

Perceptions of Athletic Training Education Program Directors on their
Students' Persistence and Departure Decisions

A Dissertation

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Doctor of Philosophy

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Abstract

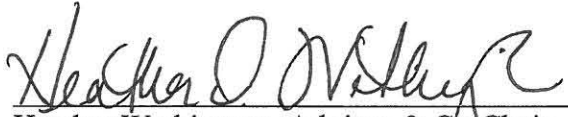
The athletic training profession is in the midst of a large increase in demand for health care professionals for the physically active. In order to meet demand, directors of athletic training education programs (ATEPs) are challenged with providing sufficient graduates. There has been a large increase in ATEPs nationwide since educational reform in athletic training in 2004. Younger ATEPs have been found to struggle additionally with retaining students than other more established programs; however, it remains unknown whether retention is currently a problem in athletic training education. I used a mixed method survey - the Athletic Training Student Retention Survey for Program Directors - to determine if retention is a problem in athletic training education and what factors program directors believe are associated with student persistence and departure decisions. I gathered responses from a representative group of 177 program directors out of 343 nationwide (51.6%). The results of the study indicated a self-reported retention rate of 81.02%. This rate is reasonable compared with another similar health care professional program at the baccalaureate level. I identified several factors that influence student retention. The timing of the secondary admissions process, the number of students admitted to the ATEP annually, the curricular design, and the experiences of students all factor into the decisions of students to persist in or depart from an ATEP according to ATEP program directors. Program directors should provide students with early socialization to allow them to make an informed decision to enter an ATEP, select students who they can provide with individual attention and who can be successful in their program, avoid unreasonable academic expectations by carefully

designing the curriculum, and provide a dynamic and exciting atmosphere to support student learning.

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APPROVAL OF THE DISSERTATION

This dissertation, "Perceptions of Athletic Training Program Directors on Athletic Training Student Persistence and Departure Decisions," has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy.


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6.25.12
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DEDICATION

To my family, for their unwavering support.

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CHAPTER 1

INTRODUCTION

Retention is a term used by an institution, department, or program to refer to maintaining student enrollment (Racchini, 2005). Leaving college before degree completion is called attrition (Catalano & Eddy, 1993). Students may leave due to dismissal for academic failure, withdrawal in poor academic standing, dismissal, or withdrawal because of other factors (financial, disciplinary, etc.), or to transfer to a different institution (Cariago-Lo, Enarson, Crandall, Zaccaro, & Boyd, 1997). Common causes for these departures include poor college preparation, lack of motivation, financial concerns, time constraints, and college fit or compatibility issues (Cariago-Lo et al., 1997) due to poor academic or social integration or if no course of study is appealing. The institutional cost of a student's departure is greater the longer the student is enrolled no matter what the student's reasons for leaving may have been (Wetzel, O'Toole, & Peterson, 1999).

Students may leave an institution due to poor academic integration if they abandon their original major and no alternative program is of interest. Student retention in health care disciplines, such as nursing and athletic training, is important to the nation as health care has become the biggest industry in the United States (Watson, 2010). The demand for health care professionals will continue to increase because the older portion of the population with more health problems on average is growing rapidly, life expectancy has increased, the ability of children to care for their elderly parents has

declined, and medical technology advances have allowed options for the care of more ill patients (Watson, 2010). As the demand for quality health care within the United States continues to grow, institutions of higher education must produce the next generation of health care professionals. An inadequate production of health care professionals can have a detrimental effect on the ability of physicians to care for the public (Gupta, 1991) because of the role they fulfill. The relationship between physicians and health care professionals stresses the importance of properly retaining high-achieving health care students, including athletic trainers who care for physically active individuals.

Athletic trainers (ATs) are health care professionals who provide care for physically active individuals in various settings including high schools, colleges, professional sports teams, law enforcement offices, clinics, and industrial sites. ATs are important health care professionals as they enhance performance and participation (National Athletic Trainers' Association, 2011) by promoting and maintaining the health of their patients. The rise in attention to concussive injury and several recent unfortunate deaths of athletes during sports participation have helped to validate the importance of the work ATs perform -- sparking a dramatic increase in their demand. Increased media coverage of these incidences has raised awareness for the need for ATs at all levels of activity - not just professional sports - and has led several states to pass legislation to help improve athlete care. In 1998, the American Medical Association recommended that all high schools offer athletic training services to their athletes (American Medical Association, 1998) as athletic trainers have been shown to significantly improve the level of medical care received by interscholastic athletes (Wham, Saunders, & Mensch, 2010). Further, the American Academy of Neurology recommends an athletic trainer be present

at all sporting events, including practices, where athletes may sustain a concussion (American Academy of Neurology, 2010). The state of Rhode Island passed legislation mandating the presence of an athletic trainer at any interscholastic sporting contest; however, most high schools are in violation of the law (Smith, 2010) for unknown reasons. By the year 2018, the profession of athletic training is expected to see a 37% increase in positions available in various work settings (Lacey & Wright, 2009). Athletic training has also been listed in several top-10 lists for the fastest growing careers over the next few years (McKay, 2011; Shellenbarger, 2010; "Top 10 fastest growing allied health careers," 2011; "Top 50 fastest-growing occupations," 2011). The production of qualified graduates from ATEPs is essential for the profession to continue to meet the demand for competent health care professionals for the physically active population.

Recently, researchers have begun to study the issues surrounding the retention of students in athletic training education programs (ATEPs) (Bowman & Dodge, 2011; Dodge, Mitchell, & Mensch, 2009; Herzog, Anderson, & Starkey, 2008) although athletic training student retention has yet to be identified as a problem. One possibility for the increased attention to athletic training student retention may stem from the move to accredited undergraduate education programs. Prior to 2004, prospective athletic trainers could enter the profession either through an accredited program or via an internship route. Athletic training education reform included abandoning the internship route and requiring candidates to graduate from an accredited undergraduate athletic training education program before sitting for the Board of Certification examination. The Board of Certification examination acts as the gateway to the profession as candidates must pass this exam to enter the profession. The elimination of the internship path has caused the

number of ATEPs in the United States to more than double to the current number of 343 (Commission on Accreditation of Athletic Training Education, 2011). Since the reform has caused a dramatic increase in younger programs and literature suggests younger programs have more difficulty with retention (Herzog, 2002), it is worthwhile to explore if retention is a problem for ATEPs.

Maintaining high retention rates is important to preserve the status, financial stability, and quality of the ATEP (Herzog, 2004). Attrition of lower achieving students has been considered a necessary and inevitable (Dodge, Mitchell, et al., 2009) “weeding-out” process (Herzog et al., 2008), yet improving persistence to graduation by academically sound students will assist the profession of athletic training by providing strong clinicians. Therefore, it is important for athletic training program directors to gain further understanding about how to retain high-achieving athletic training students to meet the growing demand in the health care arena and maintain the institutional and program reputation. Exploring the perceptions athletic training program directors have about athletic training student retention can improve understanding of the aspects of ATEPs that facilitate and hinder student success. Providing program directors with insight into positive and negative ATEP characteristics has the potential to initiate curricular changes to improve student retention because program directors are the sole individuals responsible for the operations of the ATEP, including both didactic and clinical educational experiences. Currently, it is unknown whether AT student retention is a challenge, what factors might be associated with student persistence or departure, and the perceptions of ATEP program directors regarding AT student retention.

