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Leadership in Youth Baseball: Awareness of Health & Safety Issues

Keith Gorse

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LEADERSHIP IN YOUTH BASEBALL:
AWARENESS OF HEALTH & SAFETY ISSUES

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Education

By

Keith M. Gorse

August 2010

DUQUESNE UNIVERSITY
SCHOOL OF EDUCATION
Department of Instruction and Leadership

Dissertation

Submitted in Partial Fulfillment of the Requirements
For the Degree of Doctor of Education (Ed.D.)

Instructional Leadership Excellence at Duquesne

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ABSTRACT

LEADERSHIP IN YOUTH BASEBALL: AWARENESS OF HEALTH & SAFETY ISSUES

By

Keith M. Gorse

August 2010

Dissertation supervised by Joseph Kush, Ph.D.

Society has a great emotional attachment to children and their overall health and safety. Youth sports organizations, directors, coaches, and parents are no different. Participation in sports such as baseball provides great physical opportunities for the youth population in this country. Unfortunately, children can and do get hurt while playing baseball. For some, these injuries can cause a life long physical impairment or possible death. The purpose of this study was to examine Little League Baseball and Babe Ruth Baseball and attempt to determine if these youth baseball leagues are implementing required and recommended standards to ensure the health and safety of all players.

The research design was quantitative and included youth baseball directors that were involved with either Little League Baseball or Babe Ruth Baseball Leagues. There were 900 email letters and online surveys sent randomly via the web-based Zoomerang

service to youth baseball directors across the country. Of the 900 surveys sent out, 348 surveys were completed. In a breakdown of youth baseball leagues, 215 of the completed surveys were from Little League Baseball directors and 133 of the completed surveys were from Babe Ruth Baseball directors.

The online survey was designed to answer four research questions. The research questions focused on the required health and safety standards of the governing leagues, the recommended standards given by the National Athletic Trainers Association (NATA), implementation of the required and recommended standards, and leadership skills involving health and safety in youth baseball.

In summary, this study was the first of its kind to examine the health and safety standards in youth baseball on a national level. It was also the first study to use the directors from the two largest youth baseball leagues in the United States. It is suggested that this study contributed to the foundation of research that connects Little League Baseball and Babe Ruth Baseball with regard to the required and recommended health and safety standards that effect their individual organizations. Furthermore, this study confirmed the importance of leadership skills in youth baseball in particular the leadership skills utilized by the directors of youth baseball organizations in Little League Baseball and Babe Ruth Baseball.

DEDICATION

To Youth Baseball Players, Directors, Coaches, and Parents Everywhere.

"Every day is a new opportunity. You can build on yesterday's success or put its failures behind and start over again. That's the way life is, with a new game every day, and that's the way baseball is." -- Bob Feller

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TABLE OF CONTENTS

	Page
Abstract	iv
Dedication	vi
Acknowledgements	vii
List of Tables	xiii
Chapter 1: Introduction	1
Background Information.....	1
Purpose of Study	10
Significance of Study	11
Research Questions.....	11
Definition of Terms.....	13
Chapter 2: Review of Literature	16
History of Youth Baseball in the United States	16
Injuries in Youth Baseball	18
Youth Baseball Organizations	21
Health and Safety Standards.....	25
Defining Leadership.....	33
Effective Leadership in Youth Baseball	35
Leadership and the Youth Baseball Director	39
Related Research on Health & Safety Issues.....	41

Chapter 3: Methodology	46
Participants.....	46
Validation of the Instrument	47
Research Design and Procedures.....	51
Informed Consent.....	51
Data Analysis.....	52
Research Questions & Hypotheses	52
 Chapter 4: Results	 55
Introduction.....	55
Overview of Results for Little League & Babe Ruth Baseball.....	55
Demographic Information for Youth Baseball Directors	56
<i>Overall Little League & Babe Ruth Baseball Directors</i>	56
<i>Little League Baseball Directors</i>	56
<i>Babe Ruth Baseball Directors</i>	57
Leadership Skills for Youth Baseball Directors	57
<i>Overall Little League & Babe Ruth Baseball Directors</i>	57
<i>Little League Baseball Directors</i>	58
<i>Babe Ruth Baseball Directors</i>	59
Demographic Information for Youth Baseball Organizations.....	60
<i>Overall Little League & Babe Ruth Baseball Organizations</i>	60
<i>Little League Baseball Organizations</i>	61
<i>Babe Ruth Baseball Organizations</i>	62

Chapter 4: Results (cont.)	
Health & Safety Requirements for Youth Baseball Leagues.....	63
<i>Overall Little League & Babe Ruth Baseball Leagues</i>	63
<i>Little League Baseball</i>	65
<i>Babe Ruth Baseball League</i>	67
<i>Health & Safety Recommendations for Youth Baseball Leagues</i>	69
<i>Overall Little League & Babe Ruth Leagues</i>	69
<i>Little League Baseball</i>	72
<i>Babe Ruth Baseball League</i>	75
Comparison of Little League and Babe Ruth Demographic Information.....	78
Comparison of Little League and Babe Ruth Leadership Skills.....	80
Comparison of Little League and Babe Ruth Health & Safety Requirements	82
Comparison of Little League and Babe Ruth Health & Safety Recommendations.....	84
Research Questions & Results	88
Chapter 5: Discussion	94
Introduction.....	94
Summary of the Demographic Information.....	94
<i>Little League Baseball Demographic Information</i>	94
<i>Babe Ruth Baseball Demographic Information</i>	95
<i>Overall Demographic Information</i>	96
Summary of the Health & Safety Standards	99
<i>Little League Baseball Health & Safety Standards</i>	99

Chapter 5: Discussion (cont.)	
<i>Babe Ruth Baseball Health & Safety Standards</i>	102
<i>Overall Required Health & Safety Standards</i>	104
<i>Overall Recommended Health & Safety Standards</i>	106
Summary of the Leadership Skills.....	110
<i>Little League Baseball Leadership Skills</i>	110
<i>Babe Ruth Baseball Leadership Skills</i>	111
<i>Overall Leadership Skills</i>	111
Limitations of the Study.....	113
Implications of the Study.....	114
Recommendations for Youth Baseball Organizations.....	116
Implications for Future Research.....	117
Summary.....	119
References	121
Appendix A: Survey Tool.....	126
Appendix B: Initial Email Letter to Youth Baseball Directors.....	130
Appendix C: Incentive Email Letter to Youth Baseball Directors.....	131
Appendix D: Survey Result Tables.....	132

LIST OF TABLES

	Page
Table 1: Frequency Statistics for Youth Baseball Directors as Good Leaders.....	58
Table 2: Frequency Statistics for Little League Directors as Good Leaders	59
Table 3: Frequency Statistics for Babe Ruth Directors as Good Leaders.....	60
Table 4: Frequency Statistics for Leagues Having Emergency Plans	64
Table 5: Frequency Statistics for Little League Having Emergency Plans	66
Table 6: Frequency Statistics for Babe Ruth League Having Emergency Plans.....	68
Table 7: Frequency Statistics for Leagues Needing Assistance in Implementing Health and Safety Standards.....	71
Table 8: Frequency Statistics for Types of Assistance Needed to Implement Health and Safety Standards.....	71
Table 9: Frequency Statistics for Little League Needing Assistance in Implementing Health and Safety Standards	74
Table 10: Frequency Statistics for Types of Assistance Needed to Implement Health and Safety Standards.....	74
Table 11: Frequency Statistics for Babe Ruth League Needing Assistance in Implementing Health and Safety Standards.....	77
Table 12: Frequency Statistics for Types of Assistance Needed to Implement Health and Safety Standards.....	77
Table 13: Comparison of Little League & Babe Ruth Baseball Director Demographic Information	79
Table 14: Comparison of Little League & Babe Ruth Baseball League Demographic Information	80
Table 15: Comparison of Little League and Babe Ruth Baseball Leadership Skill Information	81
Table 16: Comparison of Little League & Babe Ruth Baseball Health & Safety Requirements	83

Table 17: Comparison of Little League & Babe Ruth Baseball Health & Safety Recommendations.....	86
Table 18: Descriptive Statistics for Total Sample of League Directors	132
Table 19: Frequency Statistics for Youth Baseball Coaching Experience	132
Table 20: Frequency Statistics for Youth Baseball Director Gender	133
Table 21: Frequency Statistics for Academic Background of Directors	133
Table 22: Descriptive Statistics for Total Sample of Little League Baseball Directors..	134
Table 23: Frequency Statistics for Little League Baseball Coaching Experience.....	134
Table 24: Frequency Statistics for Little League Baseball Director Gender	135
Table 25: Frequency Statistics for Academic Background of Little League Baseball Directors.....	135
Table 26: Descriptive Statistics for Total Sample of Babe Ruth Baseball Directors	136
Table 27: Frequency Statistics for Babe Ruth Baseball Coaching Experience	136
Table 28: Frequency Statistics for Babe Ruth Baseball Director Gender	137
Table 29: Frequency Statistics for Academic Background of Babe Ruth Baseball Directors.....	137
Table 30: Frequency Statistics for Youth Baseball Directors Having Good Communication Skills.....	138
Table 31: Frequency Statistics for Youth Baseball Directors Being Able to Handle Health & Safety Situations	138
Table 32: Frequency Statistics for Youth Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards	139
Table 33: Frequency Statistics for Youth Baseball Directors Being Able to Handle Emergency Situations	139
Table 34: Frequency Statistics for Little League Baseball Directors Having Good Communication Skills.....	140
Table 35: Frequency Statistics for Little League Baseball Directors Being Able to Handle Health & Safety Situations.....	140

Table 36: Frequency Statistics for Little League Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards	141
Table 37: Frequency Statistics for Little League Baseball Directors Being Able to Handle Emergency Situations	141
Table 38: Frequency Statistics for Babe Ruth Baseball Directors Having Good Communication Skills.....	142
Table 39: Frequency Statistics for Babe Ruth Baseball Directors Being Able to Handle Health & Safety Situations.....	142
Table 40: Frequency Statistics for Babe Ruth Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards	143
Table 41: Frequency Statistics for Babe Ruth Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards	143
Table 42: Descriptive Statistics for Total Sample of Leagues.....	144
Table 43: Frequency Statistics for Field Maintenance Responsibility in League	144
Table 44: Descriptive Statistics for Total Sample of Leagues.....	145
Table 45: Frequency Statistics for Field Maintenance Responsibility in League	145
Table 46: Descriptive Statistics for Total Sample of Leagues.....	146
Table 47: Frequency Statistics for Field Maintenance Responsibility in League	146
Table 48: Frequency Statistics for Coaches Annually Receiving Copy of League Emergency Plan	147
Table 49: Frequency Statistics for Leagues that Annually Update Emergency Plan	147
Table 50: Frequency Statistics for Leagues Providing Coaches with Family Contact Information	148
Table 51: Frequency Statistics for League Coaches Inspecting Playing Fields	148
Table 52: Frequency Statistics for League Umpires Inspecting Playing Fields	149
Table 53: Frequency Statistics for Leagues Having First Aid Kits at Events	149
Table 54: Frequency Statistics for League Coaches Trained to Use Contents of First Aid Kits.....	150

Table 55: Frequency Statistics for Leagues Having Plans to Control Pitching	150
Table 56: Frequency Statistics for Leagues Purchasing Equipment through Authorized Companies.....	151
Table 57: Frequency Statistics for Leagues Reconditioning Equipment through Authorized Companies.....	151
Table 58: Frequency Statistics for League Catchers Required to Wear Proper Catching Equipment.....	152
Table 59: Frequency Statistics for Coaches Annually Receiving Copy of Leagues Emergency Plan	152
Table 60: Frequency Statistics for Leagues that Update their Emergency Plan.....	153
Table 61: Frequency Statistics for Leagues Providing Coaches with Family Contact Information	153
Table 62: Frequency Statistics for League Coaches Inspecting Playing Fields	154
Table 63: Frequency Statistics for League Umpires Inspecting Playing Fields	154
Table 64: Frequency Statistics for Leagues Having First Aid Kits at Events	155
Table 65: Frequency Statistics for League Coaches Trained to Use Contents of First Aid Kits.....	155
Table 66: Frequency Statistics for Leagues Having Plans to Control Pitching.....	156
Table 67: Frequency Statistics for Leagues Purchasing Equipment through Authorized Companies.....	156
Table 68: Frequency Statistics for Leagues Reconditioning Equipment through Authorized Companies.....	157
Table 69: Frequency Statistics for League Catchers Required to Wear Proper Catching Equipment.....	157
Table 70: Frequency Statistics for Coaches Annually Receiving Copy of Leagues Emergency Plan	158
Table 71: Frequency Statistics for Leagues that Update their Emergency Plan.....	158
Table 72: Frequency Statistics for Leagues Providing Coaches with Family Contact Information	159

Table 73: Frequency Statistics for League Coaches Inspecting Playing Fields	159
Table 74: Frequency Statistics for League Umpires Inspecting Playing Fields	160
Table 75: Frequency Statistics for Leagues Having First Aid Kits at Events	160
Table 76: Frequency Statistics for League Coaches Trained to Use Contents of First Aid Kits	161
Table 77: Frequency Statistics for Leagues Having Plans to Control Pitching	161
Table 78: Frequency Statistics for Leagues Purchasing Equipment through Authorized Companies	162
Table 79: Frequency Statistics for Leagues Reconditioning Equipment through Authorized Companies	162
Table 80: Frequency Statistics for League Catchers Required to Wear Proper Catching Equipment	163
Table 81: Frequency Statistics for League Coaches Being Trained in First Aid	163
Table 82: Frequency Statistics for League Coaches Being Trained in CPR	164
Table 83: Frequency Statistics for Leagues Contacting Local EMS in Regards to Season Events	164
Table 84: Frequency Statistics for League Gathering Medical Information	165
Table 85: Frequency Statistics for Leagues Having Permanent Land-Line Phones at All Fields	165
Table 86: Frequency Statistics for Leagues Having Cell Phones at All Fields	166
Table 87: Frequency Statistics for Leagues Having a Plan for Lightning Storms	166
Table 88: Frequency Statistics for Leagues Having a Plan to Manage Heat Illness	167
Table 89: Frequency Statistics for Leagues Having a Plan to Manage Head & Neck Injuries	167
Table 90: Frequency Statistics for Leagues Having Batters Wear Protective Face Masks on Helmets	168
Table 91: Frequency Statistics for Leagues Having Fielders Wear Mouth Guards	168

Table 92: Frequency Statistics for Leagues Having Fielders Wear Chest Protectors	169
Table 93: Frequency Statistics for Leagues Having Younger Age Levels Using Safety Baseballs	169
Table 94: Frequency Statistics for League Coaches Being Trained in First Aid.....	170
Table 95: Frequency Statistics for League Coaches Being Trained in CPR	170
Table 96: Frequency Statistics for Leagues Contacting Local EMS in Regards to Season Events.....	171
Table 97: Frequency Statistics for League Gathering Medical Information	171
Table 98: Frequency Statistics for Leagues Having Permanent Land-Line Phones at All Fields.....	172
Table 99: Frequency Statistics for Leagues Having Cell Phones at All Fields	172
Table 100: Frequency Statistics for Leagues Having a Plan for Lightning Storms.....	173
Table 101: Frequency Statistics for Leagues Having a Plan to Manage Heat Illness	173
Table 102: Frequency Statistics for Leagues Having a Plan to Manage Head & Neck Injuries	174
Table 103: Frequency Statistics for Leagues Having Batters Wear Protective Face Masks on Helmets	174
Table 104: Frequency Statistics for Leagues Having Fielders Wear Mouth Guards	175
Table 105: Frequency Statistics for Leagues Having Fielders Wear Chest Protectors ...	175
Table 106: Frequency Statistics for Leagues Having Younger Age Levels Using Safety Baseballs	176
Table 107: Frequency Statistics for League Coaches Being Trained in First Aid.....	176
Table 108: Frequency Statistics for League Coaches Being Trained in CPR	177
Table 109: Frequency Statistics for Leagues Contacting Local EMS in Regards to Season Events.....	177
Table 110: Frequency Statistics for League Gathering Medical Information	178

Table 111: Frequency Statistics for Leagues Having Permanent Land-Line Phones at All Fields.....	178
Table 112: Frequency Statistics for Leagues Having Cell Phones at All Fields	179
Table 113: Frequency Statistics for Leagues Having a Plan for Lightning Storms.....	179
Table 114: Frequency Statistics for Leagues Having a Plan to Manage Heat Illness	180
Table 115: Frequency Statistics for Leagues Having a Plan to Manage Head & Neck Injuries	180
Table 116: Frequency Statistics for Leagues Having Batters Wear Protective Face Masks on Helmets	181
Table 117: Frequency Statistics for Leagues Having Fielders Wear Mouth Guards	181
Table 118: Frequency Statistics for Leagues Having Fielders Wear Chest Protectors ...	182
Table 119: Frequency Statistics for Leagues Having Younger Age Levels Using Safety Baseballs	182

CHAPTER 1

Introduction

Background Information

Baseball is one of the most popular youth sports in the United States, with an estimated five million children five to sixteen years of age participating annually in organized leagues (Mueller, Marshall, & Kirby, 2001). With the popularity of youth baseball and the number of children playing the sport over the last twenty years increasing, there also has been a steady increase in the number of baseball-related injuries. With the estimated five million youth participants between the ages of five and sixteen years, the number of injuries reported for this age group has increased proportional to participation and has become a concern of pediatric and sports medicine professionals (Radelet, Lephart, Rubinstein, & Myers, 2002). Even though baseball is not considered a contact sport, it is a sport that is associated with a high number of injuries. Between 1987 and 1996, hospital emergency departments reported treating more than 95,000 baseball-related injuries among players under the age 16 each year, with a peak incidence at 12 years of age (Mueller, Marshall, & Kirby, 2001).

Since the middle 1980s, there has been an increase in the number of children and adolescents playing youth baseball (Sundeen, 2001). The reasons for this increase in popularity have varied; however, the biggest contributing factor for participation has been identified as “having fun” (Sundeen, 2001). Skill development, making friends through team involvement, the challenge of sports, and improving physical fitness have been

some of the factors leading to the increase of youth baseball participation in the United States over the past couple of decades (Sundeen, 2001). Interestingly, in what may be seen as a positive move for the reinforcement of family structure in the United States, having a positive authority figure, like a coach, to look up to and learn from is another contributing factor that has increased baseball's popularity (Libman, 1998).

Along with the growth in popularity of youth baseball has developed a competitive aspect over the last twenty-five years, with the development of national tournaments for both Little League Baseball and the Babe Ruth Baseball League. Little League Baseball has its own World Series that takes place in Williamsport, Pennsylvania every August. Teams from around the world participate in this two week tournament that involves 11 and 12 year olds (Van Auken, 2001). The Babe Ruth Baseball League has its own Bambino Tournament that includes different age levels and regional competition. The Babe Ruth World Series is played each summer in a different area of the United States (Tellefson, 2007). The exposure to these tournaments, which are now televised, added to the increased popularity of youth baseball. Both Little League Baseball and the Babe Ruth Baseball League have national television contracts, and both of their World Series tournaments are televised around the United States and to other parts of the world (Sundeen, 2001). This exposure has gained much interest with the country's youth, and it has been hypothesized that because of this influence, there has been a steady growth of youth baseball participation over the last twenty five years (Sundeen, 2001).

With the increase in popularity and participation in youth baseball in the United States, there has been an increase in the number of injuries that occur during practices and games (Mueller, Marshall, & Kirby, 2001). The majority of injuries in baseball are

not life-threatening or career-ending. Baseball related injuries consist mainly of sprains, strains, and fractures to the knee and ankle (Mueller, Marshall, & Kirby, 2001). Eye injuries are common in baseball, and youth baseball has been identified as the leading cause of sports-related eye injuries in children (Grin, Nelson, & Jeffers, 1987).

Catastrophic injuries in baseball are very rare. They occur most often when players are struck in the head or chest with a ball or a bat (Link, 2002). On average, 3 children, under age 16, die each year in the United States from baseball-related injuries (Washington, Bernharnt, Gomez, Martin, & Rowland, 2001).

Participation in youth baseball also can lead to the development of chronic injuries caused by the overuse of a particular body part. For example, most common overuse injuries found in baseball pitchers occur to the throwing arm. Over 45% of youth baseball pitchers under the age of 16 have been found to have some type of chronic elbow or shoulder pain (Janda, 2003). To prevent these types of injuries from occurring, many youth baseball leagues have set a limit for the number of innings and pitches per game, and they also require pitchers to rest between appearances (Janda, 2003). Teaching proper pitching mechanics also can prevent serious overuse injuries (Janda, 2003).

There is a perception that children who participate in organized youth baseball have fewer and less severe injuries than do adults who participate, however, due to the lack of research done on injury rates in youth baseball, there is little evidence to support this comparison. Research has shown that professional and minor league baseball players are injured at a higher rate and severity than children in organized youth leagues (Risser, Anderson, Bolduc, Harris, Laundry, & Smith, 1994). Previous research on injuries to children during youth baseball participation used subjects in the junior, middle, and high

school settings, and not those children participating in the major youth baseball organization settings (Yen & Metzel, 2000). In other youth sports, research has shown that more strenuous health and safety standards have decreased the injury rates in athletes (Radelet, Lephart, Rubinstein, & Myers, 2002).

To get a clear understanding of youth baseball in the United States today, it is important to examine the structure of two major youth baseball organizations in the country. Both Little League Baseball, Inc. and Babe Ruth Baseball League, Inc. have been instrumental in the development of youth baseball since the late 1930's. Little League Baseball is the name of a non-profit organization in the United States that organizes local children's baseball leagues throughout the USA and the rest of the world (Van Auken, 2001). Babe Ruth Baseball League, Inc. came into prominence after Little League Baseball, but now also is recognized as one of the premier amateur and youth baseball program in the world (Tellefson, 2007).

Although health and safety standards exist within Little League Baseball and the Babe Ruth Baseball League, they are different from one another, and they do not contain the same specific standards of care or practice. It also has not been determined whether the health and safety standards that do exist in both Little League Baseball and the Babe Ruth Baseball League are appropriately implemented by the local levels of youth baseball organizations.

The health and safety standards for Little League Baseball include the following: proper coaching techniques, proper pitching techniques and pitch counts, environmental safety issues, and equipment and facility safety (Janda, 2003). All coaches in Little League Baseball must be able to teach their athletes the proper techniques of playing the

game, which include fielding, hitting, running the bases, sliding, and pitching. Research has shown that youth baseball injuries can be avoided by having proper instruction available at practices and games (Koester, 2000). Pitching injuries has been a main focus for Little League Baseball for many years. Little League Baseball has identified that the best way to protect a young pitcher's arm is to correctly instruct the athlete on the proper throwing motion and to limit the number of pitches thrown during practices and games (Lyman, Fleisig, Andrews, & Osinski, 2003). Little League Baseball has incorporated environmental safety policies to prevent injury and illness from lightning and excessive heat. These policies protect young athletes from becoming injured and ill due to lightning strikes during thunder storms and participation in hot environments without proper hydration (Roberts, 1998). Player equipment and facility safety issues that include field conditions, aluminum bats, batting helmets, catcher's equipment, and even weight of baseballs have been discussed and researched by Little League Baseball over the years, allowing safety regulations to be created (Mueller & Marshall, 2003).

The health and safety standards for the Babe Ruth Baseball League include the following: proper coaching techniques, emergency communication systems, CPR and AED awareness, and equipment and facility safety (Bullpen, 2006). Like Little League Baseball, Babe Ruth Baseball League has health and safety standards for proper coaching techniques, equipment safety, and facility safety. Babe Ruth Baseball standards are similar to Little League Baseball's in regards to coaching proper baseball techniques, and making sure that all equipment and facilities are safe. Babe Ruth Baseball has developed an emergency communication system plan for its organizations. This plan is put into effect when an emergency occurs and the local Emergency Medical Systems (EMS) must

be activated (Bullpen, 2006). Research has shown that the medical emergencies that occur at youth baseball and other sporting facilities have had inadequate or delayed communication with local EMS (Mueller & Cantu, 2000). Babe Ruth Baseball League also has worked with its directors to develop a plan that trains and certifies baseball coaches in CPR and AED use (Bullpen, 2006). This type of training has been well received by participants in Babe Ruth Baseball, and there is consideration for required CPR and AED training for all of their coaches in the future (Courson, 2003; Walrath, 2007).

