

RISK MANAGEMENT

Risk and Safety in Physical Education for Children With Disabilities: Adapted Physical Education Textbook Review and Primer for Teachers

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Abstract

Purpose: Much of the information physical educators learn about children with disabilities occurs in an introduction to adapted physical education course. Because disabilities often have concomitant medical conditions, it is critical that PE teachers are knowledgeable about risks and safety measures for children with special needs. The purpose of the study was to determine the extent to which authors of APE textbooks address risk and safety issues and how accessible the information is. **Method:** The authors examined eight textbooks in print for APE courses. Topics examined included asthma, atlantoaxial instability, diabetes, epilepsy, HIV/AIDS, obesity, spina bifida, and abuse. **Results:** None of the textbooks covered safety procedures for every topic. In general, the longer books provided more coverage of the topics. **Discussion:** PE teachers should not rely solely on APE textbooks for appropriate management of medical conditions. The authors present

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symptoms and appropriate management of targeted conditions. Eight recommendations are made to improve safety for students at risk.

Maslow (1943) listed safety needs right next to those for existence in his hierarchy of needs, stating that lower level deficiency needs (food, shelter, clothing, and safety) must be met before growth needs become relevant. Maslow believed that safety needs were even more fundamental than love and belonging, which is now understood as essential to health and wellness. Recently, safety in schools has become more prominent in the minds of parents, teachers, and students, typically in regard to violence. Heightened security at school doors keeps parents mindful that school personnel are attempting to make children safe from outside dangers, although danger can appear in many dimensions and may be orchestrated by man or nature.

Inside the school, professionals are expected to keep a safe environment, protecting their students. The classroom teacher, the counselor, or the physical education teacher may dedicate instructional time to educating students about safety threats: fire, bicycle, bus/auto, water, tornado or storm, stranger danger, bullying, and so forth. At times, in-service time for school personnel is dedicated to safety topics such as liability, risk, negligence, security, and/or child abuse because failure of school personnel to learn or carry out safety procedures often has serious repercussions.

Additionally, educators are legally and morally responsible for appropriate care for students' chronic health conditions. According to Perrin, Bloom, and Gortmaker (2007), chronic health conditions, most notably diabetes, asthma, and obesity, are a growing problem affecting many children. In a 2010 publication in *JAMA*, Van Cleave, Gortmaker, and Perrin reported that chronic conditions doubled from 13% to 26% during the years 1994–2006.

School nurses, the logical choice for handling health conditions, are in short supply. Fewer than half of U.S. public schools have full-time nurses; school nurses cover an average of 2.2 schools each. (Robert Wood Johnson Foundation, 2013; Rosales, 2008). According to Dutton (2007), one quarter of the students in the United States have no access to school nurses. Consequently, instructional or other support personnel may be required to manage medical emergencies in lieu of or until trained medical help arrives.

In physical education, the risk of injury or triggering health emergencies is higher than in the classroom (Hart & Ritson, 2002). For example, exercise can trigger asthma attacks or low blood sugar. Furthermore, a demand for elevated heart rate can disproportionately stress the cardiovascular systems of children with reduced cardiovascular fitness due to obesity or preexisting conditions. Therefore, the knowledge base of physical educators in relation to safety must be more extensive than that for general educators.

Unfortunately, school personnel, including physical education teachers, often are not adequately prepared to manage many health conditions (American Nurses Association, 2007). A search of the academic literature for teacher knowledge about health conditions proved fruitless, with the exceptions of asthma and diabetes. Research regarding teacher knowledge about HIV/AIDS, though plentiful, has not apparently been conducted/published in the United States during the past decade.

Over the past decade, asthma, the most frequent cause of school absenteeism (Rodehorst, 2003), has risen by 40% (Levy, Heffner, Stewart, & Beeman, 2006) and now affects 9% of children in the United States (Akinbami, 2006). Physical education teachers do not necessarily know appropriate use of inhalers (Meek, Doak, & Briggs, 2002), nor do they have enough information about asthma to prescribe appropriate exercise (Forck, Marzhauser, & Weisser, 2008).

