 2000; IOC, 2008). Nonetheless, the finding implies that the planning of dissemination of information and motivating athletes to participate is essential when implementing epidemiological studies of sexual abuse in athletics.

This study has strengths and limitations that need to be considered when interpreting the results. It is one of the few studies that explicitly has addressed the design of epidemiological investigations of sexual abuse and reported general feasibility data. An important limitation of the reported protocol is that the questions used for collection of data for the dependent variable have not been validated. Instead, reflecting the best practice in the research area, the formulations were transferred from recent large-scale studies performed in general populations of adolescents and young adults. As a consequence, the lifetime prevalence is used as the central measure in the protocol, although the validity of retrospective self-reports decreases with time through recall bias (da Silva and da Costa Maia, 2013). An alternative could have been to use the one-year prevalence, i.e. to ask for abusive events suffered during the 12-months period preceding the data collection. Also, a low response rate was recorded for the evaluation survey (39%), similar to the response rates reported from recent web-based surveys on sexual behaviors and experiences performed in Sweden by researchers (41%) (Näslund et al., 2009) and opinion polling institutes (29%) (If/Springtime, 2012). The response rate is maybe the most important finding to consider from the feasibility study. Nonetheless, populations of elite athlet-

ics athletes consist of adolescents and young adults, age groups generally display low response rates in surveys. Taking also into consideration that sexual abuse is a sensitive topic and that the non-response was relatively evenly distributed between age groups, genders, and event sub groups, the willingness to respond to the survey in this particular population of athletes may still be regarded as fair. Even so, the response rate observed in the feasibility evaluation implies that extensive information, motivation, and facilitation efforts are required in association to studies of sexual abuse in athletics.

Conclusion

The need for epidemiological evidence as a foundation for planning of safety interventions in sports is today well established (Timpka et al., 2008). However, in several individual sports, including athletics, this body of basic research needed for prevention of sexual abuse is missing. The protocol presented in this paper should be regarded as an additional means to overcome this shortcoming. However, when implementing the protocol, it is necessary to address the issue of non-participation rates, analyse and accommodate international variations within the population of athletics athletes, and to adapt the web-based survey to the individual infrastructural conditions of the sport organization. For this, studies where the protocol is implemented in various populations of athletics athletes are warranted.

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Key points

- A research protocol for cross-sectional epidemiological studies of sexual abuse in athletics was designed and its feasibility evaluated.
- The definition of sexual abuse, ethical soundness of the protocol, reference populations and study of comorbidity, and means for athlete-level data collection were in requirements analyses identified as particularly complex design issues.
- The feasibility evaluation showed a high non-participation rate (61%), but also that the large majority of participants found the study important and that questions were answered truthfully.
- Responding that partaking in the study was not personally gratifying was associated with training more hours.
- When implementing cross-sectional epidemiological studies of sexual abuse in athletics, it is necessary to promote and facilitate athlete participation.

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