While each baseball organization has developed some health & safety standards, instituting consistent health and safety standards for all of youth baseball leagues could be an important step towards formulating injury prevention methods, including teaching coaches the skills required to prevent injuries (Janda, 2003). Other health and safety standards, specifically baseball field conditions and emergency communication systems, may be outside of the jurisdiction of the youth leagues and be the physical and financial responsibility of the local township and/or municipality systems (Micheli & Glassman, 2000). This separation of responsibility could make the implementation of these types of health and safety standards subject to additional processes before they could be required.

The leadership responsibilities for health and safety standards, in both Little League Baseball and Babe Ruth Baseball League, have been placed on the shoulders of the individual organization's directors (Koester, 2000). One of the responsibilities of the directors is the proper communication and education of the team coaches on the required health and safety standards (Koester, 2000). The directors also are responsible to ensure

that the teams and coaches in the organization follow the health and safety standards in a manner that is consistent with their respective youth baseball league (Koester, 2000).

Having consistent health and safety standards is essential for the provision of a reasonably safe playing environment in all youth baseball leagues (Janda, 2003). While the importance cannot be overstated, they are designed to be easily implemented and managed. All youth baseball leagues have a responsibility to follow a consistent health and safety standard process that includes assessing practice and game conditions to ensure that they are safe for the young athletes (Micheli & Glassman, 2000). One of the most significant of those issues in youth baseball is the effective development and implementation of health and safety standards by the two major organizations.

Another significant issue that impacts youth baseball players' experiences besides safety is the quality of coaching that is provided. Competent coaches know the objectives and benefits of youth baseball, so that they are able to teach, model, and reinforce good baseball skills and behaviors. Effective coaching leadership programs are designed to establish their purposes that correspond with the objectives and benefits of youth baseball (Dils & Ziatz, 2000). Educational psychologists, Smith and Smoll designed the Coach Effectiveness Training program (CET) to instruct youth baseball coaches on leadership, team-building, example setting, and safety awareness (Smith, Smoll, & Hunt, 1977). Based on cognitive-behavioral therapy techniques, the CET program teaches coaches to be more aware of their behaviors, to understand how their behaviors are perceived by their young players, and to understand the behaviors of parents in and around a baseball program (Smith, Smoll, & Hunt, 1977). The CET program also is designed to instill in coaches a commitment to improving skills,

rewarding children for their efforts, and keeping them safe from harmful situations that may occur in baseball (Smith, Smoll, & Hunt, 1977).

Young athletes learn baseball skills, abilities, and professionalism, both directly and indirectly, from the coaches with whom they play. It has been stated that over 50% of learning in sports comes from experience (Smith, Smoll, & Hunt, 1977). In other words, young athletes learn habits and behaviors through observation or a subconscious process from their coaches (Smith, Smoll, & Hunt, 1977). Therefore, coaches teach young athletes baseball and leadership skills through their own actions and reactions to certain situations. Given Bandura's (1982) theory of self-efficacy, youth baseball coaches who provide the proper instruction and demonstrate professional behavior consistently will impact young athletes, providing them with greater opportunities for success and having better baseball experiences. Youth baseball coach's self-efficacy directly impacts how they are judged and evaluated for their performance as coaches, which in turn, allows them to be successful leaders (Bandura, 1982).

Leaders who are successful should possess and demonstrate the following characteristics and actions: 1) a guiding vision, 2) passion, 3) integrity, 4) trust, 5) curiosity, 6) communications skills, 7) persistence, 8) show consistency, and 9) create authority (Bennis, 1989). Youth baseball leaders who possess and demonstrate these characteristics and actions both on and off the baseball field, will have the greatest impact player performance and being positioned to develop and implement changes, such as improved health & safety standards.

In one of their many coaching leadership studies, Smith and Smoll educated Little League Baseball coaches using the philosophy and methods of the CET program. After

their training, these coaches were evaluated more positively by their players than were the coaches who did not receive the CET training (Smith, Smoll, & Curtis, 1979). Those same players also identified that they enjoyed playing for their coaches more and thought that their teammates got along better than did the players who evaluated their coaches who were not educated with the CET program (Smith, Smoll, & Curtis, 1979).

Subsequent research with other youth baseball leagues and organizations has shown that players under the leadership of CET trained coaches also are less anxious and less likely to drop out of their youth baseball program than are players of non-trained coaches (Smith, Smoll, & Curtis, 1979). With participation on the rise, as well as the injury rate, safety in youth baseball is becoming ever more important.

Due to the rapid growth of youth baseball programs and an increase in the number of participants, health and safety has become one of the most important concerns for today's youth baseball directors (Janda, 2003). According to Janda, little research has been done to investigate health and safety knowledge of these directors or volunteer coaches. Therefore, it is critical to identify the knowledge of these directors and coaches, and then to develop leveling education and training programs for those baseball leaders who require them (Janda, 2003).

Previous research completed on youth baseball health and safety issues has shown that while baseball is one of the most popular sports in the United States, it also has the highest fatality rate among sports for children ages 5 through 14, with three to four children dying from baseball injuries each year between 1998 and 2000 (Consumer Product Safety Review, Fall, 2001; Radelet, Lephart, Rubinstein, & Myers, 2002). Similar findings were reported by Mueller, Marshall, and Kirby (2001) in their research

conducted between 1987 and 1996. Marshall, Mueller, Kirby, and Yang (2003) noted in another study that one-third of the youth baseball injuries were preventable or at least reduced if appropriate safety equipment, such as reduced-impact baseballs and face guards, were used during practices and games. They also reported that proper use and maintenance of all safety equipment and the active promotion of a safety-conscious attitude is gained through the involvement of the youth leagues coaches and directors. Recent health and safety research in youth baseball has concentrated more on the possible risk factors for injuries in youth baseball pitchers. Olsen, Flesig, Dunn, Loftice, and Andrews (2006) reported on pitching strategies in youth baseball pitchers, ages 9 through 16, and identified risk factors for possible shoulder and elbow injuries. Through their research, it was determined that using appropriate pitch counts and games pitched per week could reduce the incidence of shoulder and elbow injuries in pitchers.

Purpose of Study

The purpose of this study was to survey the directors within Little League and Babe Ruth League, to determine if the required health and safety standards are implemented, and if other health and safety standards, not required by Little League and Babe Ruth Baseball, are implemented. The results of the study also included comparisons of the beliefs regarding health and safety standards implementation held by league directors to ascertain whether similar or disparate perceptions exist between these two groups. It was also the intent of this research study to survey the youth baseball league director's regarding their perceptions of their own leadership attributes and to determine their recommendations for additional resources needed to develop a model health and

safety plans that all youth baseball leagues and organizations may be able to use in the future.

Significance of Study

At this time, one of the most significant issues in youth baseball is the development of consistent health and safety standards for directors of youth leagues and organizations (Janda, 2003). Both Little League Baseball and Babe Ruth Baseball League have health and safety standards available for their own organizations, but these plans are not consistent with one another, and there is no data to describe if these organizations abide by their leagues standards. There also seems to be a lack of understanding between league directors relative to the health & safety needs of children involved in youth baseball and the physical expectations of those athletes that have over the last 25 years (Janda, 2003).

As youth baseball health and safety standards evolve, much research is needed to guide and support the need, development, and effectiveness of consistent standards for the directors of all youth baseball organizations. The findings from this study will be presented to the governing bodies of the two major youth baseball leagues to be reviewed and possibly used to assist in the refinement of the present health and safety standards.

Research Questions

The issues that were investigated in this study centered on the importance of identifying and managing health and safety issues in youth baseball. This study investigated the required health and safety standards of the two major youth baseball organizations and how they impacted the work and responsibilities of the directors and

coaches for Little League and Babe Ruth Baseball. It also investigated the impact of other health & safety standards that were recommended by other notable organizations.

Four questions that were investigated in this study were:

Research Question 1: *Do differences exist between the directors of Little League Baseball and Babe Ruth Baseball with regard to the implementation of the required health and safety standards governed by their leagues?*

Research Question 2: *Do differences exist between the directors of Little League Baseball and Babe Ruth Baseball with regard to the implementation of the additional health and safety standards that are recommended by the National Athletic Trainers' Association?*

Research Question 3: *What are the additional resources identified by the league directors that they believe could help in the implementation of the required and/or recommended health and safety standards?*

Research Question 4: *What leadership skills are needed by league directors to help with the implementation of the health and safety standards?*

There is a general opinion that both Little League Baseball and Babe Ruth Baseball organizations need to continue to provide better health and safety standards for their youth organizations (Janda, 2003). There also is a need to identify the specific issues related to health and safety in all of youth baseball and to address those issues with a model plan or intervention. This research study is designed to identify those specific health and safety standards and gather sufficient data that will call for the formulation of a model plan that can assist the youth baseball organizations in addressing those standards in more efficient and effective ways.

Definition of Terms

It is essential to understand the common terminology used within the subject of health and safety issues in youth baseball. The following definitions will help clarify the terms that are used throughout this research study.

1. **Emergency Action Plan:** A written document that defines the standard care required in every conceivable athletic event during an emergency situation (Anderson, 2004).
2. **Environmental Conditions:** Conditions that can adversely affect an athlete's performance and, in some instances, can pose serious health threats. The environmental categories that are major concerns in youth sports include hyperthermia (heat) and exposure to lightning (Michelli & Glassman, 2000).
3. **Protective Safety Equipment:** The proper selection and fitting of sports equipment are essential in the prevention of many sports injuries. Because of the number of current litigations, sports equipment standards regarding the durability of the material, as well as fit and wear requirements are of serious concern to most athletic organizations (Mueller & Marshall, 2003).
4. **National Athletic Trainers' Association:** A national professional membership organization, founded in 1950, which represents the interests of Athletic Training professionals in the United States. The National Athletic Trainers' Association (NATA) is a not-for-profit organization with more than 30,000 members nationally and internationally and is committed to improving the athletic training profession (NATA, 2006).

5. *Commotio Cordis*: A sudden disturbance of heart rhythm observed in young people during participation in sports that occurs as the result of a blunt, non-penetrating impact to the pre-cordial region. This impact is often caused by impact of a ball, a bat or other projectile. The impact is transmitted to the heart muscle, and depending on the precise timing in relation to the cardiac cycle, it may affect the heart's electrical activity, causing an arrhythmia such as an ectopic beat, ventricular tachycardia or ventricular fibrillation (Link, 2002; Yabek, 2004).

6. Little League Baseball, Incorporated: A non-profit organization in the United States and internationally which organizes local children's leagues of baseball. Little League Baseball was founded by Carl Stotz in 1939, and the organization now has its headquarters in Williamsport, Pennsylvania (Van Auken, 2001)

7. Babe Ruth Baseball League, Incorporated: In 1951, a group of men dedicated to the youth of America met in a suburb of Trenton, New Jersey, and formed what became the first Babe Ruth League. This group of men eventually agreed to name Marius D. Bonacci as the "founder" of the program which was initially registered under the name Little Bigger League. The program was renamed in 1954 when Claire Ruth, Babe Ruth's widow who had learned of the merits of the organization and its tremendous growth, met with the administrators. She subsequently gave the organization permission to use the name of her late husband, Babe Ruth (Tellefson, 2007).

8. Emergency Medical Service: An Emergency Medical Service (EMS) is the provision of out-of-hospital acute care and transport to definitive care, for patients with illnesses and injuries which patients believe constitute medical emergencies. The most

common and recognized EMS type is an ambulance organization (Andersen, Courson, Kleiner, & McLoda, 2002).

9. Emergency Communication System: Access to a working telephone or other telecommunication device, whether fixed or mobile, to a local Emergency Medical Service in case of injury and/or illness (Andersen, Courson, Kleiner, & McLoda, 2002).

10. CPR & First Aid Training For Coaches: The American Red Cross, American Heart Association, and the United States Olympic Committee have joined forces to develop this emergency care training program for coaches who want to keep their athletes safe. This training covers sports-related injury prevention, first aid care, and Adult CPR. An optional Child CPR component also may be included (Courson, 2003).

11. Automated External Defibrillator (AED): An AED is a device that analyzes the heart's rhythm for any abnormalities and, if necessary, directs the rescuer to deliver an electrical shock to the victim's heart. The shock, called defibrillation, helps the heart reestablish an effective rhythm of its own (Feld, 2000).

CHAPTER 2

Review of Literature

History of Youth Baseball in the United States

Baseball had its origins in the early 19th century when groups of American men and boys played “Town Ball”, a sport very similar to today’s baseball. The first leagues and official rules of baseball were developed around 1845 (Sullivan, 1997). The game began to be referred as “America’s Pastime”, because during the late 19th and early 20th century, it was the most widely played sport in the country (Sullivan, 1997). Before television was invented, baseball was the pastime that many children participated in after school, on the weekends, and during summer vacation. With the popularity of this sport, children attempted to emulate their heroes at the ball park. Baseball was literally how America passed the time (Wiggins, 1987).

The urbanization of the United States in the early 20th century helped to advance youth baseball in America. Early baseball organizations had their origins within local school systems, as physical activity was thought to be an important means to build character in young students (Wiggins, 1987). The founding of the New York City’s Public School Athletic League in 1903 led the charge for organized baseball participation during the first half of the 20th century (Wiggins, 1987). By the late 1920’s and early 1930’s, professional team sports, such as baseball, became a significant part of America’s popular culture, and involvement in youth baseball paralleled this rapid rise in popularity (Wiggins, 1987).

In the late 1930’s, opposition to competition in youth baseball leagues arose, resulting in the control of youth baseball leagues transitioning from schools to local

community groups (Sayre, 1975). Many educational leaders were opposed to children's involvement in sports competition, which included baseball, for fear of causing potentially harmful psychological effects of competition on the children (Sayre, 1975). In the early 1940's, many school systems disbanded competitive baseball leagues for elementary and high school-aged children. This shift in philosophy and decreased support for competitive sports by school systems had repercussions that have lasted many decades and are still felt in many schools today (Sayre, 1975). Physical education teachers now play less of a role in organizing and coaching school sponsored baseball activities, and many parents and other adults, with no formal training in coaching baseball, have taken the places of the more experienced physical educators (Wiggins, 1987).

Despite the opposition to competition and competitive sports by school systems during the 1930's and 1940's, youth baseball still continued to grow in popularity across the country. Little League Baseball, Inc. was founded in 1939, and the Babe Ruth Baseball League, Inc. began in 1954; many other smaller independent youth baseball leagues were formed on the local and regional levels through the late 1970's (Sundeen, 2001). After a few years, many of the smaller independent youth baseball leagues were unable to sustain themselves and to remain viable; many smaller leagues joined the larger and more organized leagues, such as the Little League Baseball and the Babe Ruth Baseball League (Sundeen, 2001). Not until 1974, after a lengthy court battle, were girls permitted to play Little League Baseball (Seymore, 1990). After that decision was made, other leagues also permitted girls to play, including the Babe Ruth Baseball League. Even with this change, relatively few girls have chosen to play youth baseball in the

United States (Seymore, 1990). Over the years, the youth baseball market has grown in both popularity and participants. In the year 2000, it was reported that both Little League Baseball and the Babe Ruth Baseball League sponsored more than 100,000 youth baseball teams throughout the United States (Sundeen, 2001).

Today, the game of baseball is played at a number of levels, from amateur to professional, and across all age groups. Youth programs use modified versions of adult and professional baseball rules, which may include a smaller field, easier pitching (i.e. from a coach, a tee, or a machine), less contact, base running restrictions, limitations on innings a pitcher can throw, liberal balk rules, and run limitations, among others (Sundeen, 2001). Since the rules of the game of youth baseball vary from location-to-location and between the many organizations, coverage of many of those rules, unless influenced by health and safety standards, is beyond the scope of this dissertation.

Injuries in Youth Baseball

Research has shown that the overall incidence of injuries in youth baseball ranges between 2% and 8% of participants per year (Collins & Comstock, 2008). Among children 5 to 16 years of age, an estimated 100,000 youth baseball injuries were treated in emergency departments in 2006 (Collins & Comstock, 2008). The number of injuries generally increased with age, with a peak incidence at 12 years. Of the injuries, 26% were fractures, and 37% were contusions and abrasions. The remaining injuries were strains, sprains, concussions, internal injuries, and facial injuries (Collins & Comstock, 2008; Mueller, Marshall, & Kirby, 2001). The potential for catastrophic injury resulting from direct contact with a bat or baseball also exists. Deaths have occurred from impact

to the head resulting in intracranial bleeding and from blunt chest impact, causing ventricular fibrillation commonly called *Commotio Cordis* (Janda, 2003; Link, 2002). Children 5 to 16 years of age seem to be uniquely vulnerable to blunt chest impact, because their thoracic cavities may be more elastic and more easily compressed (Link, 2002). Statistics, compiled by the US Consumer Product Safety Commission, indicate that there were 88 baseball-related deaths to children in this age group between 1973 and 1996, an average of about 4 per year (Mueller, Marshall, & Kirby, 2001). This average has not changed since 1973. Of these, 43% of the deaths were from direct-ball impact with the chest (*Commotio Cordis*); 24% were from direct-ball contact with the head; 15% were from impacts from bats; 10% were from direct contact with a ball impacting the neck, ears, or throat; and in 8%, the mechanism of injury was unknown (Mueller, Marshall, & Kirby, 2001). Research has shown that direct contact by the ball is the most frequent cause of death and serious injury in baseball (Mueller & Cantu, 2000).

Preventive measures to protect young players from direct ball contact include the use of batting helmets and face protectors while at bat and on base. Catchers also are required to use special equipment (i.e. helmet, mask, chest, and neck protectors) to decrease injuries, and the elimination of the on-deck circle and the use of protective screening of dugouts and benches also have been designed to decrease injuries (Mueller & Marshall, 2003).

The term, “Little League Elbow”, refers to medial elbow pain attributable to throwing by skeletally immature athletes (Congeni, 1994). Pitchers are most likely to be affected by this condition, but it can occur in other positions that are associated with frequent and forceful throwing. The throwing motion creates traction forces on the

medial portion of the elbow and compression forces on the lateral portion of the elbow (Olsen, Fleisig, Dun, Loftice, & Andrews, 2006). The medial traction forces can cause separation or avulsion of the apophysis from the medial epicondyle of the humerus and overuse injury to the common flexor tendon. The compression forces laterally can cause collapse and deformity of the distal humerus, also known as osteochondritis dissecans of the capitulum of the humerus (Olsen, Fleisig, Dun, Loftice, & Andrews, 2006). Research has shown that early recognition and appropriate treatment of this condition by youth baseball coaches is important to avoid chronic elbow pain, instability, and possible arthritis in young pitchers (Andrews & Fleisig, 1998).

Concern has been raised by many health care practitioners about injuries to the face and eye (Caveness, 1988). Baseball is the leading cause of sports-related eye injuries in children, and the highest incidence occurs in children 5 to 16 years of age (Collins & Comstock, 2008; Mueller, Marshall, & Kirby, 2001). Approximately one third of baseball-related eye injuries result from being struck by a pitched ball. As a result, for this age group, the National Operating Committee on Standards for Athletic Equipment (NOCSAE) has recommended the use of batting helmets with safety face guards (Mueller & Marshall, 2003). These faceguards cover the lower part of the face, from the tip of the nose to below the chin. They also protect against injuries to the teeth and facial bones. Safety sports goggles also protect the eye during fielding. Eye protection is particularly important for young baseball athletes who have undergone eye surgeries, or who have experienced past serious eye injuries (Mueller & Marshall, 2003).

Research has shown that, compared with older players, children younger than 10 years often have less coordination, slower reaction times, a reduced ability to pitch

accurately, and experience a greater fear of being struck by the ball (Yen & Metzel, 2000). Some developmentally-appropriate rule modifications have been advised for this age group, including the use of an adult pitcher, a pitching machine, or a batting tee (Yen & Metzel, 2000). The avoidance of head-first sliding and the use of softer balls also have been recommended. For children younger than 12 years, there have been research reports of rare but serious cervical spine injuries occurring when a player slides head-first, hitting an opponent with the top of the helmet (Janda, 2003). This injury is similar to that caused by spearing (using the head as the lead object) in football. Such head first sliding has been recommended to be banned for baseball players younger than 12 years (Janda, 2003).

Youth Baseball Organizations

Carl Stotz, a resident of Williamsport, Pennsylvania, founded Little League Baseball in 1939. He began experimenting with his idea in the summer of 1938 when he gathered his nephews, Jimmy and Major Gehron, and their neighborhood friends. They tried different field dimensions over the course of the summer and played several informal games. The first league in Williamsport had just three teams, each sponsored by a different business. The first teams, Jumbo Pretzel, Lycoming Dairy and Lundy Lumber were managed by Carl Stotz and two of his friends George and Bert Bebble. The men, joined by their wives and another couple, formed the first ever Little League Board of Directors. Carl Stotz achieved his goal to establish a baseball league to teach boys fair play and teamwork (Van Auken, 2001). The first Little League game took place on June 6, 1939 (Van Auken, 2001). The following year, a second league was formed in Williamsport, and from that point forward, Little League Baseball grew from three teams

in a small Pennsylvania town to an international organization of nearly 200,000 teams in every U.S. State and over 80 countries around the world (Van Auken, 2001).

The Little League Baseball organization now has its headquarters in South Williamsport, directly across the Susquehanna River from the site of the original league; however, it continues to have a Williamsport postal address (Van Auken, 2001). South Williamsport also hosts the Little League World Series. The organization holds a congressional charter under Title 36 of the United States Code (Van Auken, 2001). A provision of the official national Little League rules holds that “at no time should payment of any fee be a prerequisite for participation in any level of the Little League program.” This participation stipulation stems from Stotz’s personal experience of poverty in the Great Depression (Van Auken, 2001).

Little League affiliated programs are divided into six divisions based on the ages of the children playing: Tee Ball (ages 5-8), Minors (7-12), Little or Majors (9-12), Junior (13-14), Senior (14-16) and Big (16-18). The age-limit/ranges vary between Little League affiliated programs, as Little League provides flexibility to the local league to do what best suits its program (Van Auken, 2001). For example, while “minor league” covers 7-12 year olds, most leagues have divisions for coach pitch and kid pitch. Coach pitch is typically reserved for 7-8 year olds, while 9-10 year olds tend to play kid-pitch. Little League welcomes both boys and girls between the ages of 5 and 18 to participate (Van Auken, 2001). The best-known event in the Little League calendar is the annual Little League Baseball World Series, which is held every August in South Williamsport, Pennsylvania. Tournaments leading up to the World Series are held throughout the USA,

including the territories of the U.S. Virgin Islands, the Northern Mariana Islands, and Puerto Rico, and also across the rest of the world (Van Auken, 2001).

According to Little League Baseball, as of 2007, there were more than 2.3 million players in Little League Baseball worldwide (ASAP, 2008). For tournament purposes, official Little League is divided into 16 geographic regions; 8 National regions and 8 International regions. The National regions are New England, Great Lakes, Mid-Atlantic, Midwest, Southeast, Southwest, Northwest, and West. The International regions are Canada, Mexico, Latin America, Europe, Middle East, Africa, Japan, and Asia-Pacific (ASAP, 2008).

In 1951, in another part of the United States, a group of individuals dedicated to the youth of America met in a suburb of Trenton, New Jersey, and formed what was to become the first Babe Ruth League. This group eventually agreed to name Marius D. Bonacci as the “founder” of the program, which was initially named “Little Bigger League” (Tellefson, 2007). The program was renamed in 1954 when Claire Ruth, Babe Ruth’s widow, learned of the merits of the organization and its tremendous growth. She subsequently gave the organization permission to use the name of her late husband, Babe Ruth (Tellefson, 2007).

Babe Ruth League (BRL) programs are divided into three age group divisions. The 13-15 year old Division, started in 1951, where the players participate for the first time under BRL regulations and rules on standard diamonds. Each chartered league is eligible to enter a team in tournament competition. District winners are eligible to participate in statewide competition; successful club, then qualify for one of eight regional tournaments. This organization’s first World Series was held in 1952 (Tellefson, 2007).

The 16-18 year old Division, started in 1966, has showed remarkable growth and success. Teams follow a similar route as their 13-15 counterparts, with the highlights of the campaign being the 16-18 World Series, which was first held in 1968 (Tellefson, 2007). In the year 2000, the 5-12 year old Division, previously known as the Bambino Division, was renamed Cal Ripken Baseball, a Division of Babe Ruth League, Inc (Tellefson, 2007).

Unlike other leagues, such as Little League, Babe Ruth Baseball allows their leagues to put together all-star teams to enter their World Series. All organizations need to do is pay the charter fee, and then they are free to put together any type of team they see fit, as long as they meet the age requirements (Tellefson, 2007). Little League Baseball selects all star teams from geographical boundaries, as mentioned in the previous section (Van Auken, 2001).

