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Adherence to Drug-Dispensation and Drug-Administration Laws and Guidelines in Collegiate Athletic Training Rooms

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Objective: To assess adherence in collegiate athletic training rooms to federal drug laws and to describe current practices.

Design and Setting: We created a survey of drug-law adherence using federal drug laws and administration guidelines and mailed it to randomly selected certified athletic trainers (ATCs) in United States college and university athletic training rooms. Means, standard deviations, and cross-tabulations were calculated to assess demographic information. A nonparametric test (Kruskal-Wallis) was calculated to compare adherence-score means.

Results: Adherence scores were collected from 168 college and university ATCs. The data suggest that ATCs in most athletic training rooms are still not complying with federal drug laws. Drug-dispensation and -administration adherence scores ranged from 5 to 20 (20% to 80% adherence) of 25 points. On average, 49.3% of ATCs in athletic training rooms had marginal adherence to federal regulations (12.34 adherence score). The difference between adherence scores and National Collegiate Athletic Association athletic divisions (Division I, II, III, and III/National Association of Intercollegiate Athletics; $P < .002$) was significant. In most athletic training rooms, ATCs (55.9%) and students (13.3%) dispensed prescription drugs. In addition, ATCs in most athletic training rooms (53.8%) administered any amount of over-the-counter medication as necessary, and many did not record the transaction (46.2%).

Discussion: Nine years after the National Collegiate Athletic Association drug-distribution study in university athletic programs, similar problem areas persist, including unqualified personnel dispensing medications, inappropriately packaged and labeled medications, and a lack of record keeping.

Conclusions: Athletic trainers should work in conjunction with members of the sports medicine team to review federal and state laws and revise institutional drug policies and procedures to comply with regulations in order to provide the best health care to student athletes in a legal and safe manner.

Key Words: medication administration, Food and Drug Administration, medication dispensation, National Collegiate Athletic Association, National Association of Intercollegiate Athletics, Pharmacy Act

The administration and distribution of over-the-counter (OTC) and prescription drugs in the athletic training room is a multifaceted process governed by federal and state laws and regulations (Tables 1 and 2).[1–53] Administration and distribution of drugs in the athletic training room must adhere to laws and regulations in order to avoid legal penalties and, more importantly, to maintain appropriate and safe medical agents for athletes.[1] Therefore, individuals who are responsible for pharmaceutical care must be knowledgeable in the legal and regulatory issues related to drug distribution.[1–53]

Certified athletic trainers (ATCs) who practice in collegiate settings are in a unique position regarding drug dispensation, administration, and record keeping. The collegiate athletic training room environment is often self-contained, with little or no relationship to a health center or outside medical facility. Thus, drugs are often stored, dispensed, and administered on site. A combination of state and federal laws and regulations mandate how and under what conditions medications should be distributed.[1–53]

State definitions differ in provisions for dispensing and administering medication; therefore, ATCs in each athletic training room need a working knowledge of current state regulations (see Table 2).[4–53] Specific laws for athletic training rooms are lacking; therefore, the administration and distribution of medication in athletic training rooms should follow federal[1–3] and state laws[4–53] in addition to published, peer-reviewed guidelines for the ATC.[4–61]

Drug distribution entails the selection, acquisition, control, storage, delivery, packaging, labeling, dispensing, and administration of medications.[54–56] Federal laws to ensure drug safety for patients began in 1938 with the Federal Food, Drug, and Cosmetic Act,[1] with subsequent laws to ensure safe drug quality, purity strength, labeling, and packaging (see Table 1).[1–3,55–61] In addition, federal regulations specify proper storage conditions, labeling, and record-keeping standards. Such regulations are specifically designed to ensure that medication is potent, that patients (athletes) know what the medication is and how to take it, and that drug usage is appropriately monitored.[1–3,55–61]

Table 1. Federal Regulations Governing Pharmaceutical Care

Regulation	Purpose
Federal Food, Drug, and Cosmetic Act (FDCA) of 1938*	Regulates the quantity, strength, bioequivalence, and labeling of prescription and nonprescription drugs
Durham-Humphrey Amendment of 1951†	Separates prescription from nonprescription drugs
Federal Anti-Tampering Act of 1983‡	Created 7-point label requirements and tamper-resistant packaging on all nonprescription medications
Omnibus Reconciliation Act of 1990 (OBRA)§	Mandates drug review, patient medication records, and verbal patient education as part of dispensing of prescription medications

*21 U.S.C. §201(1938).
†21 U.S.C. §331(1951).
‡Pub L No. 98–127, 18 U.S.C. §1365(1983).
§Pub L No. 101–508, 5 U.S.C. §13214(1990).