Problem Statement and Research Questions

The aim of the proposed study is to explore the perceptions of athletic training program directors regarding athletic training student retention and attrition. In order to complete this study, athletic training program directors from all 343 accredited undergraduate ATEPs in the United States will be asked to complete an online survey.

The following research questions will be explored:

1. Is athletic training student retention a problem?
2. What factors might be associated with athletic training student retention or attrition?

The study is grounded in a theoretical framework derived from the literature on retention of athletic training students (Dodge, 2006). The review of the literature will lend relevance to the proposed research questions and a primary research design will outline the feasibility of answering these research questions. Chapter 2 will include the literature review and the theoretical framework. Following chapter 2, chapter 3 will review the methods that will be used to answer the above research questions. Chapters 4 and chapter 5 will present the results of the quantitative and qualitative data, respectively. Finally, chapter 6 will provide a discussion of the results.

CHAPTER 2

REVIEW OF THE LITERATURE

Student attrition is harmful to higher education institutions in terms of competitiveness, prestige, and financial stability while students are hindered psychologically and opportunistically in the workforce (Stetto, Gackstetter, Cruess, & Hooper, 2004). Attrition is not only detrimental to the student and the institution but also diminishes the number of college graduates in the workforce making international competition difficult as other nations bypass the United States for the highest number of college degrees (Lee & Rawls, 2010). Only 40.4% of 25-34 year olds have at least an associate's degree in the United States compared to 55.8% for Canada (Lee & Rawls, 2010). Further, the six-year graduation rate for students seeking bachelor's degrees for the first time in America is 57% (National Center for Education Statistics, 2011).

Attrition can be problematic at not only the institutional level but also at the programmatic level. Students may leave an institution if no similar alternative program is available for them to choose. Several health care professional programs struggle to retain students due to the large clinical hour requirements and challenging coursework that form their structure (Gupta, 1991; Sherrod et al., 1992). As health care has become the largest industry in America (Watson, 2010), retention of high-achieving students in health care professional programs has become increasingly important to meet the medical needs of the American people. Specific to athletic training, low retention rates will not allow

supply to meet the increasing demand (Lacey & Wright, 2009) for health care providers for the physically active.

This chapter includes a synthesis of the research exploring student persistence in higher education, nursing student retention research, and athletic training education literature. A review of research examining variables that influence student persistence decisions provides a backdrop allowing understanding of retention and attrition factors in higher education. The nursing literature is analyzed because research on nursing student retention is plentiful, nursing programs are similar in structure to ATEPs, and research evaluating athletic training student retention is modest. Finally, research in athletic training is presented focusing on the few studies that have been completed on student retention, potential reasons for athletic training student attrition, and finally potential ways to improve athletic training student retention.

Factors Influencing Student Persistence Decisions in Higher Education

Researchers have published considerable material to understand why students do or do not complete their higher education degrees. Much of the literature suggests many students who do not finish their degrees leave voluntarily due to dissatisfaction with their college experience (Tinto, 1993, 1997) while other students finish their degrees because they perceive a cohesive peer environment, frequently participate in events sponsored by their institution, and feel as though their institution shows individual concern for them (Pascarella & Terenzini, 1991). However, the reasons for student departure are myriad; subsequently scholars have investigated the effects of numerous institutional characteristics on students' decisions to stay or to leave an institution.

Studies have explored both extrinsic and intrinsic institutional dynamics.

Whether an institution receives public or private funding appears to have little effect on the persistence decisions of students (Astin, 1993; Pascarella & Terenzini, 2005).

Institutional size appears to have a modest effect on student retention (Pascarella & Terenzini, 2005); however, the enrollment size of an institution may alter other facets of student life such as social involvement (Stoecker & Pascarella, 1991). The selectivity of an institution has a modest effect on persistence as students from more elite colleges enjoy greater educational attainment (Pascarella & Terenzini, 2005). Pascarella and Terenzini (2005) suggest students who enroll at institutions with higher selectivity are better prepared, enjoy a higher ability to complete college work, possess higher ambition for finishing a degree and finding a career, and have families who are better able to provide support.

Researchers have analyzed the effects of multiple intrinsic institutional variables on student persistence decisions. Supplemental instruction in the form of tutoring sessions for traditionally difficult courses improves persistence; however, additional rigorous controlled studies are needed to better understand how academic assistance alters student retention (Pascarella & Terenzini, 2005). Career development assistance (Jurgens & Schwitzer, 2002) helps improve persistence because students are able to see themselves employed after graduation. First-year seminars also appear to improve college graduation rates (Starke, Harth, & Sirianni, 2001) and persistence of a wide variety of students, although the content of the seminars vary widely across institutions (Pascarella & Terenzini, 2005). It remains clouded if the positive effects of first-year

seminars are direct or indirect because the programs offer early socialization and time-management skills.

Since Tinto (1987) introduced his Student Integration Model, a multitude of research has attempted to confirm the importance of academic and social integration on student persistence decisions with mixed results. While some research has shown only partial support for Tinto's model (Braxton, Sullivan, & Johnson, 1997), other studies have shown that academic and social integration in an institution can significantly influence student persistence decisions (Astin, 1993; Pascarella & Terenzini, 2005). Integration is defined as the student becoming involved in the campus community and the feeling that he or she belongs in that community (Tinto, 1975, 1993, 1997). Integration that occurs early on in students' college careers can have a more positive influence on persistence decisions (Gerdes & Mallinckrodt, 1994) stressing the importance of early socialization.

Several socializing factors play a large role in student persistence decisions. A student's academic advisor has the ability to positively impact a student's decision to persist to degree completion by appropriately and promptly dealing with any problems the student encounters (L. Thomas, 2002; Thurber, Hollingsworth, Brown, & Whitaker, 1989). Informal faculty-student interaction also tends to aid in student retention (Astin, 1993; Gerdes & Mallinckrodt, 1994; Graunke & Woosley, 2005; Lockie & Burke, 1999; Pascarella & Terenzini, 1979) by improving the student's willingness and enthusiasm to learn on his or her own (Shelton, 2003). Students are also socialized to the academic atmosphere, and the relationship between the student and the institution is strengthened through positive interactions with faculty (Pascarella & Terenzini, 2005). Faculty can

improve their interaction with students by creating smaller writing classes, increasing their number of office hours, and by improving their advising skills through professional development (Young, 2003). Positive student-faculty interactions not only improve persistence, but also facilitate both student and faculty learning (Salinitri, 2005). The counseling students receive assists in their transition to college life, and faculty gain experience promoting academic and lifelong learning through one-on-one sessions. Positive interactions between peers also improve persistence and rates of degree completion among undergraduate students (Astin, 1993; Pascarella & Terenzini, 1991). Positive interactions with peers allow students to associate with others who share similar beliefs and seek membership in homogeneous groups (Astin, 1993) leading to improved student retention.