Babe Ruth League, Inc. caught on in popularity on a national level first, then international. It now ranks as one of the premier amateur baseball programs in the world; however, it still trails Little League Baseball in participation and volunteerism (Tellefson, 2007). Babe Ruth League, Inc. has increased steadily from its original 10-team league in Hamilton Township, Mercer County, New Jersey, to its present combined size of over 1,035,123 players on approximately 56,622 teams in more than 9,113 leagues (Bullpen, 2008).

A five-member executive staff, assisted by regional service representatives, maintains Babe Ruth's International Headquarters at 1770 Brunswick Pike in the suburban Trenton community of Lawrence Township (Tellefson, 2007). Local organizations are independent within the guidelines provided by Babe Ruth League

International Board. The Babe Ruth International Board is the governing body, while Babe Ruth Headquarters is the administrative and promotional center (Tellefson, 2007).

Health and Safety Standards

As has been stated in other youth sports studies and literature that are related to health and safety issues (Pasternak, Veenerma, & Callahan, 1996; Radelet, Lephart, Rubenstein, & Myers, 2003), youth baseball appears to have many areas where injury prevention and care require further investigation. One group of authors noted that data and additional attention are needed concerning the education and practice of all health and safety issues for all youth baseball organization directors and coaches (Radelet, Lephart, Rubenstein, & Myers, 2003).

During youth sporting events, coaches often are the only adults present, and in the event of injury or illness, they are required to serve in loco parentis to address the health care needs of their young athletes (Libman, 1998). It would seem reasonable that Adult and Child First Aid and CPR training would be prerequisites for competence in this situation where a medical emergency may occur at any given time (Courson, 2003; Feld, 2000). According to Courson and Feld, CPR and First Aid training should be a requirement to coach a sport at any age level. CPR and First Aid training can be taught at any site that is convenient to the youth baseball association and its coaches. The training program includes instruction, practice, and testing of these essential emergency skills. A normal training session usually last six to eight hours and costs around \$5.00 per coach (Courson, 2003; Feld, 2000). The course costs also include personalized certification cards that coaches keep either in their wallets or their first aid kits.

Prompt administration of First Aid and CPR can prevent death, and lessen the incidence of long-term disability (Courson, 2003). These skills are effective regardless of the age of those receiving care. The incidence of sports-related injuries in children has increased dramatically as the number of children participating in youth sport activities has increased (Micheli & Glassman, 2000). While the need for coaches to have these skills may seem unnecessary in youth baseball due to the age of the athletes involved, several studies document youth baseball injury rates that are not significantly different from those identified in youth and adolescent football (Radelet, Lephart, Rubenstein, & Myers, 2002). In baseball and softball, serious injuries (e.g. fractures, concussions, dislocations) in this age group range from three percent of all injuries reported per season (Radelet, Lephart, Rubenstein, & Myers, 2002), to an average of twenty-five percent of all injuries reported over ten seasons (Mueller & Marshall, 2003).

To further complicate this situation, between 1973 and 1995, the Consumer Product Safety Commission identified more fatalities occurring in baseball players between the ages of 5 and 14, than for athletes in any other sport (Vincent & McPeak, 2000). Eighty-eight baseball-related deaths occurred as a result of cardiac concussion (Comotio Cordis), a rare and relatively unknown condition that results in sudden death from instantaneous cardiac arrest following a low-impact, blunt trauma to the chest (Link, 2002). These fatalities may be prevented with prompt administration of correct CPR skills within one minute of collapse (Yabek, 2004). Respiratory and cardiac arrests also can occur after asthma attacks, head injuries, trauma-induced shock (Smith, 1998).

Sports safety and injury prevention researchers, national medical associations, public health professional organizations, and youth safety groups recommend that all

coaches be trained in First Aid and CPR so that they are prepared to meet emergency situations encountered in youth sports (Anderson, Courson, Kleiner, & McLoda, 2002). National governing bodies of youth baseball, such as Little League and Babe Ruth League, have only made recommendations about First Aid/CPR training to their affiliates, and they do not mandate such training for all coaches (Courson, 2003).

Emergency Action Plans: Although the catastrophic or life threatening injury rate is low in youth baseball, emergencies can occur unpredictably during events, requiring immediate actions to be taken to sustain life until help arrives. Since time is a critical factor in determining the outcome of emergency situations, knowing what to do before a crisis occurs is the single most important element of emergency management (Anderson, 2004). Emergency action plans contain the standards of care and descriptions of these plans have been developed by several national sports organizations including the National Collegiate Athletic Association (NCAA), the National Federation of High Schools (NFHS), the American College of Sports Medicine (ACSM), and the National Athletic Trainers' Association (NATA) (Anderson, 2004). The components of emergency action plans including, personnel, communication, transportation, equipment, facilities and documentation should be venue-specific and in written form, so that coaches can be educated on how to implement the policy and can rehearse emergency procedures on the field as part of their annual safety training (Anderson, 2004). Currently, there is no national model for emergency planning available specifically for youth baseball organizations. Little League Baseball, Inc. has recognized emergency planning as an injury prevention method, and since 1995 (Pasternak, Veenema, & Callahan, 1996), has provided emergency planning recommendations and implementation

assistance to some, but not all, of the member leagues. They report that approximately eighty percent of their eligible leagues have implemented all or some elements of these emergency planning recommendations (ASAP, 2008).

Environmental Conditions: Heat – Reports of high school, collegiate and professional athlete deaths during summer training camps, over the past several years, have focused attention on the need for sports leagues to have a heat illness prevention policy. There is general agreement in the literature that most heat illness can be prevented (Binkley, Beckett, Casa, Kleiner, & Plummer, 2002), and that exercising children physiologically adapt to heat stress in different ways than do adults. Specific times of high temperature and high humidity should result in cancelled or modified. Water or sports drinks should be made available for participants at all games and practices (Casa, Armstrong, Hillman, Mountain, Reiff, & Rich, 2000). Dehydration is the first step in the spectrum of heat related illnesses which can progress to heat exhaustion and life-threatening heat stroke if not recognized and treated correctly (Casa, Armstrong, Hillman, Mountain, Reiff, & Rich, 2000). It has been documented that bouts of heat exhaustion and heat stroke may increase the risk of experiencing subsequent episodes (Binkley, Beckett, Casa, Kleiner, & Plummer, 2002). The NATA guidelines on heat illness prevention clearly outline a practical plan including access to heat/humidity index to decrease the likelihood of heat related illnesses.

Lightning – The three main components of safety plans when lightning is present provides guidelines as to when to leave the field if a storm approaches, where to go for appropriate shelter, and when to resume play. This plan is outlined in the NATA position statement Lightning Safety for Athletics and Recreation (Walsh, Bennett, Cooper, Holle,

Kithil, & Lopez, 2000). The first two components are clearly defined in the literature and in some youth baseball organization directives (Micheli & Glassman, 2000). The third component, when to resume play, is not broadly defined. Based on an extensive literature search, the NATA developed recommendations to wait thirty minutes after last sound of thunder or lightning flash before resuming play (Walsh, Bennett, Cooper, Holle, Kithil, & Lopez, 2000).

Emergency Medical Services: Youth baseball emergency planning advocates and several national governing organizations recommend that youth baseball leagues notify local emergency medical service units of all field locations, season start and end times, regular game and practice times, and whether emergency vehicles are able to drive directly onto the field, if necessary (Anderson, 2004). While most field accessibility is difficult to change, information should be provided to emergency medical service about whether EMS vehicles can drive directly onto fields. Considerations for topography, geographic and financial constraints, having directional signs on the main road to the field should be considered when implementing emergency plans (Anderson, 2004).

Early activation of the emergency medical-services system can be the most important procedure in any emergency health situation in youth baseball (Andersen, Courson, Kleiner, & McLoda, 2002). Directors, coaches, and parents should be aware of the location and phone numbers of the nearest emergency medical service. Working phones and proper directions to the playing fields can decrease the amount of time it takes for an ambulance to get to the scene of the emergency (Anderson, 2004).

Proper use of the local emergency medical services also allows for the stabilization and transportation of the injured or ill victim to the nearest health care facility. Research

has shown that a person who has been given the proper care from emergency medical services during a health crisis has a greater chance to survive than do those victims that do not receive the proper care in the appropriate amount of time or at all (Anderson, 2004). The research has shown that a victim of Commotio Cordis, a blunt force injury to the chest and heart, has a greater chance of survival if proper care is given by emergency medical services within an eight to twelve minute time period from when the injury occurred (Vincent & McPeak, 2000).

Protective Equipment: Although numerous studies have shown that protective equipment can significantly reduce the frequency and severity of injuries in youth baseball (Janda, 2003; Muellar & Marshall, 2003), the only equipment currently required by governing leagues for youth baseball and softball are batting helmets and safety equipment for catchers (i.e. helmet, mask, chest, and neck protectors) (Viano, Bir, Cheney, & Janda, 2000). All other equipment is either optional or recommended, but not required by governing leagues (Viano, Bir, Cheney, & Janda, 2000). The reluctance of governing organizations to mandate safety equipment beyond batting helmets and catcher safety gear falls into three categories: research results on the injury preventive effectiveness of such safety equipment, such as chest protectors, are contradictory or inconclusive (Link, 2002); youth baseball traditionalists advocate against changes in balls and face guards on batting helmets, because they change the parameters of the game (Mueller, Marshall, & Kirby, 2001). The third category, cost-to-risk analysis, is used as the sole criterion for determining whether safety equipment should be recommended or mandated. League directors, therefore, recommend use of this equipment because of the low injury rates for the sport (Mueller & Marshall, 2003).

Chest protectors were designed to decrease the incidence of Commotio Cordis by dissipating or absorbing the energy of ball impact and re-distributing the force of this impact over a larger area. Yet, the results of research using biomechanical surrogates (Viano, Bir, Cheney, & Janda, 2000) and swine models (Link, 2002) varied in their abilities to document the effectiveness of different brands of commercially available chest protectors in decreasing impact. Twenty-eight percent of reported deaths from Commotio Cordis in sports occurred even though the athletes were wearing some type of chest protector (Bir, Viano, & Casada, 1998), and currently, there are no significant recommendations for consistently requiring chest protectors, although arguments have been made for equipment improvements (Viano, Bir, Cheney, & Janda, 2000).

A similar situation arises with recommendations to reduce head, eye, facial and chest injuries by using modified balls. Research by (Marshall, Mueller, Kirby, & Lang, 2003) demonstrates that softer balls reduce the risk of injury to head, body, and chest, prompting organizations like the American Academy of Pediatrics to advocate for softer balls. Studies show that lighter, not softer balls would be effective in reducing the incidence of Commotio Cordis, and that softer base balls may increase the risk in some cases (Janda, 2003). Mueller's study found that fifty-three percent of leagues discontinued use of faceguards in one season after their initiation because of visibility issues, and that modified baseballs were also discontinued in twelve percent of participating leagues because of the perceived change in the bounce of the ball (Mueller & Marshall, 2003). There have been some studies evaluating the injury preventive value of faceguards and chest protectors for defensive players, but the results have been inconclusive (Viano, Bir, Cheney, & Janda, 2000).

Reconditioning & Equipment Repair: While the results have been inconclusive for injury prevention on many different types of safety equipment, there is no ambiguity in the recommendation that annual equipment reconditioning and frequent equipment inspection is important to youth sport safety (Street, 2000). Major repairs to safety-approved equipment can only be done by authorized entities (Street, 2000), and the recommendation to leagues is that they keep written records of repairs and replacements, as well as establish a safety equipment replacement and reconditioning fund (Street, 2000). The cost of reconditioning and the cost of replacement equipment, the effort required to return pieces to the manufacturer or authorizing organization, and ignorance of manufacturer's requirements may be impediments to fulfilling these recommendations (Street, 2000).

Facility Safety: Inspecting the field for dangerous removable objects, such as broken bottles, hypodermic needles, caustic substances; and making officials and visiting teams aware of poor field conditions, such as holes, exposed fence tops, trees, phone poles and other obstacles on fields, decreases the risk of injury during events (Rutherford, Kennedy, & McGhee, 1984).

Pitching Safety: Most youth leagues have pitching limits based on the number of innings pitched; however, many baseball and medical experts believe that pitching recommendations should be based on pitch count (Lyman, Fleisig, Andrews, & Osinski, 2003). The American Sports Medicine Institute (ASMI) was commissioned by the USA Baseball Medical & Safety Advisory Committee to study pitch limits in youth baseball. In 1996, the ASMI sent out surveys to 85 baseball experts (including orthopedic surgeons and coaches) and received 28 responses (Andrews & Fleisig, 1998). Although the

number of responses was not large, it still provided enough data for ASMI to put together some pitch count recommendations. The results of the survey found that the number of pitches thrown is more important than the number of innings thrown for determining rest requirements (Andrews & Fleisig, 1998). The ASMI pitch count recommendations are listed in Figure 1 (Andrews & Fleisig, 1998).

Figure 1.

ASMI Pitch Count Recommendations for Youth Baseball Leagues

Age	Max. Pitches Per. Game	Max. Games Per. Week
8-10	52	2
11-12	68	2
13-14	76	2
15-16	91	2
17-18	106	2

Defining Leadership

Leadership has been viewed in all areas of our world since the beginning of time, when groups of people would gather together (Bass, 1990). Leadership is an ever changing concept that has evolved over the last century. In the 1930’s, the definition of leadership was stated as, “the ability to impress the will of the leader or those who led

and induce respect, loyalty, and cooperation” (Termes, 1996). In the 1940’s, leadership was defined as “the result of the ability to direct men, apart from the power that comes from external circumstances” (Termes, 1996). This definition specifically addresses the male domination of leadership positions in the work force during that time. As time went on through the 1950’s and 1960’s, leadership was viewed as, “the acts by a person who influences other persons in a shared direction” (Termes, 1996). In the 1970’s and 1980’s, leadership meant to inspire others to undertake some form of meaningful action as determined by the leader (Termes, 1996). In the 1990’s, leadership was “an influence relationship between leaders and followers who intend real changes that reflect their mutual purposes” (Termes, 1996). Finally, in the early 2000’s, leadership has been viewed as “the way a person is able to adapt and change his/her style to make something work” (Buckingham, 2005).

Over the years, leadership also has been identified as the “process of convincing others to take actions towards a common goal” (Locke, 1991). Locke went on to state that leadership consists of three elements. The first is that leadership is a relational concept. This means that it takes more than one person to create a leader, and without followers, there is no leader. The second element is that leadership is a process. A leader must do something to make something else happen. The third element is that leadership requires followers to believe and take action. This means that a leader can not succeed without the followers believing and acting (Locke, 1991).

As all of these leadership definitions were reviewed, it has been noted that the earlier definitions of leadership were more direct and defined. These implications led to the association of leadership with the type of authoritarianism form of leadership

(Termes, 1996). As leadership has emerged and changed over the decades, so too has the meaning of leadership. In present times, leadership has become more interactive and friendly in terms of relationships (Termes, 1996). It can be seen that there are many situations through which leadership can be defined. Each situation presents its own operational definition to which the descriptions are applicable and noted (Termes, 1996). In youth baseball, there are many different situations where leaders emerge in various stages and positions.

Effective Leadership in Youth Baseball

Looking at the definition of leadership and how it applies to the leaders of youth baseball organizations, usually the directors of the organizations are the main leaders. Leadership in youth baseball is important for the overall organization, and the directors are the people most responsible for making sure the organizations run smoothly. Bennis (1989) stated that there are basic reasons why leaders are important. All three of these reasons could be applied to the directors of youth baseball organizations. First, leaders are responsible for the effectiveness of organizations. Second, leaders fill in the spaces that evolve from past to present to future concerns and give the organizations a direction to create solutions for the existing concerns. Third, leaders help guide the organization back to having integrity (Bennis, 1989). Effective leaders of all organizations come in all shapes, sizes, colors, and intelligence levels. The one thing that all effective leaders have in common are the characteristics that make them effective leaders for their own organizations (Bass, 1990; Bennis, 1989).

Beginning with self-efficacy, this is one of the main characteristics that effective leaders exhibit. Bandura (1982) found that having a sense of self-efficacy helps to develop other essential characteristics, as well as other personality traits that are identified in effective leaders (Bandura, 1982). This can easily be seen in youth baseball directors, who must find effective ways to work with the personalities of many coaches. Self-efficacy is how directors judge their capabilities and how their own self-beliefs affect their behaviors. According to Bandura, “Self-efficacy involves a generative capability in which component the cognitive, social, and behavioral skills must be organized into integrated courses of action to serve innumerable purposes” (Bandura, 1982). Self-beliefs affect the leader’s behavior in four different ways. Each of these concepts is explained further.

In the first concept, people are likely to engage in experiences where they feel most comfortable (Bandura, 1986). For example, youth baseball coaches who have a high self-efficacy and a low skill level may try to coach at a level that they are not prepared to undertake, which may negatively impact the young athletes. On the other hand, coaches who have low self-efficacy and high skill level may shy away from experiences that they are capable of accomplishing, which may take away from opportunities for the young athletes to learn.

In the second concept, self-beliefs assist in determining how much effort people will give to experiences and how much they will persevere to complete that activity (Bandura, 1986). For example, youth baseball coaches who have a strong sense of self-belief will engage in more challenging experiences, which would raise their self-efficacy

levels. Just the opposite occurs to the coaches with low self-beliefs, where they tend to shy away from challenges during games and may never gain self-efficacy.

The third concept, self-belief, may influence a person's thought patterns and emotional reactions (Bandura, 1986). For example, youth baseball coaches with low self-efficacy may perceive that baseball is a harder game to coach than they originally thought. This thought concept would only narrow the coach's vision on how to work with the young players, which in turn would make them more passive on the field.

The fourth concept is that a high level of self-confidence leads to higher levels of success, which in turn, may lead to more challenging opportunities. Conversely, low self-confidence may lead to defeat and failure before the person has even attempted the skill (Bandura, 1986). For example, a youth baseball coach's perception of their efficacy helps to influence how they think, feel, and coach in the sport. How a coach feels about themselves will most likely determine their motivation and performance in coaching the game of baseball. The concept of self-efficacy may also lead directly into identifying more characteristics, skills, and abilities that are essential for effective leadership in youth baseball.

Hoy and Miskel (1996) identified that successful leaders have dynamic personality, are motivational, and have good skill traits. Four main personality traits associated with effective leadership were identified. They are self-confidence, stress tolerance, emotional maturity, and integrity. Leaders who have a sense of self-confidence are more likely to push themselves and their followers to higher levels (Hoy & Miskel, 1996), and stress tolerant leaders are likely to make good decisions at all times. Emotionally mature leaders are individuals who have a true sense about their strengths and weaknesses.

Leaders who have integrity are believed to possess the characteristics that are identified in effective leaders including honesty, responsibility, ethics, and trustworthiness (Hoy & Miskel, 1996).

Effective leaders also possess motivational traits that they can incorporate when creating the opportunity for other followers to assist in the goal of the situation (Hoy & Miskel, 1996). These motivational traits include achievement values, expectations, drive, and interpersonal needs. All of these traits together define the characteristics of effective leaders (Hoy & Miskel, 1996).

There are four specific leadership skills that identify leadership effectiveness in organizations. These four skills include technical skills, interpersonal relationship skills, conceptual skills, and administrative skills (Yukl, 1994). Technical skills involve the knowledge and techniques utilized when working with other people. Interpersonal relationship skills involve the ability to communicate and to understand people's feelings. Conceptual skills include decision making and the concepts used to solve difficult situations. And finally, administrative skills combine all the other three skills to help create overall effective leadership for the organization (Yukl, 1994).

To reiterate the characteristics of effective leaders, successful leaders must have an excellent balance of skills and abilities. "Leaders are technically skillful, capable in personal relationships, are tough decision makers, who know how to energize people and align them in the same direction. Leaders can operate with more than one leadership style, and can shift easily from a team or organization approach to command and control many situations" (Gilkeson, 1997). All of the above characteristics can be applied to leadership skills needed in youth baseball. Effective leadership in youth baseball

organizations starts with the directors of each organization and can also be effective when used by to the volunteer coaches of each team in those organizations. But it is the directors who need these skills the most and who should have complete control of all major functions and make the decisions for the youth baseball organizations that include areas of health and safety standards (Libman, 1998).

Leadership and the Youth Baseball Director

When leading a youth baseball organization, the director of the baseball organization often has little to do with the actual game of baseball and spends the majority of the time with administrative matters. The directors must balance the player's needs, with the coaches needs, with the organizations requirements, and finally, with the parents needs. With such wide-reaching responsibilities with sometimes competing interests, leading these organizations is not very easy. Leadership requires certain characteristics that are learned through experiences (Yukl, 1994) and are mastered over time and with experience. "Being a leader, and practicing leadership is not a science; it is a process through experience" (Mazzoni & Watzlaf, 1989).

Youth baseball organization directors are individuals who control and manage many different age level baseball teams. Many organizations have 5 or 6 different age levels with dozens of teams in each age level. As mentioned previously, these age levels through Little League Baseball are: Tee Ball (ages 5-8), Minors (7-12), Little or Majors (9-12), Junior (13-14), Senior (14-16) and Big (16-18) (Van Auken, 2001). Typical responsibilities of youth baseball directors include field and facility control, organizational equipment and budget control, player registration and management, parent

communication, volunteer coaching issues, and implementing and assuring health and safety standards (Janda, 2003; Sundeen, 2001; Van Auken, 2001).

The youth baseball directors often should have control of all field and facility responsibilities for the organization, including the development and management of the field schedule, which must be published at the start of the season. The field schedule includes the times and locations for all practices, games and tournaments. Making this master schedule available to all concerned on the organization web page or other public forum can reduce multiple communications and eliminate miscommunications (Sundeen, 2001).

Youth baseball directors also must develop and manage the organizations budget. Most budgets for recreational baseball teams are simple; however, good fiscal management is essential for the organization. Directors must make sure that they account for all costs, like league fees, equipment inventory and ordering, tournament fees, team transportation, and refreshment stand inventory issues (Van Auken, 2001).

Directors of youth baseball must manage player registration and team rosters. The directors ensure that all players and parents receive key information via their preferred communication method (e.g. email, phone number, and home address). Directors also make sure that teams are made in a fair manner with regard to age level and playing ability. The directors also organize communication service systems (web page), so that all constituents are able to know and follow the youth baseball organization throughout the entire season (Sundeen, 2001).

Youth baseball directors also must interact and gain involvement from volunteer parents who coach the teams. Obviously, directors have an extensive list of

responsibilities, and cannot do everything themselves. Effective baseball leaders seek volunteers, based on skills and interests. Parents who have good baseball skills may be able to participate as either head coaches or assistant coaches (Van Auken, 2001).

Lastly, youth baseball directors are responsible to organize and manage all health and safety standards for their organizations. This includes ensuring that all baseball activities are conducted in proper and safe facilities and that the players are provided with the appropriate safety equipment for the safe execution of skills and tactics. Catastrophic and less serious injuries can be prevented by taking appropriate safety precautions with playing fields and equipment (Janda, 2003).

Given the nature of their many responsibilities, utilizing effective leadership skills, and demonstrating professional characteristics, will allow youth baseball directors to function more effectively and to be in a position to decrease negative health and safety outcomes that may occur in their organization.

Related Research on Health & Safety Issues

Youth baseball's growing popularity in the United States and the numerous injuries that young players have incurred has been the subject of inquiry by youth organizations (Pasternack, Veenema, & Callahan, 1996). In a report by the Baseball and Softball Council (2005), baseball was second only to basketball in youth sport team participation. Basketball had an estimated 8.6 million participants from 6 to 17 years of age, while baseball had an estimated 5.0 million participants from 5 to 16 years of age participating in organized leagues (Mueller, Marshall, & Kirby, 2001).

Youth baseball organizations, like most athletic programs, rely on adult volunteers, many of whom are untrained in the particular sport. Youth baseball organizations claim not to have the expertise and financial resources to formally educate their volunteer coaches and directors on proper health and safety standards (Janda, 2003). Little research has been done to investigate health and safety knowledge of volunteer coaches and directors. The research that has been done in youth baseball has been limited to participation rates, types of injuries, and an assorted amount of health and safety issue studies (Janda, 2003).