Past research regarding drug distribution has been limited. However, a 2-year study conducted by the National Collegiate Athletic Association (NCAA)[59] identified a myriad of drug-distribution problems that could lead to serious legal ramifications and compromise athlete health. Examples of problems included (1) unqualified personnel dispensing medications, (2) athletes receiving prescription and nonprescription medications with inappropriate package labeling according to federal guidelines, (3) a lack of security and control, and (4) a lack of required federal record keeping.[59]

Safety risks and failure of appropriate drug-law adherence to the athletes were apparent in 1993; however, the impact of Laster-Bradley's study[62] on current athletic training room practices is unknown. Thus our purpose was to revisit drug dispensation in collegiate athletic training rooms 9 years after the initial NCAA investigation[59] to assess athletic training room adherence to federal laws and regulations and describe current practices regarding drug dispensation.

METHODS

The Athletic Training Room Drug Distribution Survey was mailed to 300 ATCs employed in the collegiate setting. One hundred surveys were each sent to NCAA Division I, Division II, and Division III universities. Two Division III schools held dual membership with the National Association of Intercollegiate Athletics (NAIA) and were placed in a separate Division III/NAIA category. Thirty surveys were returned for insufficient addresses; therefore, 270 surveys were considered mailed. Certified athletic trainers were identified through the National Athletic Trainers' Association (NATA) membership listing. The San Jose State University Institutional Review Board approved the study.

Survey Instrument

The Athletic Training Room Drug Distribution Survey was created for use in this study based on federal laws[1–3] (see Table 1) and the 2002–2003 *NCAA Sports Medicine Handbook*[63] regarding the administration and dispensation of prescription and OTC medication and required record keeping (Table 3). The survey consisted of 14 ''yes'' or ''no'' questions specifically relating to drug dispensation and administration laws and regulations, as well as published guidelines for ATCs.[1–53,62] Additional items included 7 demographic questions to determine sex, ATC position, years of experience, years employed at current institution, certification, NCAA athletic division, and health care facility associations.

The 14 questions each had multiple correct answers, which totaled 25 items. Each correct item was scored for adherence with federal drug-dispensation laws (22 items)[1–3] and athletic training guidelines (3 items).[62] Questions for the adherence score were taken directly from federal laws[1–3] and published guidelines for ATCs.[62] Participants received a point for each correct answer, for a total score out of 25 points. A score from 75% to 100% (19 to 25 points) correct was considered moderate adherence, from 50% to 74.9% (13 to 18 points) correct was considered marginal adherence, and fewer than 49.9% (12.99 points) correct was considered poor adherence.

A pilot study was conducted to test the Athletic Training Room Drug Distribution Survey with 10 ATCs, 2 pharmacists, and 2 physicians who specialized in sports medicine, with a range of 3 to 26 years of experience. The survey instrument was designed to follow Dillman's procedures.[54]

The survey was mailed to 300 collegiate ATCs out of 1005 NCAA-affiliated institutions in the United States; 29 surveys were returned for insufficient postage. Because of funding constraints, we were forced to maintain an n = 300. Certified athletic trainers were identified through NATA membership, and labels were obtained from the NATA national office. Subjects were selected using a random-number table. Codes were randomly assigned to each participant to maintain anonymity and placed on each envelope to identify respondents. A cover letter describing the importance of participation in the study, the fact that an ATC and not a physician or nurse should complete the instrument, and confidentiality issues was included in the survey packet. Surveyed ATCs received a reminder postcard 1 week after the survey was mailed.[54] Three weeks after the initial mailing, nonrespondents received a second cover letter and a second copy of the questionnaire.[54]