Much of the literature generating theory for student departure occurred prior to the point in time where college campuses started enrolling large numbers of minority students (Rendon, Jalomo, & Nora, 2000). Therefore, early retention models did not account for factors specifically influencing minority student departure. Alternative retention models have been required as the United States population and higher education have become more multicultural (Rendon et al., 2000). Some students, especially minorities and first-generation college students, may not understand the higher education landscape thereby making it difficult for them to become integrated into the campus community (Rendon, 1994). As diversity at institutions has increased (e.g., race, ethnicity, socioeconomic status, etc), students may need validation from administrators, faculty, and staff that they belong in college because students who do not fit the

traditional student profile may feel alienated or intimidated by the culture at their institution.

Differences among academic programs can also lead to variation in persistence decisions of students (Pascarella & Terenzini, 2005). Students may decide not to finish a particular degree program due to the environment, which factors such as faculty supportiveness and classmate interactions shape. According to Pascarella & Terenzini (1979), other considerations influencing the decision to persist within a particular program are societal perceptions of the major and potential future wages the student may earn after graduation. In this respect, specialized academic programs may need to develop retention programs to support their students based on specific curricular challenges. Educational programs in the allied health professions often fall in the group of programs that have specific student needs that program faculty need to address. Health care programs have trouble retaining students due to the large clinical hour requirements and challenging coursework that form their structure (Gupta, 1991; Sherrod et al., 1992).

Student Retention in Nursing Programs is Relevant to ATEPs

The nursing education literature is robust with retention research compared to the scarce amount of athletic training education literature. One possibility for this difference may be the fact that the nursing profession is much older than athletic training. Nursing programs have acknowledged different ways to help improve student persistence because retaining nursing students is difficult due to the challenging curriculum. The nursing program literature may translate well to athletic training challenges as the programs are similar in design. Therefore, a review of the literature on nursing student retention is

included. I will focus the review on Bachelor of Science in nursing programs as two-year degree programs do not translate to athletic training programs because undergraduate ATEPs are four-year degree programs.

Accreditation standards set 80% as the desirable retention rate for baccalaureate nursing degree programs (National League for Nursing Accrediting Commission, 1996) compared to the 58% nationwide mark for students from all programs at four-year institutions (Snyder, Dillow, & Hoffman, 2008). The accrediting agency can place programs on probation if they do not meet the 80% retention standard. Mandating a cutoff retention rate by accreditation agencies may improve attrition rates by forcing faculty and administrators to use a selective admissions process before admitting students into a program.

Grade point averages, standardized test scores, and pre-nursing examinations all predict nursing student graduation while self-enhancement predictors (e.g., self-esteem, learning style, social support, etc), demographics, and gender do not correlate with graduation (Campbell & Dickson, 1996). The best predictor of nursing student persistence is a high grade point average in nursing and science courses while the best predictor of attrition is a low level of parental education and a younger age of the nursing student (Campbell & Dickson, 1996). Students often leave nursing programs due to personal problems and dissatisfaction (Braithwaite, Elzubeir, & Stark, 1994). Indeed, nursing students who departed reported that the program was not what they anticipated (Harvey & McMurray, 1997).

Students who persist to graduation in nursing programs perceive a higher level of faculty support creating a positive learning environment compared to students who either

drop out voluntarily or fail out (Shelton, 2003). Persisters also feel the faculty want them to succeed, probably because of their informal interactions with the faculty. Faculty or administrators need to contact struggling students to evaluate their need for assistance as these students often do not feel a sense of faculty support (Shelton, 2003) and are not likely to seek out support themselves. A common theme among nursing faculty for reducing student attrition centers around time constraints and positive feedback (Higgins, 2005). Faculty members feel as though they could find innovative ways to teach and fulfill the role of a student mentor more appropriately if they did not have as many responsibilities aside from teaching and interacting with students in their workloads (Higgins, 2005). Faculty also believe they would be more passionate and inspired if they received acknowledgment for their efforts (Higgins, 2005).

Some nursing programs have taken steps to reduce attrition in their programs. Three primary prevention strategies for attrition have been identified: 1) promoting public knowledge of nursing programs and the nursing profession; 2) maintaining faculty knowledge related to retention and cultural diversity; and 3) creating a team at the institution that develops ideas to reduce attrition (Wells, 2003). According to Wells (2003), incorporating these three strategies into nursing programs can reduce attrition rates. One retention initiative incorporates peer study sessions, facilitates professional socialization, coordinates a mentoring program, and instills multicultural sensitivity among the nursing faculty (Lockie & Burke, 1999). The initiative significantly improved retention of at-risk students over a three-year period compared to a control group. Nursing programs have developed student orientation seminars (Campbell & Dickson, 1996) and student faculty mentoring sessions (Candela, Kowalski, Cyrkiel, & Warner,

2004) for at-risk students. These orientation sessions help socialize students into the nursing program and faculty mentoring sessions assist students in defining their difficulties and developing strategies to help them overcome their challenges and persist in the program. The value of these programs is evident by the positive feedback from students who take advantage of the orientation sessions and mentoring meetings. Other nursing programs sponsor monthly initiatives including guest speakers, faculty interventions, and student mentoring to improve the nursing program retention rate (Matteson-Kane & Clarren, 2003). Peer tutoring programs assist in improving academic performance and retention of at-risk students (Higgins, 2004). Although these initiatives and programs can improve nursing student retention, maintaining these programs requires financial support from the institution and release time for appropriate faculty supervision (Wells, 2003).

Some of the nursing student retention literature is difficult to interpret due to the variations in methodology among various authors (Campbell & Dickson, 1996). Generalizability of the findings is also problematic due to the lack of demographic information provided on the subjects. Therefore, more research is warranted evaluating nursing student retention (Campbell & Dickson, 1996). Although some data support nursing program interventions meant to improve persistence, longitudinal studies are required to evaluate the long-term success of these initiatives (Campbell & Dickson, 1996).

Due to the lack of research on retention of athletic training students, the abundance of research that examines nursing student retention, and the similarities between nursing programs and ATEPs, the most common practices identified by nursing

programs to improve student retention might prove beneficial to athletic training students, faculty, and administrators. Improving public knowledge of the AT profession (Wells, 2003), providing students with peer study sessions (Higgins, 2004; Lockie & Burke, 1999), socializing students early on in their educational career (Candela et al., 2004; Lockie & Burke, 1999), and providing students with a mentoring program (Candela et al., 2004; Lockie & Burke, 1999; Matteson-Kane & Clarren, 2003) have the potential to translate to athletic training education. It remains unknown if ATEPs use any of these initiatives or any other programs to help reduce student attrition.

Student Retention in Undergraduate Athletic Training Education Programs

Accredited athletic training programs are required by the Commission on Accreditation of Athletic Training Education (Commission on Accreditation of Athletic Training Education, 2008) to teach students the six domains of athletic training. Students gain knowledge of prevention; recognition, evaluation and assessment; immediate care, treatment, rehabilitation, and reconditioning; organization and administration; and professional development (Board of Certification, 2006). The structure of the athletic training profession is based on these domains, making them the backbone of undergraduate education in athletic training. Undergraduate education for ATs is composed of both didactic and clinical education to ensure graduates have the knowledge and skills to practice as entry-level athletic trainers. Athletic training educational reform in 2004 professionalized the preparation of athletic trainers. Since the reform, students must graduate from an accredited undergraduate ATEP to be eligible to sit for the Board of Certification examination. This examination acts as the gatekeeper to professional practice since one must pass the exam to practice as an AT. As of November 22, 2011,

343 undergraduate ATEPs were accredited in the United States (Commission on Accreditation of Athletic Training Education, 2011).