In the Eighteenth Annual Report for the National Center for Catastrophic Sport Injury, Mueller and Cantu (2000) defined four categories of sport injury:

1. Fatality – death
2. Non-fatal – permanent severe functional disability
3. Serious – no permanent functional disability but severe injury
4. Non-serious – no permanent functional disability and non-severe injury

Both Mueller and Cantu characterized sport injuries as direct or indirect. Direct injuries occurred to participants who were taking part in the skills of a particular sport. Indirect injuries were caused by a systemic failure of the body as a result of exertion from participating in a sports activity. Both direct and indirect injuries could result in any of the four categories of sport injury, including fatality. Mueller and Cantu (2000) identified four youth baseball deaths between the summer of 1999 and the spring of 2000. All four fatalities were caused by direct methods where a young participant slid head first into a base and when a player was struck by a thrown or batted baseball (Mueller & Cantu, 2000).

Previous research in youth baseball has shown that it has the highest fatality rate among sports for children ages 5 through 14, with three to four children dying from baseball injuries each year between 1998 and 2000 (Consumer Product Safety Review, Fall, 2001; Radelet, Lephart, Rubenstein, & Myers, 2002). The potential for life-threatening injury in baseball resulted from direct strike with a bat or baseball. Incidences resulting in death had been found to occur from impact to the head that resulted in intracranial bleeding and from direct chest impact (Radelet, Lephart, Rubenstein, & Myers, 2002). In a much earlier study, the USA Consumer Product Safety Review Commission (Fall, 1986) found that from 1973 to 1980, there were 40 youth baseball related deaths reported for children between the ages of 5 and 14. Of these deaths, 21 resulted from head and neck injuries, 17 from non-penetrating impact to the chest, and 2 from undisclosed causes (Consumer Product Safety Review, 1986). Mueller, Marshall, and Kirby (2001) reported 13 deaths among five to twelve year old Little League baseball players identified in a study conducted for the years between 1987 and 1996. Of these deaths, 4 were from direct-ball impact to the chest, and 4 were from direct-ball impact to the head. Three deaths were from impacts from baseball bats, and 2 were from direct contact with a ball impacting the neck, ear, or throat of a player (Mueller, Marshall, & Kirby, 2001).

The most frequent cause of serious injury and death in youth baseball is from direct contact with the baseball (2001). Over the years, preventive measures have been implemented to protect young players from direct baseball contact. Batting helmets, face guards, break-away bases, and special equipment for catchers are some of the advances that have been developed to decrease the chance of serious injury. There also has been

concern about eye injuries in youth baseball. More eye injuries to children occur in baseball than in any other youth sport, and the highest incidence occurs in children 5 to 14 years of age (Yen & Metzel, 2000). Marshall, Mueller, Kirby, and Yang (2003) noted that many of these eye injuries could have been prevented or at least reduced if equipment, such as reduced-impact baseballs and face guards, were used during practices and games. They reported in the same study that proper use and maintenance of all safety equipment and the active promotion of a safety-conscious attitude can only be gained through the involvement of the youth leagues coaches and directors (Marshall, Mueller, Kirby, & Yang, 2003).

In recent years, more concern has been raised about the possible risk factors for injuries in youth baseball pitchers. Some of the health and safety research over the last 10 years has shown interest in the young thrower and identifying the possible causes of “Little League Elbow”. In a study done by Olsen, Flesig, Dunn, Loftice, and Andrews (2006), most pitching injuries occurred to participants between the ages of 9 and 16 and determining risk factors for possible shoulder and elbow injuries was overuse. They also determined that a system using a pitch count per inning/game and pitched games per week method could help to prevent overuse arm injuries to pitchers in youth baseball. It was also determined that youth baseball pitchers who throw curveballs or sliders have an increased risk of elbow and shoulder injury. Therefore, it is now recommended that youth pitchers should avoid throwing those types of pitches in order to reduce the risk of overuse injuries (Olsen, Flesig, Dunn, Loftice, & Andrews, 2006).

R.L. Washington and the American Academy of Pediatrics (2001) investigated a report on baseball injuries to children between 1998 and 2000, and developed a list of

recommendations to help educate directors and volunteer coaches in the prevention and care of injuries in youth baseball. The following recommendations emphasize the roles of youth baseball directors and coaches in decreasing the chance of injuries for the young players:

1. All preventative measures that can reduce serious injuries should be employed in youth baseball. These include approved batting helmets; catcher's helmet, neck and throat protectors, and rubber spikes on shoes. Elimination of the on deck batting circle, the protective fencing around dugouts and benches, and the use of breakaway bases is highly recommended.
2. All preventative measures should be employed to protect young baseball pitchers from disabling throwing injuries. These measures include the restriction on the amount of pitching in games, instruction of proper biomechanics, outlaw of throwing curveballs and sliders, and proper education of coaches and children to permit early recognition of overuse pitching injuries.
3. Protective equipment should always be sized and maintained properly. This should be employed in all game and practice settings.
4. Rules should be made to avoid head-first sliding into all bases for players less than 10 years of age.
5. Players are encouraged to wear face guard protectors on their helmets and goggles in the field to avoid serious head and facial injuries.
6. Low impact baseballs should be used to reduce serious injury risk.
7. Surveillance of youth baseball injuries should be continued. Research should be continued to develop other new, improved, and efficient health and safety equipment (Washington, 2001).

Participation in youth baseball provides an opportunity for children to develop physical and social skills. However, when the demands and expectations of the sport exceed the maturation and readiness of the participant, the positive aspects of participation can be negated. According to Washington and the American Academy of Pediatrics (2001), the nature of the adult director and volunteer coach involvement can influence the degree to which participation in organized baseball is a positive and safe experience for these children (Washington, 2001).

CHAPTER 3

Methodology

This research was designed to identify the issues of health and safety awareness in youth baseball organizations and their directors. The information that was identified in this study was used to make recommendations for the development and implementation of health and safety standards for youth baseball organizations throughout the United States.

Participants

The participants in this study were youth baseball league directors from the two major youth baseball organizations across the United States. The first groups included the directors from youth baseball organizations that are affiliated with Little League Baseball, Inc. The second group included the directors from the youth baseball organizations that are affiliated with Babe Ruth Baseball League, Inc. All of the participants were affiliated with either Little League Baseball or Babe Ruth Baseball.

The youth baseball directors that were asked to participate in this study were selected randomly from an online website of youth baseball organizations called Eteamz (www.eteamz.com). The Eteamz website provides a listing of youth baseball participant organizations and their website addresses. This selection process included identifying and randomly selecting youth baseball organizations from the northern, southern, eastern, and western regions of the United States to participate. A pre-determined number of organizations from either Little League Baseball or Babe Ruth Baseball leagues were

contacted via email on their websites through a personal email communication letter, through which they were asked to participate in this study.

Based on the number of organizations listed on the online website Eteamz (www.eteamz.com) in May of 2009, it was determined that the Little League Baseball group had approximately 720 listed organizations, with a resulting power analysis indicating that a minimum of 197 survey responses were needed to produce a 5% minimum of error and a 90% confidence level. Information also from Eteamz indicated that the Babe Ruth Baseball group had approximately 230 listed organizations, with a resulting power analysis indicating that a minimum of 125 survey responses were needed to produce a 5% minimum of error and a 90% confidence level. While a total of 197 and 125 respondents were necessary, solicitation for participation was sent to 900 youth baseball organizations, not used in a previous study using the same instrument.

Validation of the Instrument

A previously developed and validated survey consisting of 52 questions (Zoomerang & Appendix A) was used in this study. The previous survey was developed in 2004 with purpose of identifying the impressions of Little League and Babe Ruth Baseball directors Western Pennsylvania on health and safety issues. The survey is divided into five areas: league demographic information, league health and safety standards, league health and safety issues, safety league assistance for health and safety standards, and league director leadership information. The survey questionnaire for all directors included demographic questions regarding the number of registered players, coaches, and number of fields used by the league. There were also questions asked in

regards to the league directors' ages, gender, years involved with youth baseball, educational backgrounds, and attributes related to leadership. Finally, questions were asked in regards to organization name and location for purpose of geographical mapping and follow up letter needs. Each organization was made aware that all information was to be kept confidential.

Four main constructs were used for the development of this survey instrument. The constructs were developed using the criteria given by the health and safety standards that were required by both Little League and Babe Ruth Baseball (ASAP, 2008; Bullpen, 2008). The constructs also were developed based upon the recommended health and safety standards given by the NATA Position Statement: Recommendations for Emergency Planning in Athletics (Anderson, Courson, Kleiner, & Mcloda, 2002).

- Construct #1 was that common health and safety standards exist for both Little League and Babe Ruth Baseball. All participants in these leagues should utilize these standards to ensure adequate health and safety for the players.
- Construct #2 was that there are additional health and safety recommendations developed and validated by the National Athletic Trainers' Association that when implemented could further ensure the health and safety of the players.
- Construct #3 was that support for these additional health and safety recommendations by the league directors could better assure their implementation in both Little League and Babe Ruth Baseball.
- Construct #4 was that Little League and Babe Ruth Baseball directors who evaluated themselves as possessing leadership abilities would be more likely to

support the “recommended” additional health and safety standards than would those who assessed their leadership attributes as low.

The content validity of the instrument was established by two experienced Athletic Trainers (ATs), as well as an experienced youth baseball coach who has worked with ATs to improve safety for baseball athletes for over 10 years. The content was validated using the same health and safety regulations that are required by Little League and Babe Ruth Baseball (ASAP, 2008; Bullpen, 2008), as well as the standards given by the NATA Position Statement: Recommendations for Emergency Planning in Athletics (Anderson, Courson, Kleiner, & Mcloda, 2002). This content can be delineated into the specific health and safety criteria, both required and recommended; criterion-related validity then was assessed using a Table of Specifications (Figure 2).

The face validity of the instrument was assessed by three youth baseball directors from diverse communities in the Western Pennsylvania area, one survey development consultant, as well as an experienced youth baseball coach and two experienced Athletic Trainers. The questions used in the survey were refined with the help of the survey consultant. The survey questions then were given to the three youth baseball directors to review and make comments. During this face validation process, the youth baseball directors responded consistently to the questions in the study that were related to the required content that is contained in the first construct. There were just a few minor comments given by the youth baseball directors, and these comments were used to help modify the initial language and format of the questionnaire to make the instrument more appropriate for the audience for whom it was intended.

Finally, the reliability of the questions in this instrument that were used in a previous study demonstrated a Cronbach Reliability Analysis Alpha Score of .722 for the questions that did not involve personal opinions or personal demographics (Radelet, Turocy, & Gorse, 2004). There was a slight modification of the existing questions from a previous study for this survey instrument. The modification was done to appropriately place and match the survey questions with the constructs and the research questions used in this study. An example of this would be the rewording of questions used in the survey with regards to leadership attributes needed by league directors for implementation of their health and safety standards.

Figure 2.

<u>Table of Specifications</u>	<u>(Question Number)</u>
<i>I. Director Demographic</i>	42-47
<i>II. League Demographic Information</i>	1-11
<i>III. Construct #1. Health & Safety Standards from Little League and Babe Ruth Baseball</i>	
1. <i>Emergency Action Plan (EAP)</i>	12-14
2. <i>Family Emergency Contact Information</i>	15
3. <i>Playing Field Inspection</i>	16-17
4. <i>First Aid Kits</i>	18-19
5. <i>Pitching Safety</i>	20
6. <i>Safety Equipment</i>	21-23
<i>IV. Construct #2. Additional NATA Health & Safety Recommendations</i>	
1. <i>CPR and First Aid Training</i>	24-25
2. <i>EMS Contacts</i>	26
3. <i>Medical Information</i>	27
4. <i>Emergency Communication – Phone Systems</i>	28-29
5. <i>Environmental Concerns</i>	30-31
6. <i>Head and Neck Injuries</i>	32
7. <i>Additional Safety Equipment</i>	33-36
<i>V. Construct #3. Identification for Additional Resources</i>	
1. <i>Additional Resources Needed for Health & Safety Implementation</i>	37-41
<i>VI. Construct #4. Director Leadership Attributes</i>	
1. <i>Leadership Abilities</i>	48
2. <i>Communication Skills</i>	49
3. <i>Management Skills</i>	50
4. <i>Personal Skills</i>	51
5. <i>Emergency Procedure Skills</i>	52

Research Design and Procedures

This study used a survey research method with a focused questionnaire developed according to the procedures suggested through research examined by the review of literature. The same survey was administered to Little League and Babe Ruth League youth baseball directors through the Zoomerang online survey system. Participation in the research was strictly voluntary, and all information provided was kept strictly confidential. A direct email communication letter was sent to each of the directors, asking them to participate in the survey, prior to their 2009 baseball pre-season (Appendix B). The purpose and method for the research study was explained through directions that was part of the initial email letter. Participants were asked to complete the survey within a two week period after they receive their initial email communication. Participants also were told that the approximate time for completing the survey was 15 minutes. For those organizations originally contacted but not responding, an additional incentive email letter was sent to encourage their participation in the study (Appendix C). The incentive email letter to directors gave information on how to certify all directors and coaches in their youth baseball organizations on sports safety through the National Council for Sports Safety (NCSS) organization.

Informed Consent

The youth baseball directors' participation in this research study was strictly voluntary. Participants were asked to answer all the questions in the online survey; however, they could withdraw from participating in the study at any time. By participating in this study, it was not anticipated that the youth baseball director would

experience any physical or psychological risks. The risk of injury, either physical and/or psychological, to a participant was not greater than those encountered in normal life activities. All participants were anonymous, and all individual information provided was kept strictly confidential; only aggregate responses were used in the data analysis.

Data Analysis

The data collected in the study was analyzed using the SPSS version 17.0 program. Descriptive statistics with frequency distributions of data and comparison of two groups was the statistical methods used with this study. A two-tailed t-Test analysis was used for all ordinal data. The statistical power for all comparisons in the data that were analyzed was set at ($p < .001$). The reliability of the instrument was determined using a Cronbach Reliability Analysis Alpha Score, once all of the completed surveys were returned.

Research Questions and Hypotheses

Research Question 1: *Do differences exist between the directors of Little League Baseball and Babe Ruth Baseball with regard to the implementation of the required health and safety standards governed by their leagues?*

Hypothesis 1: There will be a statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to the implementation of all the required health and safety standards governed by their leagues. This prediction is based on previous research which had shown that Little League

Baseball directors have had better knowledge and understanding with regard to their league's required health and safety standards.

Research Question 2: *Do differences exist between the directors of Little League Baseball and Babe Ruth Baseball with regard to the implementation of the additional health and safety standards that are recommended by the National Athletic Trainers' Association?*

Hypothesis 2: There will be a statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to the implementation of all or most of the additional health and safety standards that are recommended by the National Athletic Trainers' Association. The rationale for this prediction is again based upon previous research that suggests that Little League Baseball directors have better knowledge and understanding of their health and safety standards.

Research Question 3: *What are the additional resources identified by the league directors that they believe could help in the implementation of the required and/or recommended health and safety standards?*

Hypothesis 3: There will be a statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to their perception of the need for additional resources by the organizations to help in the implementation of their required and/or recommended health and safety standards. The additional resources needed by both leagues will be identified in their statistical order. This prediction is based on the findings given in previous research which had shown that

most problems arise with personnel and equipment issues when trying to implement emergency action plans for youth baseball organizations.

Research Question 4: *What leadership skills are needed by league directors to help with the implementation of the health and safety standards?*

Hypothesis 4: There will be no statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to self-perceived leadership ability. There will be a statistically significant difference between Little League Baseball and Babe Ruth Baseball in regard to the leadership skills needed by league directors and their respective youth baseball organizations in regard to the implementation of health and safety standards. This prediction is based on the findings given in previous research that had shown that most youth baseball directors from both leagues feel that they are good leaders within their own individual organizations, but may have some difficulties with regard to leadership skills needed to handle health and safety situations.

CHAPTER 4

Results

Introduction

The purpose of this chapter is to present the statistical results and analysis of the online survey completed by the youth baseball directors. The chapter begins with the overall statistical results given by the total group of youth baseball directors. The chapter will break down individually and then compare the statistical results between Little League Baseball directors and Babe Ruth Baseball directors. A report of the descriptive and frequency statistics, and then t-tests results reported in tables will be given in this chapter and in Appendix D. With a total of 119 tables needed to help report the findings in this study, Appendix D is used to contain the majority of the tables and help shorten this chapter. All of the tables are numbered in order starting with the tables shown in this chapter (Tables 1-17) then those followed in Appendix D (Tables 18-119). Finally, the data presented in this chapter have been interpreted with implications, limitations, and recommendations from those results being discussed in the final chapter.

Overview of Results for Both Little League & Babe Ruth Baseball

A total number of 900 youth baseball directors from across the United States were contacted via email and asked to complete a health and safety survey through the Zoomerang online survey service. Overall, 348 youth baseball directors from 47 different states responded to the request and completed the online surveys. This provided a total response rate of approximately thirty-eight percent, which met the power analysis requirements for the survey. There were a total number of 348 respondents to the survey,

215 (61.8%) directors were affiliated with Little League Baseball, and 133 (38.2%) directors were affiliated with Babe Ruth Baseball.

Demographic Information for Youth Baseball Directors

Overall Little League & Babe Ruth Baseball Directors

A review of the survey results given in Appendix D, Tables 18 through 21 showed that 88.2% of the youth baseball directors were male and only 9.2% were female. The average age of the directors was 42.31 years old, with age ranges from 28 to 75 years of age. With regards to educational background, the majority (78.1%) of the directors had completed an undergraduate college degree or higher.

In the area of baseball experience, results showed that the average number of years that the youth baseball directors have led their organizations was 4.39 years. Results also demonstrated that 87.9% of the directors had been youth baseball coaches at multiple age levels. The average number of years that these directors had been youth baseball team coaches was 8.24 years.

Little League Baseball Directors

Results from the completed surveys in Appendix D Tables 22 through 25 showed that 86% of the Little League Baseball directors were male. The average age of the directors was a little over 42.39 years old, with the age ranges from 28 to 64 years of age. With regard to their educational background information, the data showed that the majority (75.9%) of the Little League Baseball directors had completed an undergraduate college degree or higher.

In the area of baseball experience, results showed that the average number of years that the Little League Baseball directors have been in charge of their organizations was 4.87 years. Results from the surveys also demonstrated that 84.6% of the directors had been Little League Baseball team coaches at multiple age levels. The average number of years that the directors had been youth baseball team coaches was 7.85 years.

Babe Ruth Baseball Directors

Results from the surveys in Appendix D Tables 26 through 29 showed that 91.7% of the Babe Ruth Baseball directors responding were male. The average age of the directors was 42.17 years old, with age ranges from 28 to 75 years of age. With regard to educational background, the data showed that 72.9% of the Babe Ruth Baseball directors had completed an undergraduate college degree or higher.

In the area of baseball experience, results showed that the average number of years that the Babe Ruth Baseball directors led their organizations was 5.04 years. Results from the survey also demonstrated that 93.2% of the directors had been Babe Ruth Baseball team coaches at multiple age levels. The average number of years that the directors had been youth baseball team coaches was 8.85 years.

Leadership Skills for Youth Baseball Directors

Overall Little League & Babe Ruth Baseball Directors

With regard to the self-reported leadership issues and skills, Table 1 indicated that 96.8% of the directors responding thought that they were frequently good leaders for their youth baseball organizations. Results from Appendix D Tables 30 through 33 indicated

that 85.00% of the directors believed that they had good communication skills. The results also show that 94.5% of the directors thought that they could handle health and safety situations within their own organization, and the same percentage thought that they also had the personal skills needed to work with health and safety standards. Finally, 93.4% of the youth baseball directors responding thought that they would be able to handle an emergency situation (injury or illness) if it were to occur.

Table 1.

Frequency Statistics for Youth Baseball Directors as Good Leaders

Response	Frequency	Percent	Cumulative Percent
Always	211	60.6	60.6
Frequent	126	36.2	96.8
Sometimes	2	0.6	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Little League Baseball Directors

With regard to the self-reported leadership issues and skills, Table 2 indicated that 97.2% of the Little League Baseball directors thought that they were frequently good leaders for their leagues. Appendix D Tables 34 through 37 indicated that 96.3% of the directors thought that they frequently displayed good communication skills. Almost 95%

of the Little League Baseball directors thought that they could handle health and safety situations within their own organization and 95.3% thought that they had the personal skills needed to work with health and safety standards. Finally, 94.9% of the Little League Baseball directors responding thought that they would frequently be able to handle an emergency situation (injury or illness) if it would occur within their own league and baseball playing fields.

Table 2.

Frequency Statistics for Little League Baseball Directors as Good Leaders

Response	Frequency	Percent	Cumulative Percent
Always	139	64.6	64.6
Frequent	69	32.1	96.7
Sometimes	1	0.5	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Babe Ruth Baseball Directors

With regard to the self-reported leadership issues and skills, results from Table 3 indicated that 99.2% of all the Babe Ruth Baseball directors responding thought that they were good leaders for their organizations. Results from Appendix D Tables 38 through 41 indicate that 74.4% of the directors responding thought that they displayed good

communication skills. The survey results show that 91.7% of the Babe Ruth Baseball directors responding thought that they could handle health and safety situations within their own organization, and 90.9% thought that they had the personal skills needed to work with health and safety standards. Finally, 90.9% of the Babe Ruth Baseball directors responding thought that they would be able to handle an emergency situation (injury or illness) if it would occur.

Table 3.

Frequency Statistics for Babe Ruth Baseball Directors as Good Leaders

Response	Frequency	Percent	Cumulative Percent
Always	72	54.1	54.1
Frequent	57	42.8	96.9
Sometimes	1	0.8	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Demographic Information for Youth Baseball Organizations

Overall Little League & Babe Ruth Baseball Organizations

The demographic information for Little League Baseball and Babe Ruth Baseball consists of the youth baseball director knowledge regarding the players, coaches, and playing field usage within their own organizations. Survey results shown in Appendix D

Table 42 that an average of 422.01 players registered to participate in youth baseball leagues, with numbers ranging from 72 players to 1,600 players registered to play in individual youth organizations this past season. In the area of coaching experience, there was an average of 53.10 league-authorized/assigned coaches to teams, and there was an average of 37 non-authorized league coaches assisting with team functions. In terms of coaching gender, results in Appendix D Table 42 show that an average of 46.5 of the league-authorized/assigned coaches were male, and an average of 5.41 of the league-authorized/assigned coaches were female.

A review of the results for youth baseball field usage, shown in Appendix D Table 42 indicated that there was an average of 5.89 playing fields used per organization, with a minimum of one field in use to a maximum of 15 fields used by individual organization. In terms of field maintenance issues, survey results in Appendix D Table 43 showed that 89.4% of the individual organizations were responsible for their own field maintenance. Other sources for field maintenance responsibilities included assistance from coaches, township preparation, help from parent volunteers, and contributions given from school districts. Field maintenance issues included areas of grass cutting, infield preparation, and fence repair.

Little League Baseball Organizations

Results from the survey in Appendix D Table 44 showed an average of 411.7 players registered to participate in Little League Baseball organizations, with numbers ranging from 100 players to 1,600 players registered to play on Little League Baseball teams this past season. In the area of coaching experience, there was an average of 55.14 league-authorized/assigned coaches, and there was an average of 31.89 non-authorized

league coaches assisting with team functions. In terms of coaching gender, results in Table 44 showed that 86% of the league-authorized/assigned coaches were male, and 11.2% of the league-authorized/assigned coaches were female.

A review of the results for youth baseball field usage, shown in Appendix D Table 44 indicated that there was an average of 5.98 playing fields used per organization, with a minimum of one field in use to a maximum of 15 fields used by the individual baseball organizations. In terms of field maintenance issues, the results in Appendix D Table 45 showed that 87.4% of the individual Little League organizations were responsible for their own field maintenance. Other sources for field maintenance responsibilities included coach assistance, township preparation, help from parent volunteers, and contributions from the school districts. Field maintenance issues included areas of grass cutting, infield preparation, and fence repair.

Babe Ruth Baseball Organizations

Results from the survey shown in Appendix D Table 46 that an average of 438.74 players registered to participate in Babe Ruth Baseball organizations, with numbers ranging from 72 players to 1,200 players registered to play on Babe Ruth Baseball teams this past season. In the area of coaching experience, there was an average of 49.8 league-authorized/ assigned coaches to teams, and there was an average of 43.89 non-authorized league coaches assisting with team functions. In terms of coaching gender, results in Table 46 showed that 91.7% of the league-authorized/assigned coaches were male, and 6.0% of the league-authorized/assigned coaches were female.