Data Collection and Analysis

Each respondent completed the survey by checking the appropriate boxes provided. Data were collected to assess drug-dispensation practices in collegiate athletic training rooms. The Statistical Package for Social Sciences (version 11.0, SPSS Inc, Chicago, IL) was used to calculate frequencies, means, standard deviations and cross-tabulations, a Kruskal-Wallis statistic, and eta^2. We computed Pearson product moment correlation adherence-score means among athletic divisions, sex, and years' experience as an ATC. A Kruskal-Wallis test was calculated to compare means because the data were skewed and violated the normal assumptions.

RESULTS

One hundred sixty-eight ATCs responded to the survey (62%) with 143 (52%) useable surveys. Twenty-six (15%) of the surveys were returned without completion of the drug-distribution section and thus were unusable. The average number of years as an ATC was 12.3 (SD = 7.9). The average number of years respondents were employed in their current positions was 7.6 (SD = 7.2). Sixty-three percent (n = 90) of

Table 2. State Pharmacy Practice Acts and Drug Laws

State	Dispense	Administer	Certified Athletic Trainer Dispense	Certified Athletic Trainer Administer
Alabama	#	*	No	*, †
Alaska	‡	||||	No	*, †
Arizona	¶	¶¶	No	*, †
Arkansas	**	*	No	*, †
California	¶	||||	No	*, †
Colorado	‡, ||	||||	No	*, †
Connecticut	¶	||||	No	*, †
Delaware	#	*	No	*, †
Florida	††, ‡‡	***	No	*, †
Georgia	¶	¶¶, ***	No	*, †
Hawaii	‡	¶¶	No	*, †
Idaho	#	*	No	*, †
Illinois	‡	*	No	*, †
Indiana	¶	*	No	*, †
Iowa	§	||||	No	*, †
Kansas	§	||||	No	*, †
Kentucky	||	¶, ||||	No	*, †
Louisiana	‡	||||	No	*, †
Maine	¶	*	No	*, †
Maryland	¶	*	No	*, †
Massachusetts	¶, **	*	No	*, †
Michigan	‡	*	No	*, †
Minnesota	¶	*	No	*, †
Mississippi	§§	||||	No	*, †
Missouri	§	||||	No	*, †
Montana	§	||||	No	*, †
Nebraska	‡	¶¶	No	No
Nevada	‡	*	No	*, †
New Hampshire	||, **	***	No	*, †
New Jersey	‡	¶¶	No	No
New Mexico	‡	¶¶		
New York	*	*	No	*, †
North Carolina	#, §§	||||	No	*, †
North Dakota	¶	##	No	No
Ohio	¶	*	No	*, †
Oklahoma	**	||||	No	*, †
Oregon	¶	*	No	*, †
Pennsylvania	**	||||	No	*, †
Rhode Island	**	¶¶	No	No
South Carolina	||, ¶, **	||||	No	*, †
South Dakota	¶	||||	No	*, †
Tennessee	‡	||||	No	*, †
Texas	#	||||	No	*, †
Utah	¶	||||	No	*, †
Vermont	#	*	No	*, †
Virginia	¶	¶¶	No	No
Washington	*, §§	||||	No	*, †
West Virginia	¶	||||	No	*, †
Wisconsin	¶	¶¶	No	*, †
Wyoming	‡	||||	No	No