Although athletic training student retention issues have recently gained attention in the literature (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009; Herzog et al., 2008), attrition has yet to be identified as a problem for athletic training education. It is therefore important to understand the current state of retention in ATEPs. Although the present rate of athletic training student retention is unknown as well as the current opinions of program directors, previous work has investigated retention rates and program director perceptions of attrition prior to athletic training educational reform. However, the results of these studies are difficult to translate to the current state of athletic training education because of the vast program expansion that followed educational reform.

In 2002, researchers examined the application rates and retention rates of 159 accredited athletic training education programs that used a secondary admissions process (Herzog, 2002). The study found that only 50.7% of students who declared athletic training or sports medicine as their major before the secondary admissions process decided to apply to the ATEP. Out of the students who did decide to apply to the ATEP and were admitted, 89% graduated in four years or less. Although the retention rate reported in this study is quite high, this study has several limitations warranting further research. The range for retention rates was quite wide (67-100%) illustrating the fact that while some programs are exemplary, others may have room for improvement. In addition, it is important to note that in 2002 only 159 accredited undergraduate athletic training programs existed. Since the change requiring graduation from an accredited

ATEP to gain entrance into the athletic training profession in 2004, the number of accredited programs has more than doubled to the current number of 343 (Commission on Accreditation of Athletic Training Education, 2011). Well-established programs had better retention rates than younger programs based on a negative correlation between year of initial accreditation and student retention rate (Herzog, 2002). The authors hypothesized that the more mature programs found solutions to programmatic problems and learned to promote their strengths thereby improving retention rates. The educational reform in athletic training caused an increase in the number of younger programs making it reasonable to believe attrition is more of a problem now than it was in 2002. The increase in the number of programs also reduces the generalizability of the results to all current undergraduate programs. Another potential limitation of this research is the potential for response bias. Program directors of successful programs may have been more willing to participate in the study as those with lower retention rates may not want a low retention rate to be associated with their program (although results were kept confidential).

Only one previous study sought retention and attrition data from program directors of ATEPs (Carr & Vanic, 2000). Programs at institutions with higher enrollment had a larger amount of athletic training students. Similarly, programs at state institutions and institutions with lower tuition costs had larger athletic training class sizes. The participants, 25 program directors, stated that most students left the program in the first two semesters after formal acceptance into their ATEP. In addition, the majority of participants confirmed that administrators had not identified the athletic training student retention rate at their institution as a problem. The authors concluded that larger

programs are not as concerned with athletic training student attrition as smaller programs because they have a larger number of available athletic training students (Carr & Vanic, 2000). The sample size of this study was small (n=25) limiting generalizability. Also, similar to previous work (Herzog, 2002), the number of programs has dramatically increased since this study sought the opinions of program directors due to athletic training educational reform. The authors concluded their study by recommending additional research with a larger sample size as more extensive additional research may help program directors draw high achieving students to their program (Carr & Vanic, 2000).

Based on the results of the two studies that have been completed evaluating athletic training student retention, additional research must be undertaken before the current state of athletic training student retention can be understood. Specifically, it needs to be determined if athletic training student attrition is a problem to program directors or college administrators at this time. The current retention rate is also unknown for ATEPs nationwide. The overall present condition of athletic training student attrition should be further understood before research continues to investigate athletic training student retention factors.

Athletic Training Student Attrition May Be Problematic

Although the current state of athletic training student retention remains unclear, several possibilities exist to believe attrition in athletic training education programs occurs and is problematic. As mentioned earlier, students enrolled in ATEPs have both didactic and clinical education obligations. Students are required to be involved in clinical education for a minimum of two years (Commission on Accreditation of Athletic

Training Education, 2008). Hourly requirements do not exist within accreditation; however, programs may use hour requirements as part of a course tied to clinical education expectations. It is noteworthy that accreditation standards state student clinical education experiences should be consistent in length to work-study requirements and students should receive days away from clinical education similar to other campus activities (other academic programs and/or athletics) (Commission on Accreditation of Athletic Training Education, 2008). During clinical education, students have the opportunity to put didactic education to use and practice new clinical proficiencies under the supervision of a clinical instructor (National Athletic Trainers' Association Education Council, 2006).

Unfortunately, athletic training students in the professional phase of an ATEP spend 59% of their clinical education time unengaged (Miller & Berry, 2002), possibly because the clinical instructor is engaged in his or her own responsibilities to patient care and does not have sufficient time to spend teaching students (Weidner & Henning, 2002). When students are involved, they often perform monotonous and menial daily activities (filling water coolers, cleaning, etc.) (Herzog, 2004). Younger students may not know where they fit into the daily health care administration process, making them passive bystanders while their clinical instructor provides all the care for athletes or patients (Neill et al., 1998). Regrettably, first- and second-year students may drop out of the ATEP before they feel comfortable taking on a bigger role in their clinical education (Toburen, 2002) since the majority of allied health students who drop out do so after an average of 2.5 semesters (Hedl, 1987).

Students also may decide to leave an ATEP because of the stress involved in completing an undergraduate degree in athletic training. They devote a tremendous amount of time to clinical education and the rigors of coursework (Stilger, Etzel, & Lantz, 2001). Previous research found the majority of stress athletic training students encounter is the result of academics and financial concerns (Stilger et al., 2001). Further, program directors are required to publish criteria students must attain to remain enrolled in an ATEP (Commission on Accreditation of Athletic Training Education, 2008). Program administrators typically place students on probation for a semester if they do not meet these criteria. Program directors may also dismiss students from the ATEP if their performance does not improve. These mandated retention criteria are a potential reason for a large portion of upper class athletic training student attrition.

In many cases, athletic training students do not receive compensation for time spent engaged in clinical education. Because clinical education takes up a large amount of a student's time, many of them have difficulty securing paid employment (Racchini, 2005) which may increase the financial stress from tuition and educational expenses (Stilger et al., 2001). The time restraints due to clinical education may also cut into commitments to extracurricular activities students would like to pursue. Activities such as athletics, sororities or fraternities, clubs, intramural sports, and the fine arts become difficult to engage in because of a lack of time on the student's part. Such extracurricular activities assist students in socially integrating into the institution and persisting to degree completion (Tinto, 1993, 1997).

Potential Techniques to Improve Athletic Training Student Retention

Recently, the number of ATEPs has dramatically increased due to the reform of athletic training education in 2004. Recruiting and retaining students is becoming more important to athletic training faculty because they have more options from which to choose (Mensch & Mitchell, 2008). Two themes of programmatic variables emerge from the literature suggesting how student retention in AT programs can be improved: effective socialization of AT students and effective motivation of AT students (see Figure 1, Factors Leading to Successful Athletic Training Student Persistence).

Effective socialization involves teaching students the particular skills, values, attitudes, and behaviors associated with a profession (Klossner, 2008; Pitney, 2002). Typically students become interested in AT programs based on their perception of the roles, skills, and job requirements graduates possess, making it important for potential recruits to be educated properly about the profession (Mensch & Mitchell, 2008). Students are attracted to ATEPs because of the association with sports and athletes, the fact that they like to help people, and they enjoy feeling like a part of a team. A positive relationship with a high school AT, a history of injury while participating in athletics, or taking an athletic training class in high school facilitated the choice to study athletic training. Finally, the participants felt time constraints and an interest in a different career were barriers to choosing to study athletic training (Mensch & Mitchell, 2008).