A review of the results for youth baseball field usage, shown in Appendix D Table 46 indicated that there was an average of 5.75 playing fields used per organization, with a

minimum of one field in use to a maximum of 15 fields used by the individual organizations. In terms of the playing field maintenance issues, the survey results shown in Appendix D Table 47 indicated that 92.5% of the individual organizations were responsible for their own field maintenance. Other sources of field maintenance responsibilities included coaches at 80.5%, townships with 70%, parent volunteers at 32%, and school districts at 3.8%. Field maintenance issues included areas of grass cutting, infield preparation, and fence repair.

Health & Safety Requirements for Youth Baseball Leagues

Overall Little League & Babe Ruth Baseball Leagues

The survey results in Table 4 showed that 96.3% of all the youth baseball directors always or frequently had some form of an emergency plan for safety in their own organizations. The results shown in Appendix D Tables 48 through 50 indicated that more than 86.5% of the coaches always or frequently received a copy of the emergency plan for safety from their directors each baseball season, which included receiving all player and family emergency contact information. Results also indicated that almost three-fourths of the emergency plans were always or frequently reviewed and updated by the youth baseball directors and their individual organizations on an annual basis.

Table 4.

Frequency Statistics for Leagues Having Emergency Plans

Response	Frequency	Percent	Cumulative Percent
Always	263	75.6	75.6
Frequent	72	20.7	93.6
Sometimes	27	2.0	98.3
Never	6	1.7	100.0
Total	348	100.0	

In terms of playing field safety issues, results indicated in Appendix D Tables 51 through 54 showed that 96.3% of the coaches always or frequently inspected the baseball fields before games and practices, citing that 83.6% of the umpires and officials inspected the fields just before games. Similarly, almost all of the directors surveyed (99.1%) demonstrated that their teams had first aid kits available at all practices and games. Directors also demonstrated that over two-thirds of the coaches were always or frequently trained in the proper use of the contents in the first aid kits.

For issues concerning youth baseball player and team safety, the results shown in Appendix D Table 55 that 98.6% of the organizations always or frequently had a plan to control the amount of pitching in practices and games. The survey results shown in Appendix D Tables 56 through 58 indicated that 98.9% of the youth baseball organizations always or frequently purchased safety equipment though authorized

companies. Directors demonstrated that 61.8% of the baseball safety equipment was always or frequently reconditioned annually by authorized companies, and that 38.2% of the organizations sometimes or never reconditioned their equipment on an annual basis. Results also indicated that 100% of all team catchers were always or frequently required to wear the proper baseball catching equipment that included helmet with face mask, chest protector, shin guards, and protective cup.

Little League Baseball

Survey results in Table 5 indicated that more than 98.1% of all the Little League Baseball directors always or frequently used some form of an emergency plan for safety in their own organizations. Appendix D Tables 59 through 61 indicated that 94% of those directors received an emergency plan which included receiving all player and family emergency contact information. Data also demonstrated that 92.1% of the emergency plans were reviewed and updated by the Little League Baseball directors and their organizations on an annual basis.

Table 5.

Frequency Statistics for Little League Having Emergency Plans

Response	Frequency	Percent	Cumulative Percent
Always	196	91.2	91.2
Frequent	15	7.0	98.1
Sometimes	3	1.3	99.5
Never	1	0.5	100.0
Total	215	100.0	

In terms of playing field safety issues, the results indicated in Appendix D Tables 62 through 65 that 94.4% of the Little League Baseball team coaches always or frequently inspected their baseball fields before games and practices, while 90.2% of the umpires and officials inspected the fields just before games. When dealing with first aid kit issues, all of the Little League Baseball directors surveyed (100%) reported that their teams always or frequently had first aid kits available at practices and games. Little League Baseball directors also reported that 86% of their team coaches were always or frequently trained in the proper use of the contents in their first aid kits.

For issues that involve Little League Baseball player and team safety, the survey results in Appendix D Table 66 showed that 98.6% of the organizations had a plan to control the amount of pitching in practices and games. The results in Appendix D Tables 67 through 69 showed that 98.6% of the Little League directors always or frequently

purchased safety equipment through authorized companies. Little League Baseball directors demonstrated through the survey that 70.7% of the baseball safety equipment was always or frequently reconditioned annually by authorized companies. Results also indicated that 100% of all the Little League Baseball team catchers were required to wear the proper baseball catching equipment that included helmet with face mask, chest protector, shin guards, and protective cup.

Babe Ruth Baseball League

The survey results shown in Table 6 indicated that 93.2% of all the Babe Ruth Baseball directors always or frequently had some form of an emergency plan for safety in their own organizations. Only 50.4% of those directors always had an emergency plan in place. Results from Appendix D Tables 70 through 72 indicate that directors responding believe that 74.4% of the team coaches received a copy of the emergency plan for safety from their directors annually, which included only 19.7% of the coaches always getting the plan. The survey results showed that 95.7% of the Babe Ruth Baseball organizations provided team coaches with player and family emergency contact information. Surveys also showed that 42.1% of the emergency plans were reviewed and updated by the Babe Ruth Baseball directors and their leagues on an annual basis.

Table 6.

Frequency Statistics for Babe Ruth League Having Emergency Plans

Response	Frequency	Percent	Cumulative Percent
Always	67	50.4	50.4
Frequent	57	42.8	93.2
Sometimes	4	3.0	96.2
Never	5	3.8	100.0
Total	133	100.0	

In terms of playing field safety issues, the results shown in Appendix D Tables 73 through 76 indicated that 99.2% of the Babe Ruth Baseball team coaches always or frequently inspected their baseball fields before practices and games, while 72.9% of the umpires and officials inspected the fields just before games. The survey results also show that 97.7% of the Babe Ruth Baseball directors surveyed reported that their teams always or frequently had first aid kits available at practices and games. Babe Ruth Baseball directors also reported that 39.8% of their team coaches were always or frequently trained in the proper use of the contents in their first aid kits.

For issues concerning Babe Ruth Baseball player and team safety, the results in Appendix D Table 77 showed that 98.5% of the Babe Ruth Baseball organizations had a plan to control the amount of pitching in practices and games. The survey results shown in Appendix D Tables 78 through 80 indicated that that 99.2% of the Babe Ruth Baseball

directors always or frequently purchased safety equipment through authorized companies. Babe Ruth Baseball directors also reported through the survey that 47.4% of the baseball safety equipment was always or frequently reconditioned annually by authorized companies. The survey results also indicated that 100% of all the Babe Ruth Baseball team catchers were required to wear the proper baseball catching equipment that included a helmet with face mask, chest protector, shin guards, and protective cup.

Health & Safety Recommendations for Youth Baseball Leagues

Overall Little League & Babe Ruth Baseball Leagues

The survey results shown in Appendix D Tables 81 and 82 demonstrate that more than 93.4% of the youth baseball directors either agreed or strongly agreed that the team coaches should be required to have both CPR training and 97.1 were required to have First Aid training. Results shown in Appendix D Tables 83 and 84 indicated that 94.5% of the directors also felt that it was important to contact their local EMS in regards to in-season activities at community baseball fields, and almost all (98.6%) of the directors agreed that their organizations should gather medical information on players and distribute it to the team coaches.

In dealing with emergency communication and phone service issues, Appendix D Tables 85 and 86 indicated that almost all (99.9%) of the youth baseball directors either agreed or strongly agreed that it was necessary to have cell phones available at all playing fields for practices and games. Ninety-seven percent of the directors thought that it was important to place land-line phones at or around the youth baseball playing field sites.

For the concerns on emergency environmental conditions in youth baseball, Appendix D Tables 87 and 88 indicated that all of the youth baseball directors surveyed (100%) thought that it would be important to have policies in place to manage play for both games and practices during lightning storms and extreme summer heat. Appendix D Table 89 shows that 96.5% of the youth baseball directors also agreed that there should be a safety plan in place to help with the care of possible head and neck injuries to the players.

The survey results showed that youth baseball directors had concern with safety equipment used at their playing fields. Appendix D Tables 90 through 93 indicated that there was both agreement and disagreement amongst the directors when they were asked about face masks on batting helmets, mouth guards and chest protectors being worn by fielders, and safety baseballs used at younger age levels. The directors were almost evenly divided on the need for facemasks on helmets and mouth guards worn by fielders. Ninety-two percent of the directors did not think that chest protectors should be worn by fielders, and 85.3% of the directors did agree that it would be a good idea to use softer (safety) baseballs in the younger age levels that would include T-Ball (4-6 ages).

With the issues that involve the implementation of the health and safety standards for their own organizations, 34.2% of all of the youth baseball directors answered in the survey and shown in Table 7 that they would need some assistance in the implementing of their health and safety standards, while 63.2% of all of the directors thought that they did not need any assistance. From those youth baseball directors who thought that their organizations needed assistance, results shown in Table 8 indicated that the majority of

the directors agreed that both personnel needs (30.7%) and equipment issues (27.3) were the main areas of concern in the implementation of their health and safety standards.

Table 7.

Frequency Statistics for Leagues Needing Assistance in Implementing Health and Safety Standards

Response	Frequency	Percent
Yes	119	34.2
No	220	63.2
Missing	9	2.6
Total	348	100.0

Table 8.

Frequency Statistics for Types of Assistance Needed to Implement Health and Safety Standards

Response	Frequency	Percent
Financial	45	12.9
Equipment	95	27.3
Personnel	107	30.7
EMS	67	19.3

Little League Baseball

The results in Appendix D Tables 94 and 95 showed that 91.6% of the Little League Baseball directors responding either agreed or strongly agreed that the team coaches should be required to have CPR training and 96.3% agreed that they should be required to have First Aid training. Survey results shown in Appendix D Tables 96 and 97 indicated that 93% of the Little League Baseball directors also felt that it was important to contact their local EMS in regards to in-season activities at their baseball fields, and 98.1% of all the directors agreed that their organizations should gather medical information on players and distribute it to all the team coaches.

In dealing with emergency communication and phone service issues, Appendix D Tables 98 and 99 indicated that 98.1% of the Little League Baseball directors either agreed or strongly agreed that it was necessary to have cell phones available at all playing fields for practices and games. The survey results show that 84.4% of the directors thought it was necessary to place permanent land-line phones at or around the Little League Baseball fields.

For the concerns on emergency environmental conditions in Little League Baseball, Appendix D Tables 100 and 101 indicated that all of the directors surveyed (100%) agreed or strongly agreed that it would be important to have policies in place to manage play for both games and practices during lightning storms and extreme summer heat. The survey results also show that 95.8% of the Little League Baseball directors agreed to have a plan in place for catastrophic injury a safety plan in place to care for possible head and neck injuries to youth baseball players (Appendix D Table 102).

The survey results showed that Little League Baseball directors had concern with the safety equipment being required. Appendix D Tables 103 through 106 indicated that there was both agreement and disagreement on issues concerning face masks on batting helmets, mouth guards and chest protectors being worn by fielders, and safety baseballs used at younger age levels. There were less than 50% of the directors (42.8%) that agreed that there should be face masks on batting helmets, while there was 55.4% that agreed that fielders should wear mouth guards and 91.5% of the directors were not in favor of having their fielders using chest protectors. The survey results also show that 89.7% of the Little League Baseball directors responding did agree that their organizations should use softer (safety) baseballs in the younger age levels.

With the issues that involve the implementation of the health and safety standards for their own organizations, Table 9 showed that 16.7% of the Little League Baseball directors thought that they would need assistance in the implementing of their health and safety standards, while 80.5% of the directors responding thought that they would not need any assistance. From those Little League Baseball directors who thought their organizations needed assistance, Table 10 shows that that equipment issues (14%) and personnel needs (11.6%) were the main areas of concern for the directors in the implementation of their health and safety standards.

Table 9.

Frequency Statistics for Little League Needing Assistance in Implementing Health and Safety Standards

Response	Frequency	Percent
Yes	36	16.7
No	173	80.5
Missing	6	2.8
Total	215	100.0

Table 10.

Frequency Statistics for Types of Assistance Needed to Implement Health and Safety Standards

Response	Frequency	Percent
Financial	17	7.9
Equipment	30	14.0
Personnel	25	11.6
EMS	18	8.4

Babe Ruth Baseball League

The survey results shown in Appendix D Tables 107 and 108 indicated that 96.2% of the Babe Ruth Baseball directors responding either agreed or strongly agreed that the team coaches should be required to have both CPR and 98.5% agreed that they should be required to have First Aid training. Results shown in Appendix D Tables 109 and 110 indicated that 97% of the Babe Ruth Baseball directors responding also felt that it was important to contact their local EMS in regard to season events, and 99.2% of all the directors responding agreed that their organizations should gather medical information on players and distribute it to the team coaches.

In dealing with emergency communication and phone service issues, survey results shown in Appendix D Tables 111 and 112 indicated that all of the Babe Ruth Baseball directors (100%) either agreed or strongly agreed that it was necessary to have cell phones available at all playing fields for practices and games. The survey also shows that 96.9% of the directors thought it was necessary to place permanent land-line phones at or around the Babe Ruth Baseball fields.

For the concerns with emergency environmental conditions in Babe Ruth Baseball, results from Appendix D Tables 113 and 114 showed that all of the directors surveyed (100%) agreed or strongly agreed that it would be important to have policies in place to manage both games and practices during lightning storms and extreme summer heat. All of the Babe Ruth Baseball directors reported in Appendix D Table 115 agreed that their organizations should have a plan in place for catastrophic injury identification and care for possible head and neck injuries to youth baseball players.

The survey results showed that Babe Ruth Baseball directors had concern with the safety equipment being used at their playing fields. Results from the survey shown in Appendix D Tables 116 through 119 indicated that there was no agreement on issues concerning face masks on batting helmets, mouth guards and chest protectors being worn by fielders, and safety baseballs used at the younger age levels. The results from the survey show that 45% percent of the directors responding agreed there should be face masks placed on batting helmets, 52.6% of the directors agreed that all fielders should be wearing mouth guards, and 93.3% of the directors responding were not in favor of having their fielders using chest protectors. The survey shows that 78.2% of the directors did agree that their leagues should use softer (safety) baseballs for younger players.

With the issues that involve the implementation of the health and safety standards for their own organizations, survey results shown in Table 11 indicated 62.4% of the Babe Ruth Baseball directors responding thought that they would need assistance in the implementing of their health and safety standards, while 36.4% of the directors thought that they would not need any assistance. From those Babe Ruth Baseball directors who thought their organizations needed assistance, results in Table 12 showed that the majority reported that personnel needs (61.7%) and equipment issues (48.9%) were the main areas of concern in the implementation of their health and safety standards.

Table 11.

Frequency Statistics for Babe Ruth League Needing Assistance in Implementing Health and Safety Standards

Response	Frequency	Percent
Yes	83	62.4
No	47	36.3
Missing	3	2.3
Total	133	100.0

Table 12.

Frequency Statistics for Types of Assistance Needed to Implement Health and Safety Standards

Response	Frequency	Percent
Financial	28	21.1
Equipment	65	48.9
Personnel	82	61.7
EMS	49	36.8

Comparison of Little League and Babe Ruth Baseball Demographic Information

Independent sample t-tests were performed comparing the directors of Little League Baseball and Babe Ruth Baseball responses in categories that included: Director and League Demographics, Health and Safety Requirements and Recommendations, and Director Leadership Skills. The significance level for the t-tests was set at .001.

Included in Table 13 are the results of the t-tests for independent samples that were utilized to determine whether there were significant differences between the demographic characteristics of League Directors of Little League Baseball and Babe Ruth Baseball. Results showed there were no significant differences in the overall demographic make-up of the directors responding.

Included in Table 14 are the results of the t-tests for independent samples that were utilized to determine whether there were significant differences between Little League Baseball and Babe Ruth Baseball with regard to league demographic information. No significant differences were determined for all the variables examined except for the number of non-authorized coaches volunteering their time to the organizations ($p=.000$). Babe Ruth Baseball had significantly more non-authorized coaches participating than did Little League Baseball.

Table 13.

Comparison of Little League & Babe Ruth Baseball Director Demographic Information

Variable	League	Mean	t	DF	SIG
Years as Director	LL	4.870	-0.495	337	.621
	BR	5.040			
Years as Coach	LL	7.850	-1.967	337	.050
	BR	8.850			
Director Age	LL	42.390	0.293	333	.770
	BR	42.170			

*denotes ($p \leq .001$)

Note: LL = Little League
BR = Babe Ruth

Table 14.

Comparison of Little League & Babe Ruth Baseball League Demographic Information

Variable	League	Mean	t	DF	SIG
No. of Players	LL	411.670	-1.198	346	.232
	BR	438.740			
No. of Coaches	LL	55.140	1.149	346	.251
	BR	49.800			
Male Coaches	LL	48.530	1.446	345	.149
	BR	43.170			
Female Coaches	LL	5.240	-0.728	346	.467
	BR	5.690			
Non-Authorized Coaches	LL	31.890	-4.060	346	.000*
	BR	43.890			
Playing Fields	LL	5.980	0.942	346	.347
	BR	5.750			

* denotes ($p \leq .001$)

Comparison of Little League and Babe Ruth Baseball Leadership Skills

Included in Table 15 are the results of the t-tests for independent samples that were utilized to determine whether there were significant differences between Little League Baseball and Babe Ruth Baseball with regard to information for league director

leadership skills. There were significant differences ($p=.000$) indicated for Little League Baseball directors that self-reported being better at communication skills, personal skills, and handling of health & safety and emergency situations than did the Babe Ruth Baseball directors. There were no significant differences between the baseball director self-reported ratings of themselves as good leaders between Little League Baseball and Babe Ruth Baseball.

Table 15.

Comparison of Little League and Babe Ruth Baseball Leadership Skill Information

Variable	League	Mean	t	DF	SIG
Good Leaders	LL	1.340	-2.058	337	.040
	BR	1.450			
Good Communication Skills	LL	1.730	-5.696	337	.000*
	BR	2.100			
Handle Health & Safety Situations	LL	1.560	-6.821	337	.000*
	BR	1.930			
Personal Skills For Health & Safety	LL	1.560	-6.830	337	.000*
	BR	1.940			
Handle Emergency Situations	LL	1.560	-6.671	337	.000*
	BR	1.940			

* denotes ($p \leq .001$)

Comparison of Little League and Babe Ruth Health & Safety Requirements

Included in Table 16 are the results of the t-tests for independent samples that were utilized to determine whether there were significant differences between Little League Baseball and Babe Ruth Baseball with regard to health and safety requirements. There were significant differences identified in all of the variables tested in this section. Little League Baseball organizations were more likely to have emergency plans in place than were Babe Ruth Baseball organizations ($p=.000$). Table 16 also shows that Little League Baseball coaches were more likely to receive emergency plans than Babe Ruth Baseball coaches ($p=.000$), and the Little League Baseball emergency plans were updated more often than the emergency plans for Babe Ruth Baseball ($p=.000$). There also were significant differences ($p=.000$) with regard to field inspections by coaches and umpires, first aid kit usage and training, pitching control, and safety equipment issues. Little League Baseball organizations were more likely to collect family contact information than Babe Ruth Baseball organizations ($p=.000$). The table also shows that Little League Baseball umpires and coaches were more likely to inspect fields before events than were Babe Ruth Baseball umpires and coaches ($p=.000$) and Little League Baseball coaches were more likely to receive first aid kits, and be trained to use them over Babe Ruth Baseball coaches ($p=.000$). Table 16 also reveals that Little League Baseball had a better pitching plan for their organizations than did Babe Ruth Baseball ($p=.000$). Finally, Little League Baseball organizations updated (purchase & reconditioning) their safety equipment more often than Babe Ruth Baseball organizations, which also included the proper use of safety equipment for catchers ($p=.000$).

Table 16.

Comparison of Little League & Babe Ruth Baseball Health & Safety Requirements

Variable	League	Mean	t	DF	SIG
Emergency Plans	LL	1.110	-8.131	346	.000*
	BR	1.600			
Coaches Receive Plans	LL	1.390	-9.649	346	.000*
	BR	2.100			
Update Plans	LL	1.660	-12.544	346	.000*
	BR	2.560			
Family Contact Info	LL	1.210	-6.836	346	.000*
	BR	1.590			
Coaches Inspect Fields	LL	1.370	-4.327	346	.000*
	BR	1.650			
Umpires Inspect Fields	LL	1.800	-3.793	346	.000*
	BR	2.080			
Coaches Have First Aid Kits	LL	1.150	-6.439	346	.000*
	BR	1.470			

* denotes ($p \leq .001$)

Note: LL = Little League
BR = Babe Ruth

Table 16 (cont).

Comparison of Little League & Babe Ruth Baseball Health & Safety Requirements

Variable	League	Mean	t	DF	SIG
Coaches Trained to Use Kits	LL	1.930	-9.161	346	.000*
	BR	2.590			
Control Pitching	LL	1.040	-9.640	346	.000*
	BR	1.440			
Purchase Equipment	LL	1.230	-4.411	346	.000*
	BR	1.470			
Recondition Equipment	LL	2.320	-1.469	346	.000*
	BR	2.460			
Equipment for Catchers	LL	1.000	-2.305	346	.000*
	BR	1.040			

* denotes ($p \leq .001$)

Note: LL = Little League
BR = Babe Ruth

Comparison of Little League and Babe Ruth Health & Safety Recommendations

The survey results showed that Little League Baseball directors were more prepared to deal with many of the health and safety recommendations given by the National Athletic Trainers Association (NATA). Included in Table 17 are the results of

the t-tests for independent samples that were utilized to determine whether there were significant differences between Little League Baseball and Babe Ruth Baseball with regard to information on their health and safety recommendations. There were no significant differences for EMS contact and land-line phone communications. There were also no significant differences for equipment issues on face masks for batters, mouth guards and chest protectors for fielders. There were however, significant differences ($p=.000$) that included CPR and First Aid training, cell phone communication systems, environmental condition plans, use of softer baseballs and collection of medical information. The survey results in Table 17 specifically shows that Little League Baseball coaches were more likely to be trained in CPR and First Aid than were Babe Ruth Baseball coaches ($p=.000$). The results show that Little League Baseball organizations were more likely to have better means of communication with EMS through cell phones over Babe Ruth Baseball organizations ($p=.000$). Table 17 also reveals that Little League Baseball organizations were more likely to have environmental condition and specific injury plans in place over Babe Ruth Baseball organizations ($p=.000$). Additionally, Little League Baseball organizations would likely collect more medical information on their players than would Babe Ruth Baseball organizations ($p=.000$). With regard to safety equipment, the only significant difference was with safety baseballs, where Little League directors were more inclined to use softer baseballs for younger players than were Babe Ruth Baseball directors ($p=.000$).

Table 17.

Comparison of Little League & Babe Ruth Baseball Health & Safety Recommendations

Variable	League	Mean	t	DF	SIG
Coaches Trained in First Aid	LL	1.240	-4.713	346	.000*
	BR	1.510			
Coaches Trained in CPR	LL	1.470	-4.493	346	.000*
	BR	1.770			
Contact with EMS	LL	1.720	-1.787	346	.075
	BR	1.830			
Medical Information	LL	1.210	-6.497	346	.000*
	BR	1.560			
Land – Line Phones	LL	1.840	1.259	346	.209
	BR	1.740			
Cell Phones	LL	1.320	-5.510	346	.000*
	BR	1.620			
Lightning Plan	LL	1.060	-5.200	346	.000*
	BR	1.250			

* denotes ($p \leq .001$)

Note: LL = Little League
BR = Babe Ruth

Table 17 (cont).

Comparison of Little League & Babe Ruth Baseball Health & Safety Recommendations

Variable	League	Mean	t	DF	SIG
Heat Illness Plan	LL	1.230	-8.081	346	.000*
	BR	1.630			
Head & Neck Injury Plan	LL	1.530	-4.176	337	.000*
	BR	1.760			
Face Masks on Batting Helmets	LL	2.540	-0.038	337	.970
	BR	2.540			
Mouth Guards for Fielders	LL	2.440	-0.561	337	.575
	BR	2.480			
Chest Protectors for Fielders	LL	3.020	1.305	337	.193
	BR	2.960			
Safety Baseballs	LL	1.940	-4.342	337	.000*
	BR	2.170			
Assistance with Implementing Health & Safety Standards	LL	1.830	9.908	337	.000*
	BR	1.360			

* denotes ($p \leq .001$)

Note: LL = Little League
BR = Babe Ruth

Research Questions & Results

The purpose of this study was to investigate and report the health and safety issues for the Little League Baseball and Babe Ruth Baseball Leagues by analyzing the results of online surveys that were completed by youth baseball directors. The purpose led to the development of four research questions and four hypotheses, which will be listed in this section individually and followed by their results.