*Not included in the definition of ''practice of pharmacy.''
†Not included in Medical Practice Act.
‡Dispense means to deliver a controlled dangerous substance or controlled substance analog to an ultimate user or research subject pursuant to the lawful order of a practitioner, including the prescribing, administering, packaging, labeling, or compounding necessary to prepare the substance for that delivery.
§Substitute prescription drug for controlled substance in footnote ‡.
‖Dispense or dispensing means to deliver 1 or more doses of a prescription drug in a suitable container, appropriately labeled for subsequent administration to or use by a patient or other individual entitled to receive the prescription drug.
¶Dispense or dispensing means the preparation and delivery of a drug or device to a patient or patient's agent under a lawful order of a practitioner in a suitable container appropriately labeled for subsequent administration to, or use by, a patient.
#Dispense means preparing and packaging a prescription drug or device in a container and labeling the container with information required by state and federal law; filling or refilling drug-container prescription drugs for subsequent use by a patient; or providing quantities for unit-dose prescription drugs for subsequent administration.
**Dispense means to sell, distribute, leave with, give away, dispose or deliver, or supply.
††Dispense is not considered administration.
‡‡Dispensing is done by a pharmacist.
§§Dispense is interpreted as delivery of a prescription drug by a practitioner of drug or devise for administration to a patient.
||||Administer means the direct application of a drug to a patient or research subject by injection, inhalation, or ingestion, whether topically or by any other means.
¶¶Administer means the direct application of a controlled dangerous substance or controlled substance analog, whether by injection, inhalation, ingestion, or any other means, to the body of a patient or research subject by (1) a practitioner (or, in his presence, by his lawfully authorized agent) or (2) the patient or research subject at the lawful direction and in the presence of the practitioner.
##Administration is the delivery of prescription medication to the user under the lawful order of a practitioner or midlevel practitioner.
***Administer or administration means the provision of a unit dose of medication to an individual patient as a result of the order of an authorized practitioner of the healing arts.

the respondents were men, and 37% (n = 53) were women. Most respondents were head athletic trainers (n = 83, 58%); the remainder were assistant athletic trainers (n = 57, 39%); and 3 individuals did not specify position (2.1%). Almost all respondents were ATCs (n = 142, 99.3%), and 1 respondent was not an ATC. Respondents held additional certifications including Physical Therapy (PT; n = 8, 5.6%); Certified Strength and Conditioning Specialist (CSCS; n = 15, 10.5%); Emergency Medical Technician Basic (EMTB; n = 4, 2.8%); and 8 unidentified certifications (5.6%).

Using a Kruskal-Wallis test, we compared adherence-score means in NCAA athletic divisions ($P < .05$), and the authors identified a significant difference. The NCAA Division III/NAIA had the lowest adherence score, with a mean of 10.07 (40%); Division I had the highest adherence score with a mean of 14.38 (57.5%), and Division II had a mean adherence score of 13.65 (54%). Correlations between the adherence scores and division, sex, years' experience as an ATC, and job position were weak (Table 4). The overall statistical power was moderate, with $\alpha = .60$. The eta^2 for practical significance was calculated to be 0.55, meaning that 55% of the variance in adherence scores could be attributed to athletic division.

Certified athletic trainers mainly represented NCAA Division I athletic departments (n = 72, 50.3%), followed by NCAA Division II (n = 29, 20.3%); NCAA Division III (n = 24, 16.8%); and NAIA/Division III (n = 2, 12.6%). Most athletic departments were unaffiliated, with medical facilities on or off campus (n = 135, 94.4%); 6 (4.2%) athletic training rooms functioned under the umbrella of an on-campus medical or health center, and 5 (3.5%) athletic training rooms functioned as an affiliate for an outside medical group. Athletic trainers from 5 (3.5%) athletic training rooms did not define

Table 3. Certified Athletic Trainers' Adherence to Federal Laws and Published Guidelines for Over-the-Counter Drugs (n = 143)

Question	Compliance n	Compliance %
Where is your over-the-counter medication stored?		
In a nonlockable cabinet	40	28
In a locked cabinet	96	67
Main athletic training room area	27	19
Head or assistant athletic trainer's office	45	31
Physician's office	20	14
How are over-the-counter medications administered?		
Available to athlete without athletic trainer consultation (ie, on the counter)*	7	5
Available through the athletic trainer for any amount necessary (ie, overnight dosage)*	77	54
Available in 1-dose packages only (ie, only 1 packet administered at a time)*	59	41
How are over-the-counter medications recorded?		
In an athlete's individual chart	21	14
On a record sheet for medications	71	50
Not recorded*	66	46
What do over-the-counter medications records include?		
Dosage*	80	60
Number of packets administered	59	41
Lot number	14	10
Reason for administration of medication	67	47
Type of medication*	90	63
Initials of administrator	70	49
Any known allergies	18	12
How is over-the-counter medication administered?		
In open cups or vials according to appropriate dosage	11	7.7
In packets preprepared in the athletic training room from large-quantity bottles	20	14
From large-quantity bottles, with verbal instruction	52	36
In individual dose packets, manufacturer packed	109	76
What information do preprepared packets from large-quantity bottles include?		
Lot number	6	4
Dosage	19	13
Instructions for use	20	14
Warnings	9	6

