



Short Report

Attitudes towards use of anabolic–androgenic steroids among Ghanaian high school students



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ABSTRACT

Background: This study is a pioneering exploration of nonmedical anabolic–androgenic steroid (AAS) use among Ghanaian high school students.

Methods: Of 2683 students contacted, 2597 (1412 females) participated in a survey (response rate = 96.8%). Participants (age range = 11–35 years, $M = 17.2$, $SD = 1.4$) provided information on demographics, sports participation, and nonmedical AAS use.

Results: The overall lifetime prevalence of use was 3.8% (males = 4.9%, females = 3.1%). Moreover, 18.5% reported having an acquaintance that has used AAS while 6.0% of the sample had previously been offered AAS. However, none of the AAS users provided a valid name of the AAS they had used. Use and intent to use AAS was also significantly higher among males, teenagers (versus over 19-year-olds), athletes (versus recreational sportspeople, and nonathletes), and participants in ball games (versus other sports). Female gender, parental absence, religiosity, and participation in jogging had significant positive association with AAS use attitudes whereas participation in martial arts, and swimming had significant negative association with AAS use attitudes.

Conclusions: The high prevalence of use and intent to use AAS among Ghanaian high school students should be of concern to authorities.

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Introduction

The preponderance of nonmedical anabolic–androgenic steroid (AAS) use research is limited to Western continents although there is emerging evidence of AAS use in non-Western continents (Sagoe, Molde, Andreassen, Torsheim, & Pallesen, 2014a). However, to our knowledge, there has never been an investigation of AAS use among high school students/adolescents in sub-Saharan Africa although studies indicate AAS use is an emerging problem in this region (Ouédraogo, Goumbri, Ouédraogo, Liliou, & Guissou, 2011; Sagoe et al., 2014a). In combating the problem of AAS use, trends in the prevalence and attitudes towards AAS use need to be monitored worldwide (Sagoe et al., 2014a). The present study is the first to explore AAS use in sub-Saharan African, precisely Ghanaian, adolescents and high school students. Specifically, this study investigated: (a) the prevalence of AAS use, (b) attitudes towards AAS use among

males and females, (c) attitudes towards AAS use among athletes, recreational sportspeople, and nonathletes, (d) attitudes towards AAS use among participants of various sporting disciplines, and (e) the correlates of attitudes towards AAS use.

Methods

Participants

Ghana has a total of ten regions. Central Region has seven-teen ‘districts’ and two were selected for the study: Cape Coast Metropolitan Assembly and Komenda Edina Eguafó Abrem Municipal Assembly. The two ‘districts’ have seventeen senior high schools and five of them were randomly selected for recruitment. We first contacted 2683 students in the five senior high schools. Of the 2683 students contacted, 2597 (1146 male and 1412 female) participated in a survey yielding a response rate of 96.8%. Thirty-nine participants did not indicate their gender. Participants’ ages ranged from 11 to 35 years ($M = 17.2$, $SD = 1.4$). In terms of sports participation, 1431 of the participants were athletes, 819 were recreational

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sportspeople, and 339 were nonathletes. Eight participants did not provide information regarding sports participation.

Questionnaire

The survey was conducted using a self-administered questionnaire initially tested in a focus group discussion with a convenience sample of ten high school students in Ghana. The questionnaire contained demographic items: age, gender, living situation, religiosity, parental education, and socioeconomic status.

Participants also provided information about: (a) whether they were members of any of their school's sports teams (yes/no), (b) whether they were members of any other sports team (yes/no), and (c) whether they participated in any sport during their free time (yes/no). Participants subsequently selected which of the following sport(s) they participated in: aerobics, athletics, ball sports (football, basketball, volleyball, etc.), canoeing, jogging, martial arts, rackets (tennis, squash, golf, etc.), spinning, swimming, and weightlifting. Participants who were members of any of their schools' sports teams or any other sports team were categorized as athletes. Those who were not members of any sports team but participated in sports in their free time were categorized as recreational sportspeople. Those who were not members of any sports team, and also did not participate in sports during their free time were categorized as nonathletes.

Participants also indicated: (a) whether they had ever used AAS (yes/no), (b) whether anyone had ever offered them AAS (yes/no), and (c) if they personally knew anyone who used or had ever used AAS (yes/no). The first author verbally explained AAS to participants indicating among others that AAS did not refer to over-the-counter supplements, and that questions about AAS use referred to nonmedical use. An item on the questionnaire also asked potential users to name the particular AAS they had used.