Another condition that school personnel must be prepared to address is diabetes, which has experienced a 50% increase in the number of cases over the past decade (Centers for Disease Control and Prevention, 2009). Sixty percent of physical educators surveyed stated they had never received any education on diabetes and exercise (Rickabaugh & Saltarelli, 1999). As recently as 2015, MacMillan, Kirk, Mutrie, Moola, and Robertson noted that knowledge about diabetes is still limited for teachers.

Limited information about epilepsy management was found in the educational literature. Children with other disabilities have a higher prevalence of epilepsy than children in the general population (Sunder, 1997). A need for more coach and teacher training in relation to epilepsy and seizures is documented (Alkhamra, Tannous, Hadidi, & Alkhateeb, 2012), as children with epilepsy are 2.5 times more likely to be injured during sports than children without seizure histories (Ramirez et al., 2009).

Information about teacher knowledge of conditions other than asthma and epilepsy proved elusive. Children with Down syndrome experience a host of physical problems associated with the disability. Low fitness, joint hypermobility, and the possibility of atlantoaxial instability (AAI; Dedlow et al., 2013), which is excessive movement at a cervical joint that may lead to spinal cord damage. Between 10% and 30% of students who have Down syndrome have AAI (Committee on Sports Medicine and Fitness, 1995). No related research about teacher knowledge was located in a search of Google Scholar.

HIPPA (Health Insurance Portability Accountability Act of 1996) restricts who will know a child with HIV/AIDS is medically compromised until an individualized education program is in place (Roberts, 2000). Dawson, Chunis, Smith, Carboni, and Dawson (2001) reported that high school allied health teachers (health and physical education) were significantly more knowledgeable about HIV/AIDS than were regular teachers (77% vs. 57%). Relevant publications about HIV/AIDS safety in the schools have been conspicuously absent since.

Obesity now affects about 17% of all U.S. school children (Ogden, Carroll, & Flegal, 2008). Researchers have noted a higher occurrence of musculoskeletal misalignment in overweight children, creating limitations for some physical activities (Shultz, Anner, & Hills, 2009). Additionally, children who are obese cannot tolerate high levels of physical activity without heavy stress on the cardiovascular system. A 1990 study of physical educators concluded that physical education teachers believed the school nurse was the most qualified professional to treat obesity. Physical educators also stated they did not believe they had been prepared in college to design exercise programs for children and still did not feel competent to do so (Price, Desmond, & Ruppert, 1990). More recently, Levy and Petty (2008) suggested a need for upgrading teacher educators in school health education in relation to obesity.

Most educators will eventually teach a child with spina bifida and encounter associated safety issues. First, depending on the level of injury, and whether complete or incomplete severing of the spinal column, abilities vary greatly, as do limitations. Of obvious concern, a reduced ability to participate in large muscular endurance

activities greatly impairs aerobic capacity and strength development. In addition, many children with spina bifida have shunts to drain excess cerebrospinal fluid. A blow to the head can compromise the integrity of the shunt. Although no literature was located in relation to physical educators' knowledge of spina bifida, Nabors, Little, Akin-Little, and Iobst (2008) noted that a modest 8% of elementary classroom and special education teachers reported being "very well informed" about spina bifida. Special educators rated themselves to be significantly more knowledgeable about spina bifida than classroom teachers did.

The previous seven disabilities are medical conditions. The final topic in relation to student risk and safety relates to a threat particularly relevant to children with disabilities. Child abuse toward children with disabilities occurs at a higher rate than abuse toward children without disabilities, and the ramifications are often permanent. Jones et al. (2012) estimated that children with intellectual disabilities are nearly 5 times more likely to be physically or sexually abused than are children without disabilities. Bowman, Scotti, and Morris (2010) reported that 40–70% of girls with developmental disabilities are sexually abused before the age of 18 and up to 30% of boys. Individuals who abuse usually choose those who are weak and those unlikely to report. As a result, children in general and seniors become compelling targets. Children with disabilities, especially intellectual deficits or communication issues, become particularly desirable because they typically cannot report (Hughes, 2005).