Research Question 1: *Do differences exist between the directors of Little League Baseball and Babe Ruth Baseball with regard to the implementation of the required health and safety standards governed by their leagues?*

Hypothesis 1: There will be a statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to the implementation of all the required health and safety standards governed by their leagues. This prediction is based on previous research which had shown that Little League Baseball directors have had better knowledge and understanding with regard to their league's required health and safety standards.

The statistical analysis from the completed surveys demonstrated significant differences between Little League Baseball and Babe Ruth Baseball with regard to the implementation of health and safety standards that were required within their own leagues. Significant differences favored Little League Baseball in areas of implementation of emergency plans, having copies of the plan available to league coaches, and updating the plans on an annual basis ($p=.000$). There were also significant differences reported in areas of emergency contact information, field inspection, first aid

kit usage/training, pitching control, and safety equipment purchasing and reconditioning that all favored Little League Baseball ($p=.000$). The t-test results comparing Little League Baseball and Babe Ruth Baseball in terms of required health and safety plan implementation were also reported. There were significant differences found between both Little League Baseball and Babe Ruth Baseball in all areas of the implementation of the required health and safety standards that were governed by their organizations. Specifically, Little League Baseball directors reported through survey results, significantly better means for implementation of all required health and safety standards. Therefore, hypothesis one has been proven to be correct given the statistical results from the director's survey.

Research Question 2: *Do differences exist between the directors of Little League Baseball and Babe Ruth Baseball with regard to the implementation of the additional health and safety standards that are recommended by the National Athletic Trainers' Association?*

Hypothesis 2: There will be a statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to the implementation of all or most of the additional health and safety standards that are recommended by the National Athletic Trainers' Association. The rationale for this prediction is again based upon previous research that suggests that Little League Baseball directors have better knowledge and understanding of their health and safety standards.

The statistical analysis showed that there was a significant difference between many, but not all of the league directors for Little League Baseball and Babe Ruth Baseball in regards to the implementation of health and safety standards that are recommended by the National Athletic Trainers Association. When comparing Little League Baseball and Babe Ruth with regard to CPR and First Aid training, Little League Baseball had a significant agreement response rate for coaches being trained and certified in each of these areas. There was also a significant difference in terms of Little League Baseball directors in agreement with gathering medical information on players and having policies for environmental conditions such as lightning and extreme heat emergencies ($p=.000$). Significant differences with regard to the league directors needing assistance with the implementation of an emergency plan for their organizations were also found ($p=.000$). There was one main area of the recommendations where the directors from both leagues agreed with one another. That area was with safety equipment recommendations. The majority of all Little League Baseball and Babe Ruth Baseball directors disagreed with the batting helmet face mask, mouth guard, and fielding chest protector recommendations for players. Once again the t-test results comparing responses from Little League Baseball and Babe Ruth Baseball directors showed significant differences in many areas of the health and safety recommendations, but there were also a few areas that were not significant in difference. There were significant differences in the areas of CPR and First Aid training, environmental plans, gathering medical information, coaches having cell phones, and assistance needed in implementing an emergency plan ($p=.000$). All of these differences favored Little League Baseball with regard to agreement for the recommended health and safety standards. There were

no significant differences between the two leagues with regard to having land-line phones at or near fields ($p=.209$), contacting EMS ($p=.075$), and recommending certain pieces of safety equipment for player usage as a batter and/or fielder. As a result, hypothesis two was proven correct given the statistical results from the director's survey.

Research Question 3: *What are the additional resources identified by the league directors that they believe could help in the implementation of the required and/or recommended health and safety standards?*

Hypothesis 3: There will be a statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to their perception of the need for additional resources by the organizations to help in the implementation of their required and/or recommended health and safety standards. The additional resources needed by both leagues will be identified in their statistical order. This prediction is based on the findings given in previous research which had shown that most problems arise with personnel and equipment issues when trying to implement emergency action plans for youth baseball organizations

The analysis from the research study demonstrated through t-test results that the difference was significant ($p=.000$) between Little League Baseball and Babe Ruth Baseball League directors with regard to needing assistance in the implementation of required and/or recommended health and safety standards. In terms of frequency statistics, the survey results showed a 62.4% need for Babe Ruth Baseball directors compared to only a 16.7% need for Little League Baseball directors. In terms of the

types of league assistance needed, the top two additional resources that the directors from the leagues mentioned in the implementation of the health and safety standards were both personnel needs (30.7%) and equipment needs (27.3%). Emergency Medical System (EMS) assistance (19.3%) was mentioned by the league directors as the third most common need, and financial assistance (12.9%) was ranked as the fourth resource that was needed. Given the statistical results from the survey, hypothesis number three was proven correct and the additional resources were identified by both leagues in statistical order.

Research Question 4: *What leadership skills are needed by league directors to help with the implementation of the health and safety standards?*

Hypothesis 4: There will be no statistically significant difference between the directors from Little League Baseball and Babe Ruth Baseball with regard to self-perceived leadership ability. There will be a statistically significant difference between Little League Baseball and Babe Ruth Baseball in regard to the leadership skills needed by league directors and their respective youth baseball organizations in regard to the implementation of health and safety standards. This prediction is based on the findings given in previous research that had shown that most youth baseball directors from both leagues feel that they are good leaders within their own individual organizations, but may have some difficulties with regard to leadership skills needed to handle health and safety situations.

The analysis from the survey results in the study had shown through t-test results that differences were not significant with regard to Little League Baseball and Babe Ruth Baseball directors believing that they were good leaders for their organizations ($p=.040$). There was a significant difference between the directors of both leagues with regard to communication skills, personal skills, the handling of health & safety situations, and emergency situations ($p=.000$). As a result of these differences, hypothesis number four was proven correct given that the statistics demonstrated that the Little League Baseball directors had better self-reported leadership skills over Babe Ruth Baseball directors with regard to the implementation and handling of the health and safety standards for their own organizations.

CHAPTER 5

Discussion

Introduction

Limited research has been performed to investigate the health and safety standards in youth baseball at either the regional or national levels. This is the first national research study to be done that examines the health and safety standards for two of the largest youth baseball leagues in the United States today. The importance of this study and its results may help with future research that can be done both nationally and regionally for youth baseball and other organized youth sports activities.

In the first section of this chapter, the results from Little League Baseball and then Babe Ruth Baseball will be discussed. The second section of this chapter will summarize the overall findings from the youth baseball study. The final section will discuss the implications and limitations of the study, recommendations for both governing youth baseball leagues, and possible ideas for further research.

Summary of the Demographic Information

Little League Baseball Demographic Information

Results from the survey given to Little League Baseball directors demonstrated that they had been in their administrative role for a number of years after they already had some coaching experience. Many of the individual organizations within Little League Baseball mandate that their directors have at least three years coaching experience before they are allowed to be considered for an administrative position. The governing league

has never mandated such a ruling, but has allowed its individual organizations to make such a policy (Van Auken, 2001).

Little League Baseball directors reported that they averaged around 411 players per organization, at different playing age levels, and that there was an average of 55 authorized coaches involved with the teams in the organizations. For a number of years, Little League Baseball has tried to work out a player to coach ratio per team, so that each player has a good chance to receive proper instruction. The ratio that Little League strives for in its organizations is around 11:1 player to authorized coach for all playing levels (Sundeen, 2001). The demographic information also reveals that the majority of the playing fields in organizations governed by Little League Baseball were being groomed and maintained by the same individual organizations. Little League Baseball has been instrumental for all youth baseball and has mandated that their individual organizations should have a proper playing field for each age level or every other age level. This will give the opportunity for more playing and practice time for all teams and age groups during the pre-season, regular season, and the post-season. Little League Baseball also recommends that the individual baseball organizations take responsibility in the maintenance of all their playing fields, which was proven correct from the majority of responses given by the youth baseball directors in the survey.

Babe Ruth Baseball Demographic Information

Results from the surveys given to the Babe Ruth Baseball directors demonstrated that they had also been coaches for their organizations in the past. Unlike Little League Baseball, there is nothing written in the Babe Ruth Baseball national policies and

procedures that directors must have baseball coaching experience, before being eligible for an administrative role for their youth baseball organization. There may be individual organizations within Babe Ruth Baseball that mandate coaching experience, but that was not found in this research.

Babe Ruth Baseball directors reported that they averaged around 439 players per organization, at different playing age levels, and there was an average of 50 authorized coaches that were involved with the teams in the organizations. Babe Ruth Baseball also mandates that there should be a certain ratio of players to coach per team, just like Little League Baseball. The ratio that Babe Ruth Baseball looks for in its organizations is around 12:1 ratio of players to authorized coach for each team (Teffefson, 2007). Babe Ruth Baseball has no set policy for its organizations with regard to the total number of fields needed for its age levels. Babe Ruth Baseball does require that all of its individual organizations set up and control a proper maintenance program for all of their playing fields. The field maintenance program must adhere to the policies set forth in a procedure manual mailed to all directors before each baseball season (Bullpen, 2006). The policy states that each organization must supply proper equipment to be used to groom and maintain playing fields and that a team coach or official will inspect all playing fields before all practices and games.

Overall Demographic Information

Through the returned online surveys, the demographic information for the youth baseball directors and their individual organizations across the country was examined. Both Little League Baseball and Babe Ruth Baseball reported that the majority of the

league directors were male. One explanation for the high percentage of male league directors is the fact that youth baseball has traditionally been a male dominated sport, with just a small percentage of females accepted and allowed to participate (Seymore, 1990). A non-scientific study was completed by the Baseball and Softball Council in 2007 that showed a possible trend where women are becoming more involved with youth baseball coaching duties (Baseball and Softball Council, 2008). Data from this study can not be justified since the study was done on a random basis through a sporting goods company. The demographic information also showed that over three fourths of both Little League Baseball and Babe Ruth Baseball league directors had academic backgrounds that included college/university undergraduate degrees and graduate degrees. There has been no specific explanation found through research why the majority of the youth baseball directors have higher education backgrounds. A potential reason for this finding could possibly be linked to socio-economic backgrounds of families living in areas where individual organizations are located. Since this study was sent randomly via e-mail to many directors of organizations across the country, it could not be determined of what socio-economic grouping or class these directors were considered. The directors from both Little League Baseball and Babe Ruth Baseball reported that the majority had coaching experience at the youth baseball level. The finding that the majority of directors had some previous coaching experience may have a connection with the requirements of the governing leagues and/or individual youth baseball organizations making it necessary for a person to be a coach before they would be eligible to be voted into certain administrative board positions (Van Auken, 2001).

Results comparing the two leagues demonstrated that there was only one significant difference between Little League Baseball and Babe Ruth Baseball, in the demographic area for youth leagues, and that was with additional non-authorized coaches. It has been found from previous research that league-authorized/assigned coaches were usually designated as head coaches for the youth baseball teams, which were selected by the league directors (Libman, 1998). The data in this study shows that there were more authorized/assigned coaches selected for both governing leagues than non-authorized coaches. Non-authorized coaches were usually considered parents who volunteered as assistant coaches and/or team managers. Research has shown that these parents were usually picked by the head coaches to help out with the teams, without need of criminal background information (Libman, 1998). The results from the current study demonstrated a significant difference between the two leagues where Babe Ruth Baseball had more non-authorized coaches volunteering their time with the teams than did Little League Baseball. One possible explanation for the significant difference is that Little League Baseball requires its organizations to run criminal background checks on all parent volunteers (coaches, managers, and administrators), while Babe Ruth Baseball only recommends that its organizations run the similar background checks (ASAP, 2008; Bullpen, 2008). Some parents may not be willing to go through the hassle of extra time and money of completing the required background checks needed to be a volunteer coach, if they are not required to do them. The total number of male coaches versus female coaches was not significant between Little League Baseball and Babe Ruth Baseball in the overall results. The results showed that there was almost a 9:1 ratio between male and female coaches for both leagues. The most likely explanation for the

large difference between the number of male and female coaches for both Little League Baseball and Babe Ruth Baseball is the theory given that women had not been generally accepted for participating roles in sport such as coaching in the past (Seymore, 1990).

Summary of the Health & Safety Standards

Little League Baseball Health & Safety Standards

In terms of the health and safety standards that are required by Little League Baseball, the results clearly demonstrated that the majority of directors implement the required standards. The required health and safety standards for Little League Baseball include the development and use of emergency plans. Many of the directors within Little League Baseball responded that they have emergency plans, they give copies of the emergency plans to their coaches, and the plans are updated on an annual basis. Little League Baseball has a model emergency plan for its individual organizations to follow on its national website (www.littleleague.org). One reason why there is such a high percentage of emergency plans being utilized by organizations is that the plan is so easily identified to the directors on the Little League Baseball website, and can be updated annually using the same feature. In addition, Little League Baseball sends out quarterly newsletters (ASAP) to the directors of their organizations to explain different policies and procedures. A section in each newsletter contains material associated with health and safety issues that includes the development and implementation of emergency plans. Examples of emergency plan issues used in past newsletters include playing field safety, equipment safety, first aid kit contents, and first aid kit training for coaches. Little League Baseball also has a special section in each quarterly newsletter that allows

directors and coaches to ask questions of health and safety professionals, such as certified athletic trainers (ATC's) about issues that involve their emergency plans.

One area of health and safety where Little League Baseball has done research with physicians and sports medicine groups, such as the American Institute of Sports Medicine (ASMI), is in the safety for its young pitchers. A pitch count system was developed by Little League Baseball in the late 1990's to help decrease the amount of arm damage that can be done on overthrowing in games (Andrews & Fleisig, 1998). This pitch count system has been modified over the last five years and is now mandatory for all Little League Baseball organizations to use in regular and post-season activities (Olson, Fleisig, Dun, Loftice, & Andrews, 2006).

With regard to the recommended health and safety standards, the majority of the directors for organizations in Little League Baseball agreed with many of those recommended standards issued by the National Athletic Trainers' Association (NATA). Little League Baseball has recommended for the proper training of directors and coaches within their organizations in the proper means of determining danger from lightning storms. This includes the use of the position statement on lightning safety that was developed by the NATA and used by many professional and amateur organizations across the country (Walsh, Bennett, Cooper, Holle, Kithil &, Lopez, 2000). This position statement includes the use of the "Flash to Bang" method that was developed by the National Severe Storms Laboratory (NSSL) in the early 1980's. In the area of baseball safety equipment recommendations, the directors from Little League Baseball did not agree with the recommended pieces of safety equipment that included face masks on batting helmets, mouth guards for fielders, and chest protectors for infielders. The

majority of directors for Little League Baseball did agree that the use of softer (safety) baseballs were a good idea at the younger (T-Ball & Instructional) playing levels. It is likely that the disagreement among the directors on many of the safety equipment recommendations could be from the overall cost factors and the lack of knowledge of the research that has been done on the equipment and inconclusive results from the research (Janda, 2003; Link, 2002; Marshall, Mueller, Kirby, & Yang, 2003). Much of this research is still on-going, especially the research on chest protectors that is being done by Dr. Mark Link associated with *Commotio Cordis*. The overall cost factors include bulk order purchase and reconditioning of equipment. It has been proven quite costly for individual organizations to order and maintain enough safety equipment for all players (Street & Runkle, 2000). Another explanation for the disagreement of certain pieces of safety equipment is that there are possible feelings from the older baseball directors that the equipment would affect the parameters of the overall play of the game (Marshall, Mueller, Kirby, & Yang, 2003).

Finally, in the area that involves the implementation of the required health and safety standards, results demonstrated that the majority of the youth baseball directors from Little League Baseball did not think that they needed outside assistance with the implementation of their required health and safety standards. The reasoning may be attributed to the different means that Little League Baseball communicates to its directors, through their national website and quarterly newsletters, the importance of the health and safety requirements and how the directors can follow a number of model plans to help implement those required standards for their own youth baseball organizations.

Babe Ruth Baseball Health & Safety Standards

In examining the health and safety standards that are required by Babe Ruth Baseball, the results clearly demonstrated that the majority of directors frequently had emergency plans in place for their organizations. Many of the Babe Ruth directors responded that they sometimes gave copies of their emergency plan to coaches and that they were annually updated. There is no model for an emergency plan given by Babe Ruth Baseball on its national league website (www.baberuthleague.org) or mailed out to the directors each year. The only materials the directors receive are the outlined health and safety policies that are part of the procedure manual mailed to the youth baseball directors before each season. Babe Ruth Baseball does send out seasonal newsletters (Bullpen) to its member organizations to help explain different policies and procedures. There is usually, but not always, a section in the newsletter that explains the functions of the different health and safety policies. These policies include playing field inspection, catchers and batters equipment safety, first aid kit contents, and family emergency contact information. Babe Ruth Baseball does not currently have a pitch count system, but it does have a limited inning pitched system, that holds its pitchers to number of innings pitched per game and week (Tellefson, 2007).

With regard to the recommended health and safety standards, the majority of the directors for organizations in Babe Ruth Baseball suggested that they would agree with many of the recommended standards issued by the National Athletic Trainers' Association (NATA). These areas of recommended health and safety standards included emergency communication and phone systems, CPR and First Aid training for coaches, and environmental conditions that included lightning storm safety. As of yet, Babe Ruth

Baseball has not worked with the NATA, or other research groups, with the development of their health and safety standards, but they have expressed interest in helping out with research that involves certain safety issues (Bullpen, 2008).

Similar to Little League Baseball, the majority of the directors from Babe Ruth Baseball did not agree with many of the recommended pieces of safety equipment for its organizations. These pieces of equipment included face masks for batting helmets, mouth guards for fielders, and chest protectors for infielders. The reasons for the disagreement among the Babe Ruth Baseball directors are the same as those reasons given by the Little League Baseball directors that include the feeling that the equipment could affect the overall play of the game, additional cost factors to the organization, and the inconclusive research results. Nowjack-Raymer & Gift (1996) concluded that 41.0% of youth baseball injuries occur to the head, face, and chest areas. Special safety equipment such as facemasks, chest protectors, and mouth guards have been developed and recommended for youth baseball players, but not all organizations or teams are required to use this special safety equipment. Previous research has found that a mere 7.0% of all youth baseball players wore mouth guards, facemasks, and chest protectors while they were batting or in fielding positions (Nowjack-Raymer & Gift, 1996). Many of the directors do not believe that the special safety equipment is essential because of the inconclusive results of past and current research being done in the area of baseball safety equipment (Janda, 2003; Link, 2002). The majority of all directors also believe that the safety equipment may affect the overall play of the game, by limiting the ability of the player to run, hit, or field (Marshall, Mueller, Kirby, & Yang, 2003). It has been implied by certain athletic organizations such as the National Sporting Goods Association

(NSGA) that by having youth baseball players wear safety equipment like mouth guards, facemasks on batting helmets and chest protectors it may provide an opportunity for players, coaches, and directors to become more aware of health and safety practices. It has also been stated by the NSGA that for other than the obvious protective benefits, certain pieces of safety equipment can often give a sense of confidence and security for most young athletes (National Sporting Goods Association, 2001).

Finally, in the area that involves the implementation of the required health and safety standards, survey results demonstrated that the majority of the youth baseball directors from Babe Ruth Baseball did think that they needed some outside assistance with the implementation of their required health and safety standards. The youth baseball directors concerns regarding the implementation of the required health and safety standards may be the lack of instruction and communication methods utilized by the governing league through its national webpage and seasonal newsletters. Since there is no model emergency plan set up by Babe Ruth Baseball for its organizations to follow, there could be some confusion by the directors on what the required health and safety standards are and how they should be implemented. Through the survey results, the Babe Ruth Baseball directors responded that they would need assistance with additional personnel and equipment to properly implement their required health and safety standards.

Overall Required Health & Safety Standards

Given the results from the two organizations, there was a significant difference between Little League Baseball and Babe Ruth Baseball with means of implementing the

required health and safety standards governed by their own organizations. Previous research findings have shown consistency with the results given in this study that Little League Baseball has recognized the importance of health and safety standards and has tried to convey that message to its organizations around the country (Pasternak, Veenema, & Callahan, 1996; Radelet, Lephart, Rubenstein, & Myers, 2003).

There were significant differences found between both Little League Baseball and Babe Ruth Baseball in all areas of the implementation of the required health and safety standards that were governed by their organizations. Little League Baseball directors reported that they were able to implement all required health and safety standards, where Babe Ruth Baseball directors reported that they had difficulties in some areas of implementation. In particular, ongoing research is currently being done with Little League Baseball that involves different types of pitching control and pitch-count restrictions (ASAP, 2008). The research is incomplete at present and hopes to expand to see results within the next two to three years. Babe Ruth Baseball does not follow a selective pitch-count system for their organizations, but does use a system that involves the number of innings a player can pitch per game and/or tournament (Bullpen, 2008). It is disappointing to see that Babe Ruth Baseball has not conducted nor currently is working with any type of research that involves pitching control issues.

Previous research has demonstrated that Little League Baseball directors may have had better resources to work with regard to health and safety standard and emergency plan implementation. The previous research supports the results from this study that Little League Baseball communicates and instructs the directors to review and comply to the leagues required health and safety standards on an annual basis (Anderson, Courson,

Kleiner, & McLoda, 2002; Pasternak, Veenema, & Callahan, 1996). Little League Baseball has both a hard copy mailing system and specific web based instruction manual on required health and safety standards. Each youth baseball director must review the required health and safety standards and share them with the appointed coaches each season. The directors and coaches must sign a waiver after they review the material and send back to the Little League Baseball office in Williamsport, PA (ASAP, 2008). Babe Ruth Baseball sends out an information packet to each organizational director before each season for the review of their required health and safety standards. Babe Ruth Baseball also has a website that has general information about their required health and safety standards (Bullpen, 2008). Babe Ruth Baseball does not mandate a review of the health and safety standards by their directors and/or coaches. The implications from these results are obvious. Babe Ruth Baseball should re-examine its means of distributing health and safety standards out to its individual organizations, and should make it mandatory for the directors and coaches to review the material and take responsibility for all required standards.

Overall Recommended Health & Safety Standards

After analyzing the data given from the study, it was found that there was a significant difference between Little League Baseball and Babe Ruth Baseball with means of implementing all or most of the recommended health and safety standards. The directors from Little League Baseball are in agreement with many more of the additional recommended health and safety standards given by the NATA than the directors from Babe Ruth Baseball. Research has shown, and is consistent with this study's findings,

that the governing bodies of youth sports such as Little League Baseball and Babe Ruth Baseball have only made recommendations for coaches training of CPR and First Aid (Courson, 2003; Feld, 2000). There are no requirements for training and/or certification of CPR and First Aid in either Little League or Babe Ruth Baseball. The results from the survey show that more Little League Baseball directors believe that CPR and First Aid training should be required for their organizations. The reason for this goes back to the explanation given in research question number one that supports Little League Baseball directors having better knowledge and understanding of their health and safety standard and emergency plans (Anderson, Courson, Kleiner, & McLoda, 2002; Pasternak, Veenema, & Callahan, 1996). Again, the implications from the results of the research are obvious for Babe Ruth Baseball. There should be a better means for the directors of Babe Ruth Baseball to receive information regarding CPR and First Aid training for their individual organizations.

In the area of means of emergency communication, there was a significant difference between Little League Baseball and Babe Ruth Baseball directors over cell phone usage and no significant difference with land-line phone usage. Little League Baseball directors strongly agreed that it was important for their coaches to have cell phones available for practices while Babe Ruth Baseball directors were not as strong with agreement. Cell phone usage has been an issue among youth sports directors and coaches because of cost factors, potential loss of signal, and air time reliability. It has also been mentioned that organizations within Little League Baseball may have individual contracts with cell phone companies, where there has been no mention that Babe Ruth Baseball has any connections with cell phone companies. Directors from both Little League and Babe

Ruth Baseball agreed that it would be important to have land-line phones available at their playing fields. This form of emergency communication can be a cost factor for most youth baseball organizations but also proven to be more reliable than cell phones.

There was a significant difference between directors from Little League Baseball and Babe Ruth Baseball in terms of agreement over policies for environmental conditions such as lighting and extreme heat. The significant difference comes from the type of specific information that both Little League Baseball and Babe Ruth Baseball provides to its directors. Little League Baseball consistently provide in depth information regarding environmental conditions (heat and lightning) and gathering health history information on its website (ASAP, 2008). Babe Ruth Baseball only provides general information about the dangers of lightning storms on its website (Bullpen, 2008). Again, the implication of this research is obvious in the fact that Babe Ruth Baseball should have a more extensive plan in the delivery of in depth information that involves environmental issues that include heat and lightning.