*Information used to calculate drug-law and -guideline adherence.

Table 4. Correlations Between Adherence Score and Sex, National Collegiate Athletic Association and National Association of Intercollegiate Athletics Athletic Division, and Years' Experience as a Certified Athletic Trainer

Description	Pearson Correlation
Sex	.049
Athletic division	.305*
Years as certified athletic trainer	.077

*Significant at the .01 level.

the medical facility affiliation. In terms of dispensing drugs, most athletic training rooms or associated medical facilities were described as formularies, with only a specific list of drugs covered by the carrier (n = 37, 25.9%); 28 (19.6%) were pharmacies, 20 (14%) were described as other, and 56 (39.2%) respondents did not answer this question (Table 5).

Table 5. Drug-Management Demographics (n = 143)

Question	Compliance n	Compliance %
Medications is checked for removal of outdated or deteriorated items		
Biannually	40	27.9
Annually	64	44.8
The athletic training room or associated medical entity is (a)		
Formulary	37	25.9
Pharmacy	28	19.6
Do not know	22	15.4
Who is responsible for managing the ordering of prescription medication?		
Certified athletic trainer	41	28.7
Physician	7	4.9
Pharmacist	7	4.9
Other (nurse, physical therapist)	16	11.2

With regard to OTC drugs, ATCs in most athletic training rooms stored medications in a locked cabinet (n = 96, 67.1%). The majority of ATCs administered OTC drugs in any amount necessary (ie, weekly dosages; n = 77, 53.8%), and 4.9% (n = 7, 4.9%) allowed athletes access without any consultation (ie, ''on the counter''). Most ATCs recorded OTC medication dispensation on a record sheet for medications (n = 71, 49.7%), yet only a slightly smaller percentage did not make a record (n = 66, 46.2%). Athletic trainers who did record information noted dosage (n = 80, 55.9%), type of medication (n = 90, 62.9%), and initials of the administrator (n = 70, 49%), which are minimum guidelines. Athletic trainers in 76.8% (n = 109) of athletic training rooms purchased OTC drugs in individual dose packets produced by the manufacturer, and 36.4% (n = 52) purchased large-quantity bottles.

The largest number of respondents stored prescription drugs in a locked cabinet (n = 65, 45.5%). Access to prescription medications was available to physicians (n = 72, 50.3%); all ATCs (n = 49, 34.3%); only head athletic trainers (n = 31, 21.7%); and athletic training students (n = 2, 1.4%). Athletic trainers in a minority of athletic training rooms were prohibited from dispensing prescription medications to athletes (n = 41, 28.7%), whereas athletic training students were generally prohibited from dispensing prescription medication (n = 142, 86.7%). Athletic trainers were responsible for ordering drugs in 32.2% (n = 46) of the athletic training rooms. Physicians were responsible for drug ordering in the majority of athletic training rooms (n = 71, 49.7%; Table 6).

DISCUSSION

Since the NCAA study of drug-distribution systems in university athletic programs 9 years ago,[59,64] the same problem areas appear to persist.[58,59] Laster-Bradley[62] discovered that ATCs who dispensed medication to athletes may have engaged in drug-distribution practices that violated state and federal statutes, such as unqualified personnel dispensing medications; inappropriate packaging, labeling, or sorting of prescription and nonprescription medication distributed to athletes; a lack of security and control of drugs; and a lack of required record keeping.[64]

Specific federal regulations and published guidelines for ath-

Table 6. Prescription Drugs Federal Law Adherence Demographics (n = 143)