Orellove, Hollahan, and Myles (2000), after surveying parents, educators, and investigators, found that 19% of educators (not physical educators) said they were "very knowledgeable" about different types of child abuse. Only 9% declared themselves very knowledgeable about how to recognize abuse in children with disabilities, and 9% responded that they knew how to respond.

Educators in general are the front line of defense for child abuse (Sinanan, 2011) and are the group most likely to report it (Crosson-Tower, 2003). Thus, it is imperative that physical educators monitor the safety of their students independent of the condition of the equipment, the facility, or the behaviors of the students in regard to each other (Hughes, 2005).

Competent physical educators must possess significant bodies of knowledge in relation to content, pedagogy, motivation, assessment, and individual differences. For many students studying to become physical educators, knowledge for teaching children with disabilities comes from an introductory course in adapted physical education (APE). APE textbooks serve to provide critical information (and sometimes the only information) regarding needs, cautions, and methods for facilitating learning for children with unique educational, social, emotional, and/or medical needs/conditions. Prudent teachers must become cognizant of issues unique to specific disabilities, as ignorance may cause life-threatening conditions for students with disabilities.

The primary purpose of this study was to determine the extent to which textbooks for APE courses cover safety information for selected disability topics that carry significant risk. A secondary purpose was to provide information for physical educators on basic safety management for children regarding the selected disability topics.

Method

Reviewers

Reviewers were three colleagues from a large university in the United States. The first was a university faculty member with more than 30 years of experience in physical education and working with special populations. The second was a university professor with generalized physical education background, but less familiar with APE. The third was a doctoral student unfamiliar with either physical education or special populations, but with emergency management background. The three authors had different backgrounds and expertise, producing a variety of search strategies to locate relevant information in the books.

Choice of Books

To begin the study, the authors searched textbook publishing companies: Brown and Benchmark, Cengage, Holt-Hathaway, Human Kinetics, McGraw-Hill, Mosby, Pearson, Prentice Hall, and Sagamore and looked through all of the books listed in Physical Education, Kinesiology, Human Performance, and Exercise. Second, the authors searched online search engines such as Google and spe-

cific websites including Amazon and eBay using the search terms *adapted physical education*, *adapted physical*, *adapted*, and *special*. The authors then searched 10 textbook rental companies for books appearing with the search term *Adapted Physical* and searched for the most popular rentals.

The authors looked for and selected books based on their appropriateness of being the textbook for an introduction to APE course for undergraduate physical education majors. Because many undergraduates take only one class to learn all of the relevant information for working with special populations, the selected texts needed to be geared toward a general understanding of teaching children with disabilities and needed to include information about a variety of disabilities. Specialized textbooks or manuals for particular disabilities or particular modes of activity were excluded. The authors also excluded activity books for children with disabilities.

The authors included in-print books that had been published within the past 10 years and examined the most recent edition of each. Ultimately, the textbooks chosen were by Auxter, Pyfer, Zittel, and Roth (2010); Block (2007); Dunn and Leitschuh (2014); Horvat, Kalakian, Croce, and Dahlstrom (2011); Hodge, Lieberman, and Murata (2012); Lieberman and Houston-Wilson (2009); Seaman, DePauw, Morton, and Omoto (2007); and Winnick (2011).