Early socialization should include giving potential recruits a realistic understanding of the profession and accurate information about careers and graduate school possibilities. These practices will allow recruits to make an informed decision to enter an ATEP for the right reasons (Mensch & Mitchell, 2008). Legislation mandating

all high schools to have ATs may help improve exposure to the profession for potential athletic training recruits (Mensch & Mitchell, 2008). It is important to note, however, that new high school positions must have appropriate expectations to allow the AT to be an effective professional role model for potential recruits.

Providing students with mentoring opportunities may also help ATEPs improve retention rates. Peer support groups were found to influence the decision to persist in athletic training for both seniors (Dodge, Mitchell, et al., 2009) and recent graduates (Bowman & Dodge, 2011). Perhaps matching first-year students planning to apply to the ATEP with upper class athletic training students can facilitate peer support for these recruits. First-year recruits may feel more comfortable asking peers for advice and these interactions may help create a friendly learning environment. Other examples of potential techniques to instill a supportive learning environment include providing students with an orientation session to the ATEP (Racchini, 2005) or offering learning communities or living communities. Learning communities involve having the same students in two separate courses where the curriculum is coordinated around a common theme. Learning communities are commonly offered for first- and second-year students, providing a positive experience early in their college careers (Tinto & Goodsell-Love, 1993), enhancing student satisfaction with college, and engaging students socially and academically (Zhao & Kuh, 2004). Research shows arranging students with common academic interests together in a wing of a residence hall improves academic performance (Stassen, 2003). These living-learning communities promote academic interactions between students outside the classroom improving retention, academic success, and overall campus integration.

Previous research identified proper academic integration of students as an important factor for increasing the number of applicants to an ATEP (Herzog et al., 2008) and improving retention of athletic training students (Dodge, Mitchell, et al., 2009). A student's academic performance impacts their decision on whether to apply to an ATEP or not (Herzog et al., 2008) probably because of the student's perceived satisfaction with their educational experience. Obtaining a satisfactory grade point average and developing intellectually factors into senior-level athletic training students' decisions on whether to persist or not (Dodge, Mitchell, et al., 2009). Specifically, persisters were perceived to be learning more, engaged in interactions with faculty more frequently, and overall were more satisfied with the academic portion of their ATEP. Also, recent graduates decided to stay in their ATEP due to positive interactions with faculty (Bowman & Dodge, 2011). These positive interactions tend to be less formal, facilitate student ambition to learn on his/her own (Shelton, 2003), and promote faculty learning (Salinitri, 2005). Other potential ways of improving the academic integration of students include encouraging active learning and critical thinking skills in the classroom (Racchini, 2005), providing tutoring for difficult classes, and the faculty being available for student advising.

Proper clinical socialization assists students in finding their role in the athletic training facility while providing them with learning experiences (Dodge, Mitchell, et al., 2009). Attempts to engage students in the daily operations of an athletic training facility early on in their clinical experiences may help give students a sense of belonging and improve retention rates among first- and second-year students. Clinical instructors should make every effort to involve students in all aspects of athletic training services

while minimizing time spent on mundane activities and maintaining proper care for athletes and/or patients.

Athletic training faculty and staff must become flexible with students' time to ensure they will not abandon the major before they become interested in the core coursework (Racchini, 2005). Student integration into the institution both socially and intellectually alters persistence decisions (Tinto, 1993, 1997); therefore, athletic training students need to become integrated into the curriculum and their clinical education while finding time to engage with other students, faculty, and staff socially. Clinical education expectations should be appropriate to allow students sufficient free time to engage in extracurricular activities (Dodge, Walker, & Laursen, 2009) such as intramural or club sports, Greek life, fine arts, student government, or other activities.

Researchers have studied senior-level athletic training students to try to understand reasons for their successful matriculation compared to other students who left their ATEP (Dodge, Mitchell, et al., 2009). Student motivation to complete the program was the number one factor leading to persistence. To keep motivation high, students must see progress while gaining confidence in their skills throughout their time in the ATEP. Academic and clinical goal-setting can improve student retention (Racchini, 2005) by making student progress appear more tangible. Some students may not believe they belong in the program because of the rigorous course work and time requirements of clinical education. These students may need to receive a sense of validation from faculty, staff, approved clinical instructors, and fellow classmates to believe they can be successful and that they belong in the program (Rendon, 1994). Similarly, recognizing successful students and promoting the ATEP across campus can give students a

confirmation that they are an important part of the program and that they belong (Herzog et al., 2008). Faculty members who encourage students and make the learning atmosphere exciting will retain the largest number of successful young professionals (Dodge, Mitchell, et al., 2009).

Previous research found that providing engaging clinical experiences with appropriate student autonomy is an important persistence factor for recent graduates of ATEPs (Bowman & Dodge, 2011). Providing students with appropriate autonomy may give them a sense of ownership over their experiences, allowing them to become more committed to their ATEPs. Providing proper socialization into clinical experiences also may help improve the motivation of students by providing them with an environment where they actively learn by performing appropriate tasks. If students adequately integrate into the program and enjoy their experiences, they may be less likely to depart. Students who devote large amounts of time and effort to the athletic training program as required by clinical education may feel more attached and dedicated to the program if their experiences are positive. Therefore, if students enjoy the large amount of time that they spend in athletic training, they may be more likely to persist to graduation (Bowman & Dodge, 2011; Racchini, 2005).

Another important factor to assist in motivating students may be providing students with individual attention. Recent graduates felt the small class sizes and individual attention they received facilitated their decision to persist in the program (Bowman & Dodge, 2011). The opportunity for recent graduates to engage in one-on-one time with faculty made the program feel close-knit regardless of the size of the institution. Providing individual attention to students may help them integrate

academically into the program and institution, improving their chances of persistence (Tinto, 1993, 1997). Further, getting to know first-year college students on a personal level through informal encounters may facilitate the transition to college life (Racchini, 2005). It is important to note, however, that athletic training faculty workloads are often arduous because of the demands of balancing teaching, research, service, and the administrative duties the Commission on Accreditation of Athletic Training Education requires (Dewald & Walsh, 2009). Faculty cannot lose sight of the fact that meeting student needs should be their top priority (Racchini, 2005).

Promoting coherence within an ATEP may help improve student retention by properly socializing students (Howey, 1996). As discussed previously, effective socialization can help students make an informed decision to enter an ATEP based on a proper understanding of the profession (Mensch & Mitchell, 2008). Program coherence can be encouraged through several avenues, including the creation of a clear mission statement and goals, appropriate curricular decision-making, effective communication, and appropriately evaluating the ATEP (Dodge, Walker, et al., 2009). The program mission and goals should reflect all aspects of the program as they formulate the framework for the ATEP. The athletic training curriculum should contain appropriate course sequencing, lucid course objectives, and engaging clinical education experiences with appropriate autonomy to help keep student motivation high. Communication between faculty, staff, and approved clinical instructors can build a learning environment in which improving student understanding of key concepts occurs by linking clinical and didactic information together. Formative evaluation allows administrators to discover

and correct ATEP shortcomings allowing growth and better alignment with the mission and goals.