Question	Compliance n	Compliance %
Where is your prescription medication stored?		
In a nonlockable cabinet	7	5
In a locked cabinet	65	45
No prescription medication in the athletic training room	54	38
Who has access to prescription medication?		
All certified athletic trainers*	49	34
Only head athletic trainers*	31	21
Athletic training students*	2	1
Physician*	72	50
Other (physical therapist, nurse)	1	1
No prescription drugs in the athletic training room*	49	34
Certified athletic trainers handle prescription medication in the following situations:		
Hand to athlete while the physician is present*	74	52
Hand to an athlete while the physician is not present*	44	30
Hand to an athlete on road trips*	32	22
Hand to an athlete based on physician's phone request*	55	38
Hand to an athlete based on a physicians' standing order that a physician signs at a later date*	10	7
Never	41	28
Athletic training students handle prescription medication in the following situations:		
Hand to athlete while the physician is present*	11	7
Hand to an athlete while the physician is not present*	2	1
Hand to an athlete on road trips*	1	1
Hand to an athlete based on physicians' phone request*	6	4
Hand to an athlete based on a physician's standing order that a physician signs at a later date*	0	0
Never	123	87

*Information used to calculate drug-law and -guideline adherence.

Table 7. Minimum Guidelines for Handling Nonprescription Drugs[5–9,13]

1. Keep nonprescription medications in a locked cabinet, not on counters.
2. Discard all medications that are deteriorating or have passed the expiration date.
3. Record all nonprescription medications when administered to athletes and include at minimum the name of the athlete medication, dose, date, and initials of the person administering the over-the-counter drug.
4. Review accessibility to patient information regarding allergies, medical condition, and concurrent drug therapy.

letic trainers[55,63] were assessed in order to describe nonadherence issues. Drug administration is defined as the direct application of a drug to a patient's body by injection, inhalation, ingestion, or other means.[55,56,58,59,62,63,64] Administration and dispensing are 2 separate functions controlled by state laws (see Table 2). Some states allow the administration of nonprescription medication by licensed health care providers, such as ATCs, nurses, and physician assistants.[1] This type of administration would include providing an athlete with a single dose of ibuprofen. The dispensing of medication is federally defined as providing both prescription and OTC medication to a person beyond a single dose.[55,56,58,59,62,63,64] For instance, an example of dispensing would be providing an overnight supply of ibuprofen to an athlete. It is illegal for ATCs to dispense medication.[55,56,58,59,62,63,64] Only pharmacists and physicians can dispense medication according to federal law, unless otherwise designated by each individual state (see Table 2).[55,56,58,59,62,64]

Some states have provisions for nurse practitioners and physician assistants to dispense medication. However, under no circumstances can a physician instruct an ATC to dispense medication.[55,57–60,62,63] Yet despite state and federal regulations for drug dispensation and administration, ATCs and students continue to handle prescription medication.

Adherence-score data suggest that ATCs in the majority of athletic training rooms comply marginally with federal drug laws and regulations. Drug-dispensation and -administration adherence scores ranged from 5 to 20 (20%–80% adherence) out of a total of 25 points. On average, ATCs in athletic training rooms adhered to federal regulations 49.3% of the time (12.34 adherence score). The low adherence scores indicate that ATCs in athletic training rooms were in poor compliance with federal laws, breaking the law and ultimately compromising the welfare of the student athlete; however, no regulation should be disregarded.

In most athletic training rooms, ATCs gave athletes prescription medication based on a physician's request when present, on the phone, or on road trips (Table 6). Athletic trainers in a small percentage of athletic training rooms were not allowed to handle prescription medication, which may be appropriate in situations where frequent physician interaction is unavailable.