Choice of Topics

The study was to ascertain whether risks were addressed in relation to specific topics. The authors selected eight topics on which to evaluate the textbooks. Five topics were chosen specifically because they are hidden and could easily be overlooked by the physical educator (Block, 2007): asthma, diabetes, epilepsy, AAI, and HIV/AIDS. HIV/AIDS is not a high frequency condition; however, it is communicable, and teachers need to respond as though any child could potentially be infected. Three additional conditions were selected. Obesity was included because it has become so common, and for safety purposes, affected students need different programming than weight-appropriate children. Spina bifida was chosen because it is a common neurological disorder with serious implications and most physical educators are likely to encounter it at some point. Child abuse/violence is a relevant topic because so many children with disabilities are prey for adult and peer abusers. Sherrill (2004) included

six of the eight in her table “Incidence of Selected Conditions for All Age Groups Combined” (p. 762). Most of the conditions were also included in *Case Studies in Adapted Physical Education* (Hodge, Murata, Block, & Lieberman, 2003). The final choices became asthma, diabetes, AAI, epilepsy, HIV/AIDS, obesity, spina bifida, and child abuse.

Search Process

The authors went to organizational, governmental, and Mayo Clinic websites to identify protocol for managing acute episodes and programming considerations for the selected conditions (see Table 1).

Looking for specific dangers and cautions, the authors searched the table of contents and subject index of each book to determine the inclusion and completeness of the information. If listed in neither the table of contents nor the subject index, the researchers read the text about the disability to determine if the material was included, but not indexed. The researchers did not look at supplementary information (e.g., CDs), because the material the authors deemed most important was included in the book, not the CD. The three reviewers independently searched the textbooks and recorded findings. When researchers located information that was complete, they noted it with “Yes.” When some of the information was included but not complete or not included but the reader was told where to find the information, a notation was made. If the researchers were unable to locate safety information about chosen topic, “No” was placed in the appropriate cell. When information was located, but was not related to any of the key search terms in the index, it was noted on Table 2 as “buried,” where the average reader would not be likely to encounter the term. Consistency among raters using the Kappa statistic was performed to determine interrater reliability (Landis & Koch, 1977). Differences among raters were examined and consensus sought.

Table 1
Risks and Appropriate Management

Condition	Risk	Symptoms	Appropriate management
Asthma American Lung Association http://www.lung.org/lung-disease/asthma/taking-control-of-asthma/create-an-asthma-management-plan.html	Asthma attack	Wheezing, coughing, chest tightness, shortness of breath, blue lips or fingernails. May worsen with stress, exercise, pollen, or in dry or cold weather.	Ask daily if student has inhaler. Follow parent instructions. Inhaler, have sit down. Exercise is important, but good warm-up first. Cover mouth if exercising outside when cold. May be fatal if not treated.
Diabetes diabetes.org http://care.diabetesjournals.org/content/26/suppl_1/s73.full	Hypoglycemia (blood sugar below 70mg/dl)	Shaky, nervous or anxious, confusion, dizzy, blurred vision, weak, angry or sad, uncoordinated, rapid heartbeat, tingly or numb lips or tongue.	Check blood sugar. Administer 15–20 gm simple sugar. Recheck blood sugar after 15 min. Notify parent. May need to drink juice or simple carbs while exercising intensely, as exercise depletes blood glucose. May be fatal if not treated.
	Hyperglycemia (blood sugar above 240 mg/dl)	Early: Very thirsty, urinates often. Later: Rapid deep breathing; breath smells fruity; nausea/vomiting; dry mouth; flushed hot, dry skin; blurred vision; confusion; and/or abdominal pain.	Check blood sugar. Notify parent. Exercise!
	Ketoacidosis (blood sugar above 300 consistently)—not having enough insulin	Same as for hyperglycemia, but also rapid and weak pulse, labored breathing, and low blood pressure.	Have ketone strips available to check. Contact parent. May be fatal if not treated.

Table 1 (cont.)