Professional modeling of athletic training careers by faculty, staff, and approved clinical instructors can also motivate students. High school ATs play a vital role in the initial socialization of potential high school student recruits as they are often the first exposure to the profession (Mensch & Mitchell, 2008). The socialization process continues once the student has entered college as students view clinical instructors as role models and mentors (Pitney & Ehlers, 2004; Ryan & Brewer, 1997). Students enjoy clinical education as it allows them to know what it will be like to obtain a career in athletic training (Bowman & Dodge, 2011). ATs who have the opportunity to influence athletic training students must act in a way that will allow them to be positive role models while giving students a realistic depiction of what a career in athletic training entails.

Summary

Investigators have completed substantial research to understand student departure in higher education and health care education programs. Recently, retention in athletic training education programs has gained attention in the literature as the number of programs has increased dramatically, giving students a larger number of programs from which to choose (Mensch & Mitchell, 2008). Although it remains unknown if AT student retention is problematic, several possibilities exist for why students may leave ATEPs including the demanding nature of the program and the time required to fulfill clinical education expectations. Effectively socializing and adequately motivating athletic training students positively alters their persistence decisions (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009; Mensch & Mitchell, 2008). However, the

perceptions of ATEP directors regarding athletic training student retention remain unknown. No recent research exists examining if program directors think retention is a problem or an inevitable piece of the AT educational process. Exploring athletic training student retention from the perspective of program directors will give a more robust understanding of the phenomenon.

THEORETICAL FRAMEWORK

The Student Integration Model (Tinto, 1975, 1993, 1997) describes how a student must become involved in the institution both socially and intellectually to thrive (see Figure 2). The model states that when students integrate into the institution, retention is more likely to occur. Integration is defined as the student becoming involved in the campus community and the feeling that he or she belongs in that community (Tinto, 1975, 1993, 1997) or the amount of energy a student dedicates to their academic experiences, both physically and mentally (Astin, 1984). The student must have similar abilities, goals, and values as the campus community to become integrated (Shelton, 2003). Two factors in particular must align for students to thrive: background traits, such as financial resources or family educational level, and motivation to successfully graduate. These factors will assist in solidifying the student's commitment to their educational goals and their commitment to the institution (Tinto, 1975, 1993, 1997). When these factors are not aligned, students tend to become disintegrated both socially and academically, leading to attrition due to the cost of college outweighing the benefits to the student (Tinto, 1975, 1993, 1997).

A Student Integration Model specific to athletic training has been created for analyzing athletic training student retention (Dodge, 2006). In this athletic training model, modifications include adding pre-college experience with athletic training,

clinical integration, and motivation (see Figure 3) to allow for better representation of athletic training specific factors affecting attrition decisions. Pre-college experience with athletic training, such as shadowing a high school AT, was added since this type of experience impacts the prospective student's perception of the profession and athletic training education. Clinical integration was added because athletic training education is divided between didactic and clinical education making the model more individualized to ATEP requirements. The clinical integration component is based on the interactions with clinical instructors, peers, athletes, and coaches; the perception of their role within their clinical experiences; and the learning and confidence that is built during clinical experiences. Finally, motivation was added due to the academic rigor and time commitment necessary for clinical education requirements (Dodge, 2006).

The current study uses the modified Student Integration Model to analyze student retention in ATEPs. The modified Student Integration Model (Dodge, 2006) is specific to ATEPs because it incorporates factors from both didactic and clinical education making its use appropriate. The athletic training specific Student Integration Model constitutes the backdrop for the creation of the measurement tool in this study. Athletic training program directors will be asked questions based on whether the aspects the model proposes are important factors in a student's decision to persist or leave an ATEP.

CHAPTER 3

METHODOLOGY

This chapter presents the mixed methods methodology used to further understand the perceptions of ATEP directors about athletic training student retention. The study was quantitative-dominant, with survey responses as the primary data source and a smaller qualitative component, that included follow-up interviews with randomly selected participants. Using mixed methods permitted triangulation of the data and results, as the findings of the quantitative data supported and helped give depth to the conclusions of the qualitative data. The quantitative data allowed me to gather the perceptions of a large range of program directors and make comparisons between opinions based on several demographic factors of the host institution, the ATEP, and the program director. The qualitative data provided rich description while keeping the data collection dynamic (Pitney & Parker, 2001) allowing the capture of specific detail regarding the opinions of program directors without limiting participants to specific predetermined answer choices. Both sets of data were crucial to providing a robust account of the current state of student retention in athletic training through the eyes of ATEP directors. The chapter begins with the research questions and purpose of the study followed by the rationale for the appropriateness of using such an approach. I also describe the population, data collection methods, data analysis techniques, and the limitations of this research study.

Purpose & Research Questions

The purpose of the study was to explore the perceptions of athletic training program directors regarding athletic training student retention and attrition. I asked athletic training program directors from all 343 accredited undergraduate ATEPs in the United States to complete an electronic survey. My goal was to explore the following research questions:

1. Is athletic training student retention a problem?
2. What factors might be associated with athletic training student retention or attrition?

Answering the above questions extends the current literature by providing a more robust picture of the issues involved in retaining undergraduate athletic training students. No recent studies have examined the perceptions of ATEP directors about retention of athletic training students. I believe the results will help shape the decisions athletic training administrators make by providing insight on the factors that may influence student persistence decisions.

Population

I asked program directors from all 343 accredited undergraduate ATEPs in the United States to volunteer to participate in the study by completing a survey. I chose all program directors nationwide to allow for institutional and geographic diversity of the data while limiting coverage and sample error (Pitney & Parker, 2001). Using a census also allowed for consideration of a broad range of factors when answering research question 2. Using a sample may have limited the factors available as it would be difficult to stratify for multiple variables since the population includes program directors at only

343 institutions. I emailed the population a hyperlink to the electronic survey, asked them to provide informed consent, and invited them to complete the survey. I gathered the names and email addresses of the program directors using the Commission on Accreditation of Athletic Training Education's website (Commission on Accreditation of Athletic Training Education, 2011). Program directors are easily identifiable as only one individual holds this position and institutions are required to notify the Commission on Accreditation of Athletic Training Education prior to any change in leadership. Further, program directors are accountable for the day-to-day operations of the ATEP including didactic and clinical education. Ultimately, ATEP directors are responsible for organization, administration, curricular planning and development, financial decisions, supervision, evaluation, and the overall operation of the program based on standard B1.2 of the Commission on Accreditation of Athletic Training Education (Commission on Accreditation of Athletic Training Education, 2008). Based on this accreditation standard, the program director is the individual with the most authority to provide an environment for students to thrive although they may be limited by the decisions of other college administrators concerning resources, both financial and personnel. I was particularly interested in the perceptions of program directors because it remains unknown what aspects of athletic training education program directors believe support or challenge students. It is also unknown if program directors perceive AT student attrition as a problem and if so, what they do to improve student persistence. I enticed the sample to complete the survey and reduce nonresponse error by entering those who completed the survey into a drawing to win a \$50 Amazon gift card (Rose, Sidle, & Griffith, 2007).