Although ATCs are legally allowed to administer OTC medication in 1-dose amounts, ATCs in the majority of athletic training rooms administered any amount of medication necessary. Fewer than half of ATCs reported administering medication in 1-dose packets. In fact, ATCs in a small percentage of athletic training rooms still allowed athletes free access to medication on the counter (see Table 3). Guidelines for handling nonprescription drugs have been well documented in the peer-reviewed literature and should be reviewed by athletic training room personnel (Table 7).[55,56–61]

With a litany of guidelines available in the literature, the small number of ATCs in athletic training rooms who adhere to these guidelines is disturbing. A large number of ATCs in athletic training rooms neglected storage guidelines and failed to store OTC and prescription medication appropriately. In addition, many ATCs in athletic training rooms failed to record the administration of OTC medication to an athlete (see Table 3). A lack of record keeping is not only an unsafe practice in the event of student-athlete illness or drug recall, but it shows blatant disregard for laws and guidelines.[55,61]

For ATCs in those athletic training rooms who did record the administration of medication, approximately half recorded the minimum recommended guidelines,[55,61] including the type of medication and the initials of the administrator. Other pertinent information that may be valuable for record-keeping purposes was less likely to be recorded, including the number of packets or pills administered, lot number, reason for administration of medication, and any known allergies (see Table 3). Each state may require different record information, and therefore, that information must be reviewed and placed into athletic training room policy. Laster-Bradley[62,64] discovered the same issues 9 years previously and recommended that health care professionals work in consort to provide legal and safe drug distribution. This may mean that athletic training

Table 8. Federal Tampering Act Labeling Requirements 7-Point Label[55,63]

The label of a nonprescription drug is required to contain the following information:

1. The name of the product
2. The name and address of the manufacturer, packer, or distributor
3. The net contents of the package
4. The established name of all active ingredients and the quantity of certain other ingredients, whether active or not
5. The name of any habit-forming drug contained in the preparation
6. Cautions and warnings needed to protect the consumer
7. Adequate directions for safe and effective use

room policies need to be revised by the sports medicine team, and those policies must be enacted regardless of any inconveniences to the sports medicine staff or student athletes.

Understandably the purchase of OTC medication in bulk quantities is more economical. Athletic trainers in 36% of athletic training rooms purchased medication in large quantities. However, these ATCs did not adhere to federal regulations for labeling when medications were placed in packets for consumption and administration (see Table 3). The federal Anti-Tampering Act of 1983 required a 7-point label on all OTC medication (Table 8).[55,63] Athletic trainers in most athletic training rooms purchased 1-dose packets, which may be due to ease of packaging, because these products already adhere to federal label regulations (see Table 3).

A lack of adherence to federal laws and guidelines may be attributed to the NCAA/NAIA athletic division based on statistically significant differences among all 3 divisions when comparing adherence scores. The NCAA Division I had the highest adherence scores, and Division III had the lowest. Several factors may contribute to athletic division as a factor in lower drug-law adherence scores, including resources, accessibility to other medical personnel or facilities, or other factors. These should be further investigated to determine which factors affect drug-law adherence and to what extent. In addition, physicians, physician assistants, nurses, and other individuals who may be allowed to dispense medication may not be present in some universities. Therefore, ATCs may attempt to accommodate for the absence of other health care professionals through adjustments, although unlawful, in their practice. Neither the team physician nor ATCs may have time to provide all the required services to comply with state and federal drug regulations. Thus the athletic health care team may need to be expanded to provide safe, effective, and legal drug therapy for athletes.[62,64] Correlations between the adherence scores for sex, years of experience as an ATC, and position were weak, suggesting that these variables did not significantly contribute to a lack of adherence to federal regulations (see Table 4).

CONCLUSIONS

Athletic trainers appear not to have progressed in adherence to federal laws on drug regulation from 9 years ago when the NCAA assessed athletic training rooms. We suggest ATCs in athletic training rooms review federal and state laws and regulations, seek out exemplary athletic training room drug policies, and revise drug policies and procedures to comply with federal and state laws[1–53] as well as published guidelines for ATCs.[62] Factors that contribute to nonadherence were not addressed but should be examined by future researchers in order to understand the difficulties ATCs have with OTC and prescription drugs in the athletic training room and to facilitate compliance. In addition, an increase in the sample size would increase the power of the study and generalizability to the athletic training population. Ultimately, teamwork is needed among athletic health care professionals in order to provide the best health care to student-athletes in a legal and safe manner.

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