Condition	Risk	Symptoms	Appropriate management
Down syndrome https://www.nichd.nih.gov/health/topics/down/conditioninfo/Pages/symptoms.aspx	Atlantoaxial instability (neck can dislocate) 10–30% of people with Down syndrome have it. Lowered fitness	Not necessarily any. Heart rate starts higher and elevates quickly with exertion.	Caution about having student do any type of activity that stresses neck (e.g., forward roll or headstand). Check with parent to see if student has had an X-ray to determine if instability exists. Start with light activities, and increase intensity as tolerated. Heart rate monitor beneficial in order to determine optimal intensity of exercise.
Epilepsy http://www.mayoclinic.org/diseases-conditions/epilepsy/symptoms-causes/dxc-20117207	Grand mal seizure	Stiffening or jerking, lack of consciousness, loss of urine, confusion afterward that lasts minutes to hours.	Know procedures parents want done. Stay with the person, but move others away. Time the seizure. If more than 5 min, likely brain damage. Move objects out of way and turn person on side. Call parent. Rescue medicine to use? Where is it?
HIV/AIDS https://www.aids.gov/hiv-aids-basics/hiv-aids-101/signs-and-symptoms/	Lowered fitness Exposing others to bodily fluids	Heart rate starts higher and elevates quickly with exertion.	Start with light activities, and increase intensity as tolerated. Heart rate monitor beneficial in order to determine optimal intensity of exercise. Treat bodily fluids of all students under assumption that person could have HIV/AIDS. Teacher may not know until student needs special accommodations.

Table 1 (cont.)

Condition	Risk	Symptoms	Appropriate management
Obesity http://www.mayoclinic.org/diseases-conditions/obesity/basics/symptoms/con-20014834	Lowered fitness	Heart rate starts higher and elevates quickly with exertion.	Start with light activity, and increase intensity as tolerated. Heart rate monitor beneficial in order to determine optimal intensity of exercise.
	Joint stress	Complaints about back, knees, or ankles hurting.	Strengthen muscles and avoid jumping or jogging at first.
Spina bifida http://www.spinabifidassociation.org/site/c.evKRI7OXIoJ8H/b.8028963/k.BE67/Home.htm	Shunt	Blow to head that hits shunt.	Avoid activities in which head contact is likely. Contact parent if contact occurs.
	Low fitness	Heart rate starts higher and elevates quickly with exertion.	Start with light activities, and increase intensity as tolerated. Heart rate monitor beneficial in order to determine optimal intensity of exercise.
	Latex allergy	After exposure to latex, watery, itchy eyes, sneezing, rash, short of breath.	Possible anaphylactic shock. Effects are cumulative with exposure. Avoidance is necessary.

Table 2
Coverage of Specific Risks

Author/s	Date	Pages	Asthma	Atlantoaxial instability (AAI)	Diabetes	Epilepsy/seizures	HIV/AIDS	Obesity	Spina bifida	Bullying/abuse/violence
Lieberman & Houston-Wilson	2009	212	Yes	Yes, but buried	No	Yes, but buried	No	No	Yes, shunt, but buried No—low fitness or latex	No
Block	2007	345	Yes	No, but intimidated	Yes	No, but has list of places to get more information	Yes, including universal precautions	In table with other disabilities	Dr. puts restriction if shunt present No—latex or low fitness	By students
Horvat, Kalakian, Croce, & Dahlstrom	2011	374	Yes	No	Entire chapter	Yes	No	Yes	Talks about shunt, but not dangers Yes—low fitness No—latex	No
Hodge, Lieberman, & Murata	2012	418	Yes	Yes	Yes	Yes	Yes	Yes	None	Bullying toward students
Seaman, DePauw, Morton, & Omoto	2007	468	Yes	Says to use caution with upside down position, but not why	Advises teachers to learn warning signs, but not included	Advises teachers to know procedures, but not included	Yes, but no caution for teachers	No	Yes—low fitness No—shunt No—latex	No

Table 2 (cont.)