There were no significant differences reported between the directors of Little League Baseball and Babe Ruth Baseball with the batting helmet face mask, mouth guard, and fielding chest protector recommendations for players. Previous research supports the current findings that directors from both Little League Baseball and Babe Ruth Baseball thought that each of these pieces of equipment was not necessary due to possible change in game parameters, show inconclusive results, and high cost factors (Link, 2002; Mueller, Marshall, & Kirby, 2001; Mueller & Marshall, 2003). Another concern regarding this issue lies with the directors trying to cut costs within their organizations and compromising their health and safety standards (Janda, 2003).

The analysis demonstrated that there was a significant difference between Little League Baseball and Babe Ruth Baseball with the implementation of their required and/or recommended health and safety standards. The most likely explanation for the significant difference that favors Little League Baseball is that the instruction and resources they received with regard to health and safety standards in the past. Previous research supports this claim and has shown that Little League Baseball has recognized health and safety planning since 1995 (Pasternak, Veenema, & Callahan, 1996). In that research study, Little League Baseball officials were given information regarding patterns of injuries in youth baseball and also given data to estimate the value of proposed health and safety standards. These standards included areas of safety that involved equipment and playing fields. There has been no previous research found that involved the issue of health and safety planning for Babe Ruth Baseball with specific instruction to their directors. Babe Ruth Baseball may have done internal investigations regarding health and safety issues, but none have been documented and/or published. It may be in the best interest for Babe Ruth Baseball to review the information that was used by Little League Baseball in past research which in may help with the development and implementation of their own health and safety standards.

With regard to the implementation of their health and safety standards, the directors from both Little League Baseball and Babe Ruth Baseball mentioned for both personnel/man-power needs and equipment/supply needs. These findings seem to be consistent with results from previous research which has shown that most problems arise with personnel and equipment issues when trying to develop and implement emergency action plans for any amateur or professional athletic league/organization (Anderson,

Courson, Kleiner, & McLoda, 2002). An obvious explanation for the fact that both personnel and equipment issues are prominent for the implementation of health and safety standards is that the people working within the organizations (directors and coaches) are not all that confident in their skills to help implement the standards and there is no extra money available to pay for the safety equipment needed to cover all the teams and playing fields. It is imperative that all youth baseball leagues take a look at their means of health and safety standard implementation and deliver better health and safety education to their organizations. There may also be an increase in registration costs within individual organizations to help pay for the extra costs associated with safety equipment.

Summary of the Leadership Skills

Little League Baseball Leadership Skills

The results given by directors from organizations governed by Little League Baseball reported that they felt they were good leaders and displayed proper communication and personal skills needed to work with their health and safety standards. The majority of the Little League Baseball directors also thought that they could handle emergency situations if they should occur within their own youth baseball organizations. A likely explanation is that Little League Baseball annually sends out through their national website and through the mail a quarterly newsletter that informs the directors on how they and their coaches can create and properly maintain their required health and safety standards and also how to handle certain emergency situations (ASAP, 2008).

Babe Ruth Baseball Leadership Skills

The results given by directors from organizations governed by Babe Ruth Baseball reported that they perceived themselves to be good leaders and displayed proper communication and personal skills needed to work with their health and safety standards. Many of the Babe Ruth Baseball directors also thought that they could handle emergency situations if they should occur within their own youth baseball organizations. Babe Ruth Baseball asks that their youth baseball directors review the outlined health and safety policies each year. These health and safety policies are part of the same procedure manual mailed to directors each pre-season (Bullpen, 2008).

Overall Leadership Skills

The results of the completed surveys demonstrated that there was not a significant difference between Little League Baseball and Babe Ruth Baseball regarding leadership ability in youth baseball. After reviewing the results it was also found that there was a significant difference being found between Little League Baseball and Babe Ruth Baseball with regard to the leadership skills needed to implement their health and safety standards. Past research findings has supported the results from this study that the majority of youth baseball directors feel comfortable knowing that they are leaders within their communities and organizations (Sundeen 2001; Tellefson, 2007; Yukl, 1994). Previous research has also shown that there are organizational difficulties amongst youth baseball directors and coaches with regard to leadership skills and the implementation of health and safety standards for their own leagues (Janda, 2003; Van Auken, 2001). There

is no evidence of support from findings of that research that involve directors from either Little League Baseball or Babe Ruth Baseball.

In this study, the youth baseball directors were asked if they had the proper communication and personal skills needed to implement health and safety standards and to handle emergency situations. Other research on leadership in youth sports showed consistency with the results from this study where communication and professional behavior were defined as the most important skills needed by directors to help make their youth baseball organizations successful and safe for their participants (Buckingham, 2005; Locke, 1991; Yukl, 1994). The majority of all directors from both Little League Baseball and Babe Ruth Baseball believed that they had the necessary skills needed to implement health and safety standards and also the ability to handle emergency situations. But only the Little League Baseball directors felt they could always handle emergency situations, while the directors from Babe Ruth Baseball felt that they had the skills to frequently handle emergency situations. This could be due to the belief that Little League Baseball requires more health and safety standards to be implemented for their organizations and stress that their directors implement and practice these standards with their coaches and team parents. It is also believed that the directors of organizations governed by Little League Baseball feel a little more comfortable than the directors from Babe Ruth Baseball with the implementation of their recommended health and safety standards and in return feel more comfortable with their abilities to handle emergency situations that may arise within their organizations. The implications from the results from these findings show that Babe Ruth Baseball needs to take a more aggressive role in

the development and training of their directors in leadership roles that involve health and safety implementation.

Limitations of the Study

Methodological limitations exist when working with research. The greatest limitation of this study may have been with the collection of data, which was done through an online survey service (Zoomerang). This type of survey procedure did not allow the youth baseball directors to ask in-depth questions to clarify any confusion or misinterpretation of the survey questions. There may have been a few directors that were unable to answer some of the questions correctly because of the possible confusion.

An additional limitation to this study may have been caused by not requiring a mandatory time limit for directors to complete the surveys on the Zoomerang online service. Since there was no time limit given to the youth baseball directors to complete the online survey, there may have been instances where the directors were interrupted while taking the survey, and went back later to their computers to finish. This could have caused the youth baseball directors to lose their focus while completing the survey, and not answering all of the questions in a consistent manner.

A final limitation to this study may have been the result of an organizational bias the youth baseball directors had towards certain questions while completing the online survey. There may have been instances where the directors answered questions to the survey in a way that would make their youth baseball organizations look better with regard to the development and implementation of the required and/or recommended health and safety standards.

Implications of the Study

The directors in youth baseball should be striving to create proper health and safety standards that can be implemented, controlled, and maintained by the coaches and administrators in their organizations (Janda, 2003). This study investigated some of the possible factors that effect the proper implementation of health and safety standards and providing a safe environment for the young players in both Little League Baseball and Babe Ruth Baseball. Based on the findings from the director's online survey, the factors that were most prominent in the development and implementation of health and safety standards for youth baseball leagues include the following:

1. Evidence indicated significantly different variations in required health and safety practices between organizations in Little League Baseball and Babe Ruth Baseball. Consistent administration of updated health and safety practices should be a concern for all youth baseball organizations.
2. Results indicated the directors for Little League Baseball and Babe Ruth Baseball had a significantly different opinion on the recommended health and safety standards suggested by the National Athletic Trainers Association. Better means of communication of all recommended standards should be a concern for all youth baseball organizations.
3. Findings did show that the majority of directors from both leagues were in agreement that some safety equipment (face masks, mouth guards, and chest protectors) should not be made mandatory for young players. More information should be available with regard to the effectiveness of use of certain pieces of safety equipment.

4. Evidence from the study showed that directors from Little League Baseball needed less help in developing health and safety standard plans than did Babe Ruth League directors. The directors from both leagues agreed that they could use both equipment and personnel (man-power) assistance when implementing health and safety standards for their own organizations. This should be made available to all youth baseball organizations through proper training of personnel and the purchase of adequate safety equipment for all teams and playing fields.
5. Both Little League Baseball and Babe Ruth Baseball League directors agreed that their leadership skills played an important role in the success of their organizations. Evidence showed that there was a difference between the two leagues with regard to the leadership attributes needed for the implementation of health and safety standards for their organizations.
6. Directors from Babe Ruth Baseball were not consistently providing their coaches with updated health and safety standards. It is important to provide directors and coaches with updated material that is necessary for the total safety in all youth baseball organizations.
7. Little League Baseball is currently involved with research that involves pitching control and pitch count restrictions. It is important that the research continues so the data can be analyzed and the results may help create a more effective policy on arm and pitching safety in competitive youth baseball.

Recommendations for Youth Baseball Organizations

The challenge lies with both Little League Baseball and Babe Ruth Baseball to create more opportunities for their directors, coaches, and parent volunteers to be properly educated in the field of health and safety as well as a program that will direct, support, maintain and evaluate consistent health and safety standards. Such educational programs should be implemented despite the number of players, coaches, and playing fields so that consistent health and safety standards are mandated throughout all organizations. It is important that youth baseball directors for Little League Baseball and Babe Ruth Baseball understand that consistent health and safety education and practice for their organizations would be beneficial for the young players and everyone else that is involved.

Another recommendation for the directors from both Little League Baseball and Babe Ruth Baseball is that they should become more consistent with the development and implementation of the required and recommended health and safety standards for their organizations. With regard to issues that involve personnel (man-power) needs, the youth baseball league directors should require all organization/team coaches have CPR and First Aid training. This practice would help the organization become stronger in terms of knowledge of health and safety standards and may help in the development, implementation and consistent upkeep of those standards. With regard to issues that involve equipment needs, youth baseball directors and their leagues should investigate methods of purchasing and/or receiving proper emergency safety equipment for their organizations. The types of equipment needed would include first aid kits, automated external defibrillator (AED) units, and permanent land-line telephone units. Youth

baseball league directors should communicate with their local hospital emergency department, local emergency medical system (EMS), and local American Red Cross chapter to determine the availability of equipment for their leagues either through possible donation or low cost/payment methods.

It is also recommended that directors from both Little League Baseball and Babe Ruth Baseball investigate professional organizations such as the National Athletic Trainers Association (NATA), and the American Sports Medicine Institute (ASMI), with regard to future implementation of recommended health and safety standards for their own leagues. These recommended standards include subject areas such as CPR and First Aid training, environmental conditions, baseball equipment safety, gathering of medical information, and emergency communication factors.

Finally, it is recommended that the directors from Little League Baseball and Babe Ruth Baseball become more confident in their leadership skills with regard to handling health and safety issues for their organizations. This would include becoming more familiar with the communication and personal skills needed to handle situations that involve health & safety and emergency situations. It is recommended that directors of youth baseball leagues be required to go to national and/or local health and safety symposiums for sporting activities so they can learn more about the leadership skills needed in case there and emergency situation takes place within their organizations.

Implications for Future Research

Future clinical/leadership research needs to examine a variety of subject materials associated with youth baseball and other youth sports including specific venue/field

identification, reliability of safety equipment, and health and safety management activities. Studies are also needed to examine the rate of injuries that may occur with age and sport development as children get older and move through the ranks of youth baseball. The following are all worthy of future investigation:

1. A serious attempt should be made to analyze other youth sports leagues such as football, soccer, and ice hockey to see if these leagues and their directors implement health and safety standards and compare those standards to the programs that have been developed by the youth baseball directors.
2. Data should be collected on the health and safety management activities of the parents of youth baseball participants to find out what types of health and safety management activities they conduct at home and whether or not they transfer that knowledge to their children when participating in activities such as youth baseball.
3. Future research should examine the attitudes and actions of youth baseball players related to issues in health and safety. As players increase with age and move up through the ranks of youth baseball, a study could be done on their awareness of health and safety standards in their sport and whether or not this relates to an increase in their safety activities.
4. Specific research should examine the use and reliability of certain pieces of safety equipment in youth baseball. These pieces of equipment would include face masks on batting helmets, mouth guards for fielders, chest protectors for infielders, and safety baseballs. Results of the research may help educate and

also change the minds of some youth baseball directors with regard to player safety and game parameters.

5. A study should be done, involving the same youth baseball directors from this project that would incorporate a short multiple-choice quiz on the knowledge of certain required health and safety standards that are consistent with both Little League Baseball and Babe Ruth Baseball. The results from the completed quizzes would then be used to compare the two governing leagues with regard to the true understanding of the health and safety standards by their directors.
6. An investigation should be conducted on whether specific demographics such as age, gender, and education of directors and/or coaches have an affect on health and safety standards and practices for organizations in Little League Baseball and Babe Ruth Baseball.

Summary

This study was the first of its kind to examine the health and safety standards in youth baseball on a national level. It was also the first study to use the directors from the two largest youth baseball leagues in the United States. It is suggested that this study contributed to the foundation of research that connects Little League Baseball and Babe Ruth Baseball with regard to the required and recommended health and safety standards that effect their individual organizations. Furthermore, this study confirmed the importance of leadership skills in youth baseball in particular the leadership skills utilized by the directors of youth baseball organizations in Little League Baseball and Babe Ruth Baseball. It is imperative that the youth baseball directors act professionally and pass on

these skills to coaches and parents in their organizations. These professional attitudes that are being measured in youth baseball directors are very important when comparing and evaluating the leadership skills and abilities that were found in earlier leadership studies (Bass, 1990; Bennis, 1989; Locke, 1991; Yukl, 1994).

As a result of this study, it is hoped that the findings will better prepare the youth baseball directors with the means for the proper development and implementation of the health and safety standards for their own organizations. It is also hoped that the results from this investigation will provide Little League Baseball and Babe Ruth Baseball with the criteria needed to ensure for the total safety of all the young players participating in their leagues. Finally, it is hoped that this study has created some interest among youth baseball directors for further research to be done in the area of leadership in youth baseball as it is related to the awareness of the health and safety standards.

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Youth Baseball

Health & Safety Study



The purpose of this study is to obtain health and safety information about Youth Baseball. The information gathered from this study will be used to help leagues to develop plans to improve the health and safety for all children, coaches, and spectators who are associated with Youth Baseball.

The completion time for this survey should be less than fifteen (15) minutes, and there are no right or wrong answers to the questions. By completing this survey, you are agreeing to participate in this study. Your responses will not be considered individually, but rather as part of a large group of responses.

Thank you for assisting us with this very important project!!

Section II. League Health & Safety Standards (cont.)

19. Our league coaches are trained annually on how to use the contents of the First Aid Kit.
Always Frequently Sometimes Never
20. Our league has a plan to control the amount of pitching in games and practices.
Always Frequently Sometimes Never
21. Our league safety equipment is purchased through an authorized equipment company
Always Frequently Sometimes Never
22. Our league safety equipment is reconditioned by an authorized equipment company
Always Frequently Sometimes Never
23. Our league requires our catchers to wear a helmet with mask, chest protector,
shin protectors, and protective cup.
Always Frequently Sometimes Never

Section III. League Health & Safety Issues

Please circle the response that best describes your understanding of health & safety issues for your league.

24. Our league coaches should be required to have First Aid Training.
Strongly Agree Agree Disagree Strongly Disagree
25. Our league coaches should be required to have CPR Training.
Strongly Agree Agree Disagree Strongly Disagree
26. Our league should contact the local EMS (emergency medical services), before the
season, to inform them of when and where league practices/games take place.
Strongly Agree Agree Disagree Strongly Disagree
27. Our league should gather medical information, such as allergies, asthma, heart problems,
eye wear, and medication, on all Youth Baseball players.
Strongly Agree Agree Disagree Strongly Disagree
28. Our league should have a permanent (not cell) working phone available at all league fields.
Strongly Agree Agree Disagree Strongly Disagree
29. Our league coaches should have functioning cell phones available at all league events.
Strongly Agree Agree Disagree Strongly Disagree
30. Our league should have a plan to determine play during thunder and lightning.
Strongly Agree Agree Disagree Strongly Disagree
31. Our league should have a plan to manage heat-related illnesses (e.g. dehydration).
Strongly Agree Agree Disagree Strongly Disagree
32. Our league should have a plan to manage possible head and neck injuries.
Strongly Agree Agree Disagree Strongly Disagree
33. Our league should have all batters wear a protective face mask on their batting helmets.
Strongly Agree Agree Disagree Strongly Disagree
34. Our league should have all fielders (infield & outfield) to wear mouth guards.
Strongly Agree Agree Disagree Strongly Disagree

Section III. League Health & Safety Issues (cont.)

35. Our league should have all fielders to wear a protective chest protector.
Strongly Agree Agree Disagree Strongly Disagree
36. Our league should use safety baseballs at the younger age groups.
Strongly Agree Agree Disagree Strongly Disagree

Section IV. League Assistance for Health & Safety Standards

Please circle the appropriate response below.

37. Our league needs assistance in the implementation of the required and/or recommended health & safety standards? YES NO

If the above answer is YES - Please check below the means of assistance that may aid in the development of an emergency plan for your league. Check all that apply.

38. ___ Financial Assistance 40. ___ Personnel Assistance (man-power)
39. ___ Equipment Needs 41. ___ Local EMS Direction/Consultation

Section V. League Director Leadership Information

Please write in, check, or circle the appropriate response below.

42. How many years (including this year) have you been a youth baseball league director?
_____ number of years as a director
43. Have you ever been a youth baseball team coach YES NO
44. How many years (including this year) have you been a youth baseball team coach?
_____ number of years as a coach
45. How old are you? _____ years at last birthday
46. What is your gender? _____Male _____Female
47. What is your highest level of education completed (check the highest level) ___ elementary
_____ high school/GED ___trade school ___college ___ post graduate
48. Do you consider yourself a good leader as a youth baseball league director?
Always Frequently Sometimes Never
49. Do you communicate well with your coaches and parents in regards to the health & safety standards for your league?
Always Frequently Sometimes Never
50. Are you able to handle situations that may involve the health & safety standards for the teams in your league?
Always Frequently Sometimes Never
51. Do you have the personal skills needed to work with your coaches and parents in regards to the health & safety standards for your league?
Always Frequently Sometimes Never
52. Would you know how to handle an emergency situation that may occur in your league?
Always Frequently Sometimes Never
-



APPENDIX B
Initial Email Letter to Youth Baseball Directors

Dear Youth Baseball Director,

My name is Keith Gorse, and I am an Instructor in Athletic Training at Duquesne University. I am also a director for a youth baseball organization in Pittsburgh, PA. I am currently working on my doctoral dissertation at Duquesne University that is entitled “Leadership in Youth Baseball: Awareness of Health & Safety Issues”.

I am asking for the assistance of the directors of youth baseball to fill out a short survey that includes questions on health & safety issues that are current in your organization. Topics to be covered in the survey will be: League Information, Health & Safety Standards, Health & Safety Issues, Assistance for Health & Safety Standards, and League Director Leadership Information.

The purpose of this survey is to obtain health and safety information in regards to youth baseball. The information gathered from this study will be used to help youth baseball organizations develop plans to improve the health and safety for all children, coaches, and spectators who are associated with youth baseball.

Please go to the bottom of this email letter and open the Zoomerang online survey link and press the Enter button on your computer to begin the survey process. Instructions on how to complete the online survey will be given at the beginning. By clicking on the Start Survey button and

completing this survey, you are agreeing to participate in this study. The completion time for this survey should be less than fifteen (15) minutes, and there are no right or wrong answers to the questions. The youth baseball directors’ participation in this study is strictly voluntary. All participants will be anonymous and the information provided will be kept strictly confidential. I ask that you answer all of the questions in the online survey; however, you may withdraw from participating in this study at any time. There will be no special compensation given for participating in this study, but a summary of the results of this research will be supplied to you, at no cost, upon request.

If you have any questions or concerns regarding this online survey or health and safety issues in youth baseball, please contact:

Investigator:	Keith Gorse, ATC	412-396-5959	or	gorse@duq.edu
Faculty Advisor:	Joseph Kush, PhD	412-396-1151	or	kush@duq.edu
IRB Chair:	Paul Richer, PhD	412-396-6326	or	richer@duq.edu

Thank you for your time. I hope you are able to help me with this very important study.

Keith M. Gorse

Keith M. Gorse, MEd, ATC
Duquesne University

<http://www.zoomerang.com/Survey/?p=WEB2293YRDPPC8>



APPENDIX C
Incentive Email Letter to Youth Baseball Directors

Dear Youth Baseball Director,

My name is Keith Gorse, and I am an Instructor in Athletic Training at Duquesne University. I am also a director for a youth baseball organization in Pittsburgh, PA. I am currently working on my doctoral dissertation at Duquesne University that involves health & safety issues and leadership in youth baseball.

A couple of weeks ago, I asked for the assistance of the directors of youth baseball to fill out a short survey that includes questions on health & safety issues that are current in your baseball organization. The purpose of this survey is to obtain health and safety information in regards to youth baseball. The information gathered from this study will be used to help youth baseball organizations develop plans to improve the health and safety for all children, coaches, and spectators who are associated with youth baseball.

As an incentive for all baseball directors that complete the online survey, I will send to you information on youth baseball injuries from the National Athletic Trainers Association website (www.nata.org). I will also send you information on how to certify all directors and coaches in your organization on sports safety through the National Council for Sports Safety (NCSS) organization. Both of these items can be valuable for your youth baseball program in regards to health and safety issues.

Please go to the bottom of this email letter and open the Zoomerang online survey link to begin the survey process. Instructions on how to complete the online survey will be given at the beginning. The completion time for this survey should be less than fifteen (15) minutes, and there are no right or wrong answers to the questions. The youth baseball directors' participation in this study is strictly voluntary. All information provided will be kept strictly confidential. I ask that you answer all of the questions in the online survey; however, you may withdraw from participating in this study at any time

If you have any questions or concerns regarding this online survey or health and safety issues in youth baseball, please contact:

Investigator:	Keith Gorse, ATC	412-396-5959	or	gorse@duq.edu
Faculty Advisor:	Joseph Kush, PhD	412-396-1151	or	kush@duq.edu
IRB Chair:	Paul Richer, PhD	412-396-6326	or	richer@duq.edu

Thank you for your time. I hope you are able to help me with this very important study.

Keith M. Gorse

Keith M. Gorse, MEd, ATC
Duquesne University

<http://www.zoomerang.com/Survey/?p=WEB2293YRDPPC8>

APPENDIX D
Survey Result Tables

Table 18.

Descriptive Statistics for Total Sample of League Directors

Variable	N	Minimum	Maximum	Mean	SD
Years as Director	339	1	27	4.39	3.12
Years As Coach	339	0	31	8.24	4.58
Age of Director	335	28	75	42.31	6.76

Table 19.

Frequency Statistics for Youth Baseball Coaching Experience

Response	Frequency	Percent
Yes	306	87.9
No	33	9.5
Missing	9	2.6
Total	348	100.0

Table 20.

Frequency Statistics for Youth Baseball Director Gender

Response	Frequency	Percent
Male	307	88.2
Female	32	9.2
Missing	9	2.6
Total	348	100.0

Table 21.

Frequency Statistics for Academic Background of Directors

Response	Frequency	Percent	Cumulative Percent
Elementary	1	0.3	0.3
High School	17	4.9	5.2
Trade School	49	14.1	19.3
College	170	48.9	68.2
Post Graduate	102	29.2	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 22.

Descriptive Statistics for Total Sample of Little League Baseball Directors

Variable	N	Minimum	Maximum	Mean	SD
Years as Director	209	1	27	4.87	3.35
Years As Coach	209	0	31	7.85	4.84
Age of Director	206	28	64	42.39	6.82

Table 23.

Frequency Statistics for Little League Baseball Coaching Experience

Response	Frequency	Percent
Yes	182	84.6
No	27	12.6
Missing	6	2.8
Total	215	100.0

Table 24.

Frequency Statistics for Little League Baseball Director Gender

Response	Frequency	Percent
Male	185	86.0
Female	24	11.2
Missing	6	2.8
Total	215	100.0

Table 25.

Frequency Statistics for Academic Background of Little League Baseball Directors

Response	Frequency	Percent	Cumulative Percent
Elementary	0	0.0	0.0
High School	13	6.0	6.0
Trade School	33	15.3	21.3
College	113	52.6	73.9
Post Graduate	50	23.3	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 26.

Descriptive Statistics for Total Sample of Babe Ruth Baseball Directors

Variable	N	Minimum	Maximum	Mean	SD
Years as Director	130	2	25	5.04	2.70
Years As Coach	130	0	31	8.85	4.07
Age of Director	129	28	75	42.17	6.69

Table 27.

Frequency Statistics for Babe Ruth Baseball Coaching Experience

Response	Frequency	Percent
Yes	124	93.2
No	6	4.5
Missing	3	2.3
Total	133	100.0

Table 28.