Instrumentation

I used a three-part internet based survey, the Athletic Training Student Retention Survey for Program Directors, which I carefully designed (see Appendix A). I chose to use a survey because I was interested in understanding the perceptions and opinions of a particular group (Salant & Dillman, 1994), athletic training program directors. The primary delivery method for the survey was the internet because reliable email addresses were available for my population, an immediate response was not required, and it allowed me to reduce costs (Salant & Dillman, 1994). Also, internet-based surveys can achieve robust response rates compared to other survey methods (e.g., mail) (Baruch & Holtom, 2008).

The survey began with an Institutional Review Board approved consent form followed by a brief factual section that asked program directors straightforward questions about the institution and their program including the athletic affiliation and number of students enrolled in the ATEP. Other questions included within this section sought demographics specific to the program director such as how long they had been working in their current role at their current institution. I evaluated the effects of various informational and demographic variables on the self-reported retention rate as they may contribute to student attrition decisions (Carr & Vanic, 2000).

The second portion of the survey included five point Likert scale questions derived from previous research on athletic training student retention (Dodge, Mitchell, et al., 2009; Herzog et al., 2008) to gather the perceptions of ATEP directors about athletic training student retention. The survey tool for the current study contained questions based on the theoretical model derived from the current literature. I used data from the

Likert scale questions to answer the second research question by providing insight into the factors program directors believe alter persistence decisions of AT students.

The third part of the survey contained several open-ended questions to allow for flexible and dynamic data collection while capturing fuller description (Pitney & Parker, 2001). I asked a series of questions about the perceptions of program directors regarding AT student retention, including asking them why students typically persist in their ATEP and why students typically leave their ATEP. At the end of the third section of the survey, I asked participants if they would be willing to participate in a follow-up telephone interview lasting approximately 30 minutes. The purpose of the telephone interview was to gather greater depth into the perceptions of the program directors leading to a deeper understanding of AT student retention and attrition issues. Another goal of the interviews was to improve the interpretation of the quantitative findings and allow further triangulation of the results. I iteratively examined the follow-up telephone interview data for saturation and terminated data collection when I found no new information.

To reduce measurement error (Salant & Dillman, 1994) and provide construct validity, the survey and follow-up interview questions were pilot tested through three separate processes. First, three athletic training faculty members completed tape-recorded think-aloud interviews while completing the survey and responding to the interview questions. Think-aloud interviews have been described previously in survey development (Sudman, Bradburn, & Schwartz, 1996) as a way to help the researcher understand how questions are perceived by different participants. Through this procedure, I asked the participants to verbalize their thoughts as they completed the

survey and answered the interview questions (Ericsson & Simon, 1993). Following the think-aloud pilot interviews, I modified questions to improve consistency of participant interpretation and added questions based on recommendations. Afterwards, four additional athletic training faculty members evaluated the survey and interview questions for content and clarity (Creswell, 2005) individually. Feedback including suggestions for improvement were sought during this piloting phase to give face and content validity to the instrument (Turocy, 2002). After revision, a panel of four experts reviewed the instrument in a focus group to further attest to face, content, and construct validity (Turocy, 2002). I identified experts as researchers who have published peer-reviewed manuscripts on the topic of athletic training student retention or socialization issues. The focus group review took place at the National Athletic Trainers' Association Annual Meeting in New Orleans, Louisiana in June 2011. I gathered further comments for improvements from the experts after the focus group to improve content and clarity and obtained confirmation of the survey's comprehensiveness from each expert before finalizing the survey instrument. I excluded results from pilot tests in the final analysis as any participants who completed a pilot and were within the study population were asked to complete the final survey version.

Data Collection Procedures

I asked program directors for all 343 Commission on Accreditation of Athletic Training Education accredited undergraduate ATEPs in the United States to complete the survey. I obtained their email addresses from the Commission on Accreditation of Athletic Training Education website (Commission on Accreditation of Athletic Training Education, 2011) and used survey techniques similar to those described previously to

collect data (Salant & Dillman, 1994). First, I sent a personalized email in advance of the survey to each program director explaining the purpose of the study and notifying each program director that they would receive an email with a link to the survey. One week later, I sent an email asking each program director to volunteer to participate in the study by clicking on a link and completing the survey. I used QuestionPro™ Survey Software (QuestionPro Inc., Seattle, WA) to deliver the survey electronically; the first page of the survey was an Institutional Review Board approved consent form. After two weeks, I sent a follow-up email requesting a response from those who had not yet completed the survey followed one week later by a third request for participation. One week following the third survey participation request, I called the remaining program directors to ask them personally for their participation. I terminated data collection one week after making the personalized phone calls as no new completed surveys had been received for two days. I randomly selected one participant who successfully completed the survey to award the \$50 Amazon gift card to after I terminated data collection.

Data Analysis

I calculated descriptive statistics for the institutions represented, the ATEPs represented, and the participants who completed the survey using IBM's Statistical Package for the Social Sciences (version 19, IBM Inc., Somers, NY). I calculated descriptive statistics for the Likert scale data with SPSS by assigning numerical values to the response categories (e.g., Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5).

I analyzed the responses to the question, do you think retention of athletic training students at all programs nationwide is currently a problem facing athletic training

education, in order to answer research question 1. To answer research question 2, I first analyzed the correlation matrix between the self-reported retention rate and various variables. Afterwards, I used variables with significant correlations as independent variables in a multiple regression equation to determine what variables could help predict self-reported retention rates of the ATEPs for which the program directors responded. Variables I considered included institutional information, ATEP information, and program director demographics.

I used exploratory factor analysis to identify constructs from the second section of the survey (Likert scale data). I performed principal axis factor extraction and considered both varimax and oblique rotations to uncover simple structure. I used both empirical and theoretical evidence to decide on the number of factors to retain. I relied on the scree test (Cattell, 1966) but also examined the theoretical interpretability of the resulting factors and the amount of variance accounted for by each factor. I measured the reliability of the constructs I identified using the average inter-item correlation between the survey questions by calculating Cronbach's alpha (Creswell, 2005). The constructs identified through the exploratory factor analysis were also considered for inclusion in the multiple regression equation.

I analyzed the qualitative data (i.e., answers to open-ended survey questions and follow-up telephone interview data) using open, axial, and selective coding (Strauss & Corbin, 1990). Open coding involves breaking data into distinct parts and noting similarities and differences between them. The researcher also begins asking questions about the phenomenon being studied based on the data. I made connections between the data and formed categories and subcategories during axial coding. Finally, I developed

main categories through selective coding by relating categories to each other and validating the relationship between them. Analyzing data using open, axial, and selective coding was appropriate for this study as the goal was to explain a phenomenon and the behavior of a selected group (Strauss & Corbin, 1994). The main purpose of this research was to explain the factors program directors perceive as influential in athletic training student decisions to persist in or depart from an ATEP.

I maintained trustworthiness of the qualitative data (i.e., the authenticity of the data and conclusions) (Pitney & Parker, 2001) through several different strategies. Two independent researchers trained in qualitative methods independently analyzed the data. One of the researchers was the lead investigator and the other was a colleague who agreed to assist with the research project. After coding the data, the lead author shared the coding scheme with the co-coder who then independently reviewed the data using the same analysis procedure. We ensured the inter-rater reliability by negotiating over the coding scheme and final categories until 100% agreement was achieved. In addition, I completed member checks with several randomly selected participants to confirm the accuracy of the results. Finally, a third athletic training researcher educated in qualitative methods with no stake in the current study agreed to perform a peer debrief. The peer debrief process involved analyzing the coding structure and validating the final themes.