Author/s	Date	Pages	Asthma	Atlantoaxial instability (AAI)	Diabetes	Epilepsy/seizures	HIV/AIDS	Obesity	Spina bifida	Bullying/abuse/violence
Auxter, Pyfer, Zittel, & Roth	2010	613+ (index not numbered)	Yes	Yes	Yes	Yes	Yes, but no caution for teachers	Students should be encouraged to participate in safe activities, but does not say which ones are safe	Yes—shunt No—latex & low fitness	Child abuse, bullying, violence in “Children at Risk” chapter
Winnick	2011	637	Yes	Term present, but no discussion	Yes	Yes	Yes, including universal precautions	Yes	Shunt—not in book, but on CD. Yes—latex and low fitness	No
Dunn & Leitschuh	2014	671	Yes	Yes, but buried	Yes	Yes	Yes	Yes	Yes, shunt & latex No—low fitness	No

Results

The primary purpose of the study was to identify which books contained adequate information about safety issues relating to eight disability topics. The analysis focused primarily on coverage of the selected safety topics across all books, not about overall book quality per se. Initial interrater reliability was found to be $K = .88$. Reviewers compared results, and in cases of differences, the reviewers together reexamined the source and arrived at a consensus.

At first glance, it is evident that the only condition addressed by every group of authors was asthma. As the most common health condition resulting in school absences, knowledge of asthma management is critical for every educator. Diabetes, another common condition, received universal mention, but not all of the books included the specific information.

For most of the conditions, information ranged from one sentence to a paragraph. A few of the textbooks mentioned specific safety concerns, but did not include the information, but rather directed the reader to other sources for the information. Only one textbook (Horvat et al., 2011) contained an entire chapter about any of the conditions: diabetes.

Block's (2007) coverage of general safety in physical education merits attention, as does his chapter on "Making Inclusive Physical Education Safe," which provides a primer on liability, risk, and negligence. Other topics include the creation of a safe environment and safe teaching techniques. Also included is a sample form for parents of children with disabilities to fill out with information specific to participation in physical education. A safety inventory relating to fitness, body awareness, and perceptual motor limitations is also included. A third inventory pertains to communication, behaviors, and reinforcement for students with disabilities. Overall, substantial general safety information is readily accessible in Block's text, despite the relatively short page count compared to the other texts examined.

Violence, bullying, and abuse was the least commonly addressed topic by the authors, although arguably the most frequent cause of injury to children with disabilities, particularly those with developmental disabilities or communication limitations. Auxter et al. (2010) approached violence, child abuse, and neglect from a holistic

perspective in the context of psychosocial issues that create risk for children with special needs. Hodge et al. (2012) addressed violence in the context of bullying. Both contained relevant information on violence, but each had a different focus.

A secondary purpose of the study was to provide information for physical educators on basic safety management for children regarding the selected disability topics. Tables 1 and 3 contain basic information for educators about each topic.

Table 3
Possible Signs of Neglect and Abuse

Type	Signs
Neglect (Mayo Clinic Staff, 2012)	<ol style="list-style-type: none"> 1. Underweight or under height for age 2. Low energy or apathy 3. Inappropriate clothing or shoes for weather 4. Medical or dental problems not addressed 5. Poor hygiene 6. Food hoarding or eating excessively at one sitting
Physical Abuse (Mayo Clinic Staff, 2012)	<ol style="list-style-type: none"> 1. Unexplained or frequent bruising, burns, or broken bones, especially when explanations do not make sense 2. Untreated medical or dental problems 3. Long sleeves or pants in warm weather 4. Lack of trust in adults 5. Fear of medical help or examination 6. Does not want to go home 7. Self-destructive tendencies 8. Fear of suspected abuser being contacted
Emotional Abuse (Mayo Clinic Staff, 2012)	<ol style="list-style-type: none"> 1. Low self-confidence 2. Desperately seeks affection; needy 3. Physical ailments with no medical cause 4. Extremes—overly compliant or defiant 5. Depressed or attempts suicide

Table 3 (cont.)

Type	Signs
Sexual Abuse (U.S. Department of Justice, National Sexual Offender Public Website, n.d.)	<ol style="list-style-type: none">1. Unusual sexual knowledge, behavior, or language for their age, sexually acting out2. Physical signs, such as difficulty walking or sitting, bowel problems or eating problems3. Leaves “clues” that seem likely to provoke discussion on sexual issues4. Does not want to change clothes for physical education5. Sudden changes in appetite, behaviors, or school performance6. Inadequate personal hygiene7. Depression, self-injury, or attempts suicide8. Fear of intimacy or closeness

Discussion and Recommendations

None of the textbooks contained all of the relevant information for the eight topics chosen. Each had strengths in relation to the other books. Physical educators are cautioned not to rely on textbook information in lieu of contact with parents of students with disabilities.