Frequency Statistics for Babe Ruth Baseball Director Gender

Response	Frequency	Percent
Male	122	91.7
Female	8	6.0
Missing	3	2.3
Total	133	100.0

Table 29.

Frequency Statistics for Academic Background of Babe Ruth Baseball Directors

Response	Frequency	Percent	Cumulative Percent
Elementary	0	0.8	0.8
High School	4	13.0	13.8
Trade School	16	12.0	25.8
College	57	42.8	68.6
Post Graduate	52	30.1	98.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 30.

Frequency Statistics for Youth Baseball Directors Having Good Communication Skills

Response	Frequency	Percent	Cumulative Percent
Always	86	24.7	24.7
Frequent	210	60.3	85.0
Sometimes	43	12.4	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 31.

Frequency Statistics for Youth Baseball Directors Being Able to Handle Health & Safety Situations

Response	Frequency	Percent	Cumulative Percent
Always	111	31.9	31.9
Frequent	218	62.6	94.5
Sometimes	10	2.9	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 32.

Frequency Statistics for Youth Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards

Response	Frequency	Percent	Cumulative Percent
Always	111	31.9	31.9
Frequent	218	62.6	94.5
Sometimes	10	2.9	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 33.

Frequency Statistics for Youth Baseball Directors Being Able to Handle Emergency Situations

Response	Frequency	Percent	Cumulative Percent
Always	114	32.8	32.8
Frequent	211	60.6	93.4
Sometimes	14	4.0	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 34.

Frequency Statistics for Little League Baseball Directors Having Good Communication Skills

Response	Frequency	Percent	Cumulative Percent
Always	68	31.6	31.6
Frequent	129	60.0	91.6
Sometimes	12	5.6	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 35.

Frequency Statistics for Little League Baseball Directors Being Able to Handle Health & Safety Situations

Response	Frequency	Percent	Cumulative Percent
Always	94	43.7	43.7
Frequent	113	52.6	96.3
Sometimes	2	0.9	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 36.

Frequency Statistics for Little League Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards

Response	Frequency	Percent	Cumulative Percent
Always	97	45.1	45.1
Frequent	108	50.2	95.3
Sometimes	4	1.9	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 37.

Frequency Statistics for Little League Baseball Directors Being Able to Handle Emergency Situations

Response	Frequency	Percent	Cumulative Percent
Always	97	45.1	45.1
Frequent	107	49.8	94.9
Sometimes	5	2.3	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 38.

Frequency Statistics for Babe Ruth Baseball Directors Having Good Communication Skills

Response	Frequency	Percent	Cumulative Percent
Always	18	13.5	13.5
Frequent	81	60.9	74.4
Sometimes	31	23.3	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 39.

Frequency Statistics for Babe Ruth Baseball Directors Being Able to Handle Health & Safety Situations

Response	Frequency	Percent	Cumulative Percent
Always	17	12.8	12.8
Frequent	105	78.9	91.7
Sometimes	8	6.0	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 40.

Frequency Statistics for Babe Ruth Baseball Directors Having the Personal Skills Needed to Work with Health & Safety Standards

Response	Frequency	Percent	Cumulative Percent
Always	17	12.8	12.8
Frequent	104	78.1	90.9
Sometimes	9	6.8	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 41.

Frequency Statistics for Babe Ruth Baseball Directors Being Able to Handle Emergency Situations

Response	Frequency	Percent	Cumulative Percent
Always	17	12.8	12.8
Frequent	104	78.1	90.9
Sometimes	9	6.8	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 42.

Descriptive Statistics for Total Sample of Leagues

Variable	N	Minimum	Maximum	Mean	SD
Number of Players	348	72	1600	422.01	205.01
Number of Coaches	348	6	430	53.10	42.16
Male Coaches	348	6	300	46.50	33.58
Female Coaches	348	0	50	5.41	5.65
Non-Authorized Coaches	348	0	200	36.48	27.39
Playing Fields	348	1	15	5.89	2.21

Table 43.

Frequency Statistics for Field Maintenance Responsibility in League

Response	Frequency	Percent
League	311	89.4
Parents	157	45.1
Townships	232	66.7
Coaches	263	75.6
School Districts	25	12.5

Table 44.

Descriptive Statistics for Total Sample of Leagues

Variable	N	Minimum	Maximum	Mean	SD
Number of Players	215	100	1600	411.70	212.40
Number of Coaches	215	9	430	55.14	49.31
Male Coaches	215	9	300	48.53	39.64
Female Coaches	215	0	50	5.24	5.93
Non-Authorized Coaches	215	0	200	31.89	28.86
Playing Fields	215	1	15	5.98	2.24

Table 45.

Frequency Statistics for Field Maintenance Responsibility in League

Response	Frequency	Percent
League	188	87.4
Parents	115	53.5
Townships	143	66.5
Coaches	156	72.6
School Districts	43	20.0

Table 46.

Descriptive Statistics for Total Sample of Leagues

Variable	N	Minimum	Maximum	Mean	SD
Number of Players	133	72	1200	438.74	192.02
Number of Coaches	133	6	200	49.80	26.70
Male Coaches	133	6	150	43.17	19.84
Female Coaches	133	0	25	5.69	5.19
Non-Authorized Coaches	133	0	120	43.89	23.06
Playing Fields	133	1	15	5.75	2.16

Table 47.

Frequency Statistics for Field Maintenance Responsibility in League

Response	Frequency	Percent
League	123	92.5
Parents	42	31.6
Townships	89	66.9
Coaches	107	80.5
School Districts	5	3.8

Table 48.

Frequency Statistics for Coaches Annually Receiving Copy of League Emergency Plan

Response	Frequency	Percent	Cumulative Percent
Always	172	49.4	49.4
Frequent	129	37.1	86.5
Sometimes	41	11.8	98.3
Never	6	1.7	100.0
Total	348	100.0	

Table 49.

Frequency Statistics for Leagues that Annually Update their Emergency Plan

Response	Frequency	Percent	Cumulative Percent
Always	99	28.4	28.4
Frequent	155	44.6	73.0
Sometimes	488	25.3	98.3
Never	6	1.7	100.0
Total	348	100.0	

Table 50.

Frequency Statistics for Leagues Providing Coaches with Family Contact Information

Response	Frequency	Percent	Cumulative Percent
Always	232	66.7	66.7
Frequent	108	31.0	97.7
Sometimes	8	2.3	100.0
Never	0	0	100.0
Total	348	100.0	

Table 51.

Frequency Statistics for League Coaches Inspecting Playing Fields

Response	Frequency	Percent	Cumulative Percent
Always	199	57.2	57.2
Frequent	136	39.1	96.3
Sometimes	10	2.8	99.1
Never	3	0.9	100.0
Total	348	100.0	

Table 52.

Frequency Statistics for League Umpires Inspecting Playing Fields

Response	Frequency	Percent	Cumulative Percent
Always	93	26.7	26.7
Frequent	198	56.9	83.6
Sometimes	54	15.5	99.1
Never	3	0.9	100.0
Total	348	100.0	

Table 53.

Frequency Statistics for Leagues Having First Aid Kits at Events

Response	Frequency	Percent	Cumulative Percent
Always	256	73.6	73.6
Frequent	89	25.5	99.1
Sometimes	3	0.9	100.0
Never	0	0.0	100.0
Total	348	100.0	

Table 54.

Frequency Statistics for League Coaches Trained to Use Contents of First Aid Kits

Response	Frequency	Percent	Cumulative Percent
Always	55	15.8	15.8
Frequent	183	52.6	68.4
Sometimes	100	28.7	97.1
Never	10	2.9	100.0
Total	348	100.0	

Table 55.

Frequency Statistics for Leagues Having Plans to Control Pitching

Response	Frequency	Percent	Cumulative Percent
Always	286	82.2	82.2
Frequent	58	16.4	98.6
Sometimes	5	1.4	100.0
Never	0	0.0	100.0
Total	348	100.0	

Table 56.

Frequency Statistics for Leagues Purchasing Equipment through Authorized Companies

Response	Frequency	Percent	Cumulative Percent
Always	242	69.5	69.5
Frequent	102	29.3	98.9
Sometimes	3	0.9	99.7
Never	1	0.3	100.0
Total	348	100.0	

Table 57.

Frequency Statistics for Leagues Reconditioning Equipment through Authorized Companies

Response	Frequency	Percent	Cumulative Percent
Always	44	12.6	12.6
Frequent	171	49.2	61.8
Sometimes	92	26.4	88.2
Never	41	11.8	100.0
Total	348	100.0	

Table 58.

Frequency Statistics for League Catchers Required to Wear Proper Catching Equipment

Response	Frequency	Percent	Cumulative Percent
Always	343	98.3	98.3
Frequent	6	1.7	100.0
Sometimes	0	0.0	100.0
Never	0	0.0	100.0
Total	348	100.0	

Table 59.

Frequency Statistics for Coaches Annually Receiving Copy of Leagues Emergency Plan

Response	Frequency	Percent	Cumulative Percent
Always	146	67.9	67.9
Frequent	56	26.0	94.0
Sometimes	12	5.6	99.5
Never	1	0.5	100.0
Total	215	100.0	

Table 60.

Frequency Statistics for Leagues that Update their Emergency Plan

Response	Frequency	Percent	Cumulative Percent
Always	91	42.3	42.3
Frequent	107	49.8	92.1
Sometimes	16	7.4	99.5
Never	1	0.5	100.0
Total	215	100.0	

Table 61.

Frequency Statistics for Leagues Providing Coaches with Family Contact Information

Response	Frequency	Percent	Cumulative Percent
Always	171	79.5	79.5
Frequent	42	19.6	91.1
Sometimes	2	0.9	100.0
Never	0	0.0	100.0
Total	215	100.0	

Table 62.

Frequency Statistics for League Coaches Inspecting Playing Fields

Response	Frequency	Percent	Cumulative Percent
Always	151	70.2	70.2
Frequent	52	24.2	94.4
Sometimes	9	4.2	98.6
Never	3	1.4	100.0
Total	215	100.0	

Table 63.

Frequency Statistics for League Umpires Inspecting Playing Fields

Response	Frequency	Percent	Cumulative Percent
Always	67	31.2	31.2
Frequent	127	59.0	90.2
Sometimes	18	8.4	98.6
Never	3	1.4	100.0
Total	215	100.0	

Table 64.

Frequency Statistics for Leagues Having First Aid Kits at Events

Response	Frequency	Percent	Cumulative Percent
Always	182	84.7	84.7
Frequent	33	15.3	100.0
Sometimes	0	0.0	100.0
Never	0	0.0	100.0
Total	215	100.0	

Table 65.

Frequency Statistics for League Coaches Trained to Use Contents of First Aid Kits

Response	Frequency	Percent	Cumulative Percent
Always	51	23.7	23.7
Frequent	134	62.3	86.0
Sometimes	23	10.7	96.7
Never	7	3.3	100.0
Total	215	100.0	

Table 66.

Frequency Statistics for Leagues Having Plans to Control Pitching

Response	Frequency	Percent	Cumulative Percent
Always	210	97.7	97.7
Frequent	2	0.9	98.6
Sometimes	3	1.4	100.0
Never	0	0.0	100.0
Total	215	100.0	

Table 67.

Frequency Statistics for Leagues Purchasing Equipment through Authorized Companies

Response	Frequency	Percent	Cumulative Percent
Always	170	79.1	79.1
Frequent	42	19.5	98.6
Sometimes	2	0.9	99.5
Never	1	0.5	100.0
Total	215	100.0	

Table 68.

Frequency Statistics for Leagues Reconditioning Equipment through Authorized Companies

Response	Frequency	Percent	Cumulative Percent
Always	32	14.9	14.9
Frequent	120	58.8	70.7
Sometimes	25	11.6	82.3
Never	38	17.7	100.0
Total	215	100.0	

Table 69.

Frequency Statistics for League Catchers Required to Wear Proper Catching Equipment

Response	Frequency	Percent	Cumulative Percent
Always	214	98.3	98.3
Frequent	1	0.7	100.0
Sometimes	0	0.0	100.0
Never	0	0.0	100.0
Total	215	100.0	

Table 70.

Frequency Statistics for Coaches Annually Receiving Copy of Leagues Emergency Plan

Response	Frequency	Percent	Cumulative Percent
Always	26	19.5	19.5
Frequent	73	54.9	74.4
Sometimes	29	21.8	96.2
Never	5	3.8	100.0
Total	133	100.0	

Table 71.

Frequency Statistics for Leagues that Update their Emergency Plan

Response	Frequency	Percent	Cumulative Percent
Always	8	60.0	6.0
Frequent	48	36.1	42.1
Sometimes	72	54.1	96.2
Never	5	3.8	100.0
Total	133	100.0	

Table 72.

Frequency Statistics for Leagues Providing Coaches with Family Contact Information

Response	Frequency	Percent	Cumulative Percent
Always	61	45.9	45.9
Frequent	66	49.6	95.5
Sometimes	6	4.5	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 73.

Frequency Statistics for League Coaches Inspecting Playing Fields

Response	Frequency	Percent	Cumulative Percent
Always	48	36.1	36.1
Frequent	84	63.1	99.2
Sometimes	1	0.8	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 74.

Frequency Statistics for League Umpires Inspecting Playing Fields

Response	Frequency	Percent	Cumulative Percent
Always	26	19.5	19.5
Frequent	71	53.4	72.9
Sometimes	36	27.1	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 75.

Frequency Statistics for Leagues Having First Aid Kits at Events

Response	Frequency	Percent	Cumulative Percent
Always	74	55.6	55.6
Frequent	56	42.1	97.7
Sometimes	3	2.3	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 76.

Frequency Statistics for League Coaches Trained to Use Contents of First Aid Kits

Response	Frequency	Percent	Cumulative Percent
Always	4	3.0	3.0
Frequent	49	36.8	39.8
Sometimes	77	57.9	97.7
Never	3	2.3	100.0
Total	133	100.0	

Table 77.

Frequency Statistics for Leagues Having Plans to Control Pitching

Response	Frequency	Percent	Cumulative Percent
Always	76	57.1	57.1
Frequent	55	41.4	98.5
Sometimes	2	1.5	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 78.

Frequency Statistics for Leagues Purchasing Equipment through Authorized Companies

Response	Frequency	Percent	Cumulative Percent
Always	72	54.1	54.1
Frequent	60	45.1	99.2
Sometimes	1	0.8	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 79.

Frequency Statistics for Leagues Reconditioning Equipment through Authorized Companies

Response	Frequency	Percent	Cumulative Percent
Always	12	9.0	9.0
Frequent	51	38.3	47.4
Sometimes	67	50.4	97.7
Never	3	2.3	100.0
Total	133	100.0	

Table 80.

Frequency Statistics for League Catchers Required to Wear Proper Catching Equipment

Response	Frequency	Percent	Cumulative Percent
Always	128	96.2	96.2
Frequent	5	3.8	100.0
Sometimes	0	0.0	100.0
Never	0	0.0	100.0
Total	133	100.0	

Table 81.

Frequency Statistics for League Coaches Being Trained in First Aid

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	240	69.0	69.0
Agree	98	28.2	97.1
Disagree	9	2.5	99.7
Strongly Disagree	1	0.3	100.0
Total	348	100.0	

Table 82.

Frequency Statistics for League Coaches Being Trained in CPR

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	171	49.1	49.1
Agree	154	44.3	93.4
Disagree	20	5.7	99.1
Strongly Disagree	3	0.9	100.0
Total	348	100.0	

Table 83.

Frequency Statistics for Leagues Contacting Local EMS in Regards to Season Events

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	102	29.3	29.3
Agree	227	65.2	94.5
Disagree	19	5.5	100.0
Strongly Disagree	0	0.0	100.0
Total	348	100.0	

Table 84.

Frequency Statistics for League Gathering Medical Information

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	233	67.0	67.0
Agree	110	31.6	98.6
Disagree	5	1.4	100.0
Strongly Disagree	0	0.0	100.0
Total	348	100.0	

Table 85.

Frequency Statistics for Leagues Having Permanent Land-Line Phones at All Fields

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	113	32.5	32.5
Agree	197	56.6	97.1
Disagree	32	9.2	98.3
Strongly Disagree	6	1.7	100.0
Total	348	100.0	

Table 86.

Frequency Statistics for Leagues Having Cell Phones at All Fields

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	200	57.5	57.5
Agree	144	41.4	99.9
Disagree	4	1.1	100.0
Strongly Disagree	0	0.0	100.0
Total	348	100.0	

Table 87.

Frequency Statistics for Leagues Having a Plan for Lightning Storms

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	302	86.8	86.8
Agree	46	13.2	100.0
Disagree	0	0.0	100.0
Strongly Disagree	0	0.0	100.0
Total	348	100.0	

Table 88.

Frequency Statistics for Leagues Having a Plan to Manage Heat Illness

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	214	61.5	61.5
Agree	134	38.5	100.0
Disagree	0	0.0	100.0
Strongly Disagree	0	0.0	100.0
Total	348	100.0	

Table 89.

Frequency Statistics for Leagues Having a Plan to Manage Head & Neck Injuries

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	134	38.5	38.5
Agree	202	58.0	96.5
Disagree	2	0.6	97.1
Strongly Disagree	1	0.3	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 90.

Frequency Statistics for Leagues Having Batters Wear Protective Face Masks on Helmets

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	13	3.8	3.8
Agree	139	39.9	43.7
Disagree	179	51.4	95.1
Strongly Disagree	8	2.3	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 91.

Frequency Statistics for Leagues Having Fielders Wear Mouth Guards

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	6	1.7	1.7
Agree	183	52.6	54.3
Disagree	140	40.2	94.5
Strongly Disagree	10	2.9	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 92.

Frequency Statistics for Leagues Having Fielders Wear Chest Protectors

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	4	1.1	1.1
Agree	19	5.5	6.6
Disagree	289	83.0	89.6
Strongly Disagree	27	7.8	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 93.

Frequency Statistics for Leagues Having Younger Age Levels Using Safety Baseballs

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	33	9.5	9.5
Agree	264	75.8	85.3
Disagree	41	11.8	97.1
Strongly Disagree	1	0.3	97.4
Missing	9	2.6	100.0
Total	348	100.0	

Table 94.

Frequency Statistics for League Coaches Being Trained in First Aid

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	173	80.5	80.5
Agree	34	15.8	96.3
Disagree	7	3.2	99.5
Strongly Disagree	1	0.5	100.0
Total	215	100.0	

Table 95.

Frequency Statistics for League Coaches Being Trained in CPR

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	135	62.8	62.8
Agree	62	28.8	91.6
Disagree	16	7.4	99.1
Strongly Disagree	2	0.9	100.0
Total	215	100.0	

Table 96.

Frequency Statistics for Leagues Contacting Local EMS in Regards to Season Events

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	75	34.9	34.9
Agree	125	58.1	93.0
Disagree	15	7.0	100.0
Strongly Disagree	0	0.0	100.0
Total	215	100.0	

Table 97.

Frequency Statistics for League Gathering Medical Information

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	173	80.5	80.5
Agree	38	17.6	98.1
Disagree	4	1.9	100.0
Strongly Disagree	0	0.0	100.0
Total	215	100.0	

Table 98.

Frequency Statistics for Leagues Having Permanent Land-Line Phones at All Fields

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	74	34.4	34.4
Agree	107	49.8	84.4
Disagree	29	13.5	97.7
Strongly Disagree	5	2.3	100.0
Total	215	100.0	

Table 99.

Frequency Statistics for Leagues Having Cell Phones at All Fields

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	150	69.8	69.8
Agree	61	28.3	98.1
Disagree	4	1.9	100.0
Strongly Disagree	0	0.0	100.0
Total	215	100.0	

Table 100.

Frequency Statistics for Leagues Having a Plan for Lightning Storms

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	202	94.0	94.0
Agree	13	6.0	100.0
Disagree	0	0.0	100.0
Strongly Disagree	0	0.0	100.0
Total	215	100.0	

Table 101.

Frequency Statistics for Leagues Having a Plan to Manage Heat Illness

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	165	76.7	76.7
Agree	50	23.3	100.0
Disagree	0	0.0	100.0
Strongly Disagree	0	0.0	100.0
Total	215	100.0	

Table 102.

Frequency Statistics for Leagues Having a Plan to Manage Head & Neck Injuries

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	103	47.9	47.9
Agree	103	47.9	95.8
Disagree	2	0.9	96.7
Strongly Disagree	1	0.5	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 103.

Frequency Statistics for Leagues Having Batters Wear Protective Face Masks on Helmets

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	11	5.1	5.1
Agree	81	37.7	42.8
Disagree	111	51.6	94.4
Strongly Disagree	6	2.8	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 104.

Frequency Statistics for Leagues Having Fielders Wear Mouth Guards

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	6	2.8	2.8
Agree	113	52.6	55.4
Disagree	82	38.1	93.5
Strongly Disagree	8	3.7	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 105.

Frequency Statistics for Leagues Having Fielders Wear Chest Protectors

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	4	1.9	1.9
Agree	10	4.7	6.6
Disagree	172	80.0	86.6
Strongly Disagree	23	10.6	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 106.

Frequency Statistics for Leagues Having Younger Age Levels Using Safety Baseballs

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	29	13.5	13.5
Agree	164	76.2	89.7
Disagree	15	7.0	96.7
Strongly Disagree	1	0.5	97.2
Missing	6	2.8	100.0
Total	215	100.0	

Table 107.

Frequency Statistics for League Coaches Being Trained in First Aid

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	67	50.4	50.4
Agree	64	48.1	98.5
Disagree	2	1.5	100.0
Strongly Disagree	0	0.0	100.0
Total	133	100.0	

Table 108.

Frequency Statistics for League Coaches Being Trained in CPR

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	36	27.1	27.1
Agree	92	69.1	96.2
Disagree	4	3.0	99.2
Strongly Disagree	1	0.8	100.0
Total	133	100.0	

Table 109.

Frequency Statistics for Leagues Contacting Local EMS in Regards to Season Events

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	27	20.3	20.3
Agree	102	76.7	97.0
Disagree	4	3.0	100.0
Strongly Disagree	0	0.0	100.0
Total	133	100.0	

Table 110.

Frequency Statistics for League Gathering Medical Information

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	60	45.1	45.1
Agree	72	54.1	99.2
Disagree	1	0.8	100.0
Strongly Disagree	0	0.0	100.0
Total	133	100.0	

Table 111.

Frequency Statistics for Leagues Having Permanent Land-Line Phones at All Fields

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	39	29.2	29.2
Agree	90	67.7	96.9
Disagree	3	2.3	99.2
Strongly Disagree	1	0.8	100.0
Total	133	100.0	

Table 112.

Frequency Statistics for Leagues Having Cell Phones at All Fields

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	50	37.6	37.6
Agree	83	62.4	100.0
Disagree	0	0.0	100.0
Strongly Disagree	0	0.0	100.0
Total	133	100.0	

Table 113.

Frequency Statistics for Leagues Having a Plan for Lightning Storms

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	100	75.2	75.2
Agree	33	24.8	100.0
Disagree	2	1.5	100.0
Strongly Disagree	0	0.0	100.0
Total	133	100.0	

Table 114.

Frequency Statistics for Leagues Having a Plan to Manage Heat Illness

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	49	36.8	36.8
Agree	84	63.2	100.0
Disagree	0	0.0	100.0
Strongly Disagree	0	0.0	100.0
Total	133	100.0	

Table 115.

Frequency Statistics for Leagues Having a Plan to Manage Head & Neck Injuries

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	31	23.3	23.3
Agree	99	74.4	97.7
Disagree	82	0.0	97.7
Strongly Disagree	0	0.0	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 116.

Frequency Statistics for Leagues Having Batters Wear Protective Face Masks on Helmets

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	2	1.5	1.5
Agree	58	43.6	45.1
Disagree	68	51.1	96.2
Strongly Disagree	2	1.5	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 117.

Frequency Statistics for Leagues Having Fielders Wear Mouth Guards

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	0	0.0	0.0
Agree	70	52.6	52.6
Disagree	58	43.6	96.2
Strongly Disagree	2	1.5	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 118.

Frequency Statistics for Leagues Having Fielders Wear Chest Protectors

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	0	0.0	0.0
Agree	9	6.7	6.7
Disagree	117	88.0	94.7
Strongly Disagree	4	3.0	97.7
Missing	3	2.3	100.0
Total	133	100.0	

Table 119.

Frequency Statistics for Leagues Having Younger Age Levels Using Safety Baseballs

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	4	3.0	3.0
Agree	100	75.2	78.2
Disagree	26	19.5	97.7
Strongly Disagree	0	0.0	97.7
Missing	3	2.3	100.0
Total	133	100.0	