Furthermore, participants provided information about whether: (a) they thought using AAS would improve their performance in sports or exercise (yes/not sure/no), (b) they would use AAS if using it would increase their size or strength (yes/not sure/no), and (c) they would use AAS if using it would help them secure sports scholarships (yes/not sure/no).

Procedure

The study used a cross-sectional survey design with a self-administered questionnaire.

Cluster or area random sampling was used in selecting the five senior high schools. Permission for data collection was then obtained from school principals. On the day of the data collection, the school principal's representative introduced the first author to the students. The purpose of the study was verbally explained to students and they were informed about what would happen to the information collected, assuring them personal anonymity and confidentiality. Students were also made aware that participation was voluntary and that they would be offered writing materials as compensation for participation. Clear and adequate instructions were provided in written form. Participants were also provided the opportunity to seek clarification regarding the content and completion of the questionnaire. Participants completed the questionnaire anonymously and returned them in bulk. This procedure ensured a very high response rate, and the collection of anonymous and confidential data.

Statistical analysis

Data were analyzed using SPSS version 20 (IBM Corp., 2011). Descriptive statistics were used to ascertain frequencies in levels of

experience of AAS and attitudes towards AAS use in demographic variables, sports participation, and sports disciplines. Chi-square tests were also used to assess the significance of proportional differences in levels of experience of AAS and attitudes towards AAS use. Furthermore, we used multinomial logistic regression analysis to identify factors related to attitudes towards use of AAS.

Results

Prevalence of AAS use

The lifetime prevalence was 3.8% (95% CI=3.42–4.18). The prevalence for males was 4.9% (95% CI=0.56–9.24), and 3.1% (95% CI=2.0–6.6) for females. In addition, 18.5% (95% CI=10.07–26.93%) reported personally knowing (a) user(s) of AAS while 6.0% (95% CI=2.43–8.73%) of the sample had been offered AAS at least once. Prevalence of use for athletes was 4.6% (95% CI=0.40–8.80). Recreational sportspeople and nonathletes had the same prevalence of use: [recreational sportspeople: 3.0% (95% CI=1.80–6.40), nonathletes: 3.0% (95% CI=1.80–6.39)]. However, none of the self-reported AAS users provided a valid name of the AAS they had used.

Demographics, athleticism, and levels of AAS experience

Table 1 presents levels of experience of AAS for the various demographic and sports variables.

From the subgroup comparisons, AAS users were older [$\chi^2(1)=9.7, p<.01$, Cramer's $V=.062$], and comprised a higher proportion of males [$\chi^2(1)=6.4, p<.05$, Cramer's $V=.050$] than nonusers.

Attitudes towards AAS use by gender

Table 2 presents attitudes towards AAS use among males, females, and the total sample.

Table 2 shows that more males believed using AAS will improve their sports performance [$\chi^2(2)=14.2, p<.001$, Cramer's $V=.075$], and physique [$\chi^2(2)=18.7, p<.001$, Cramer's $V=.086$] but not the possibility of securing sports scholarships [$\chi^2(2)=2.2, p=.329$, Cramer's $V=.030$].

Attitudes towards AAS use by sports participation

Table 3 presents attitudes towards AAS use among nonathletes, recreational sportspeople, and athletes.

Table 3 indicates that the proportional differences between nonathletes, recreational sportspeople, and athletes on attitude towards use of AAS for improvement in sports performance were not significant: $\chi^2(4)=8.5, p=.076$, Cramer's $V=.041$. However, more athletes indicated their intention to use AAS for improvement of physique: $\chi^2(4)=17.0, p<.01$, Cramer's $V=.057$. Furthermore, similar proportions of the three groups indicated their willingness to use AAS to help them secure sports scholarships: $\chi^2(4)=11.0, p<.05$, Cramer's $V=.046$.

Attitudes towards AAS use by sports discipline

Table 4 presents attitudes towards AAS use in the various sports disciplines.

From Table 4, similar proportions of martial arts and spinning participants, higher than swimmers, believed that using AAS will improve their sports performance. Similar proportions of swimmers and weightlifters, higher than ball sports participants, indicated their willingness to use AAS to enhance their physique. Moreover, a higher proportion of martial arts participants

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