School districts are required to provide teachers with pertinent medical information about their students, but the information is not always forthcoming, so it is prudent for teachers to solicit the information themselves from parents at the beginning of each school year. When new students enroll, the form should be with enrollment forms, regardless of whether the student receives special education services or not.

A second recommendation concerns the importance of having medical and medication information about each student readily available. It may be difficult for the physical educator to remember which children are at risk. Some schools now use software for attendance and grading; some of them allow for medical alerts to be placed next to students' names. If a substitute teacher is present, however, those records will not be available to him or her. Thus, it

is imperative for the physical educator to consult with the principal ahead of time to determine the exact process for ensuring the substitute knows who is at risk and whom to contact in the event of an emergency.

Because of possible ramifications of medical issues, physical educators should have current certification in First Aid and CPR, a recommendation also endorsed by Block (2007). State legislatures still have not mandated training for school personnel, despite the relative ease of having school personnel trained and certified. Teachers must be prepared to be self-reliant in the initial stages of an emergency, as many schools do not have any trained medical personnel within easy reach. Furthermore, physical educators need to teach and reinforce to all children universal precautions for contact with bodily fluids.

The authors recommend that children with reduced cardiovascular capacity wear heart rate monitors to allow physical educators an accurate picture of the level of stress on their cardiovascular system. In turn, physical educators should record, monitor, and prescribe appropriate exercise intensity, particularly for students with known limitations. Physical educators must adopt different practices in regard to weight-bearing exercises and cardiovascular training, as children with reduced cardiovascular capacity will reach max heart rate sooner than will children with normal fitness.

Because of the high risk of abuse to children with disabilities, physical educators need to know signs of abuse and neglect, be alert to observe them, follow the procedures for documenting them (notes and/or photos), and use correct protocol for reporting suspected abuse. Table 3 contains relevant information. Although abuse may arguably be more of a health-related topic than a physical education topic, most undergraduates will not receive health-specific information for children with disabilities outside of an APE course, so it may fall to the physical educator to educate children, exercise vigilance, document, and report abuse.

Educators should request in-service training to be prepared to recognize and manage risk in the schools. Some districts and states have developed handbooks to address medical emergencies. School districts in Massachusetts have access to a comprehensive handbook of more than 80 pages for asthma (Department of Public Health, Commonwealth of Massachusetts, 2009). All districts should have

handbooks/working policies for safety in general and specific conditions and topics in particular.

On another level, during the review of textbooks, it became apparent that university faculty need to supplement most APE textbooks with additional material. The pedagogical knowledge base that undergraduate candidates obtain mostly comes from coursework, for which faculty are responsible. None of the available texts provide enough information for future teachers.

A final recommendation relates to textbook authors. The authors of this article encourage textbook authors to address safety for each disability in books that introduce university students to children with disabilities. Furthermore, information should be referenced in a manner easily retrievable for someone searching for safety information.

Parents entrust their children to professionals at school for their education, as well as for their safety. Educators should not expect the best outcome without prior preparation.

Future Research

The authors recommend research be undertaken to determine the knowledge physical educators in the United States have in regard to disabilities and contraindications for physical activity. Published research was surprisingly scant and outdated in regard to the knowledge base physical educators have related to medical conditions and appropriate exercise prescriptions.

Although the emphasis in this investigation was to determine whether potential safety issues were addressed in textbooks, there is a need to examine elementary and secondary physical education methods books to determine if general safety information is included, irrespective of disabilities. Level-specific pedagogy texts may contain safety information that teacher preparation candidates may receive in regard to all students, equipment, supervision, and administration.

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