Limitations

It is important to note some limitations of the current study. First is the potential for survey bias. Some program directors may have been more likely to complete the survey than others resulting in nonresponse error. Although I kept the data confidential, program directors of programs with higher retention rates may have been more likely to

participate than program directors of programs with lower retention rates. It is also possible that program directors were not forthcoming regarding the areas for improvement of their ATEP because the research team could have identified them. Since I was interested in perceptions and opinions of program directors, the questions in the survey have the potential for measurement error as personal attitudes and beliefs are often fluid and changing (Salant & Dillman, 1994). However, in order to minimize measurement error, I developed the survey carefully to include specific language and avoid vague questions. The survey data were derived from self-reported responses of the participants; therefore, the accuracy of the results was limited by the truthfulness of the responses of the participants (Kerlinger & Lee, 2000) who may have given socially acceptable answers based on the information that was of interest. Variations in interpretations of the questions by the program directors were also possible, potentially altering responses. However, the tape-recorded think-aloud pilot interviews should have reduced the possibility of interpretation variability. I also only asked for the opinions of one professional from each institution, although they have ultimate responsibility for the ATEP. Finally, the modified Student Integration Model for athletic training has not been established in the literature as a theoretical framework. Therefore, more research is warranted to support or refute the framework as appropriate for studying athletic training student retention.

CHAPTER 4

RESULTS OF THE QUANTITATIVE DATA

The purpose of this study was to explore the perceptions of athletic training program directors on athletic training student persistence and departure decisions. In chapter 1, I presented the purpose and importance of answering the research questions. I reviewed the salient literature related to the research questions and presented the theoretical framework in chapter 2. Chapter 3 conveys the methodology used to answer the research questions. This chapter begins with an overview of athletic training education followed by the results of the survey including background information on the institutions, ATEPs, and program directors; the representativeness of the respondents; and how I developed the constructs from the Likert scale data. I also provide information to answer the two research questions.

Students enrolled in an ATEP are required to complete didactic education and a minimum of two academic years of clinical education (Commission on Accreditation of Athletic Training Education, 2008) to provide them with the knowledge and skills to function as entry-level health care professionals. The education is centered around the six domains of prevention; recognition, evaluation and assessment; immediate care, treatment, rehabilitation, and reconditioning; organization and administration; and professional development (Board of Certification, 2006). The majority of clinical education must be completed under the direct supervision of an approved clinical instructor while permitting students opportunities to learn and practice athletic training

skills. Clinical education allows for the development of proficiency and appropriate professional behavior (Commission on Accreditation of Athletic Training Education, 2008) while socializing students to the roles and responsibilities of the athletic training profession (Klossner, 2008).

Response Rate & Background Information

ATEP directors are uniquely positioned to be able to offer information about ATEP programs. To understand how ATEPs function, I surveyed all athletic directors of ATEP programs in the country. A total of 177 program directors completed my survey for a response rate of 51.6% (177/343). The response is representative of the population for several demographic variables (Carr & Volberding, 2009; Commission on Accreditation of Athletic Training Education, 2011; The Carnegie Foundation for the Advancement of Teaching). However, it is important to note that although the respondents were representative of the accredited population in terms of Carnegie classification, type (public or private), and athletic affiliation, it is possible they are not representative based on student retention rates. I provide a detailed description of the representativeness of the sample in a separate section below. Background information on the institutional affiliations of each ATEP is illustrated in Table 1 while important factual information for the ATEPs can be seen in Tables 2 and 3 below.

Table 1

Frequencies for institutional information of ATEP respondents

Variable	N	Percentage
Carnegie Classification		
Research	52	29.4
Master's	84	47.5
Baccalaureate	41	23.2
Enrollment		
Up to 1000	11	6.4
1000 – 3000	47	26.6
3000 – 5000	21	11.9
5000 – 10000	24	13.6
10000 – 20000	37	20.9
20000 – 30000	23	13.0
30000 or greater	13	7.3
Missing	1	0.6
Institutional Type		
Public	89	50.3
Private Non-Religious	19	10.7
Private Religious	63	35.6
Private for Profit	2	1.1
Other	1	0.6
Missing	3	1.7
Athletic Affiliation		
NCAA Division I	75	42.4
NCAA Division II	43	24.3
NCAA Division III	45	25.4
NAIA	14	7.9

The majority of respondents represented ATEPs at public Master's institutions with small enrollments (1000-3000 students). The athletic affiliations of the sports sponsored by the institution were predominantly National Collegiate Athletic Association (NCAA) Division I.

Table 2

Frequencies for ATEP information

Variable	N	Percentage
Formal Admittance to ATEP		
Before college coursework	13	7.3
After 1 semester of coursework	20	11.3
After 2 semester of coursework	91	51.4
After 3 semester of coursework	26	14.7
After 4 semester of coursework	25	14.1
Other	1	0.6
Missing	1	0.6
Minimum Grade or GPA Requirement to Maintain Enrollment in ATEP		
Yes	174	98.3
No	2	1.1
Missing	1	0.6
Clinical Education Hour Requirement		
Yes	125	70.6
No	49	27.7
Missing	3	1.7

As Table 2 illustrates, most programs selected students after they completed two semesters of coursework, required students to meet certain academic standards, and required them to complete a certain number of hours engaged in clinical education while enrolled in the professional phase of the ATEP.

Table 3

Descriptive statistics for ATEP background information

Variable	Mean (SD)	Median	Range
Number of years accredited	10.7 (4.0)	9	2-18
Student applications to ATEP	27.8 (34.8)	17	1-300
Student acceptances to ATEP	16.0 (13.9)	12	1-100
Observation hours before apply	57.2 (49.1)	50	0-250
Number enrolled in ATEP	36.3 (23.0)	30	3-145
Academic years of clinical education	2.8 (0.6)	3	0-6
Clinical hours required for graduation	851.3 (347.0)	900	0-1590
Retention Rate	81.0 (17.9)	87.5	9-100

Table 3 shows the descriptive statistics for some key background information on the ATEPs represented. The ATEPs had been accredited for an average of 10.7 years based on the accreditation date on the Commission on Accreditation of Athletic Training Education website (Commission on Accreditation of Athletic Training Education, 2011). Program directors reported having an average of 27.8 students applying to their ATEP annually after completing an average of 57.2 clinical observation hours, but only accepting 16.0 students per year. Accreditation standards state that a competitive admissions process must be part of the program admission criteria (Commission on Accreditation of Athletic Training Education, 2008). The fact that ATEPs are required to have a competitive admissions process helps to explain the difference between those who apply and those who are accepted. Participants also reported having an average of 36.3 students enrolled in the professional phase of the ATEP which is comprised of 2.8 years of clinical education experiences on average and requiring the completion of an average of 851.3 hours engaged in clinical education before graduation. Program directors reported an average ATEP retention rate of 81%.

It is important to note that the median self-reported retention rate I obtained was 87.5%. The average self-reported retention rate was 81% although the standard deviation was high (17.9%). Previous research (Herzog, 2002) identified the retention rate at 89% for ATEPs nationwide. It is interesting that the average rate in the current study is almost 8 percentage points lower than the previously identified retention rate. I expected the retention rate to decrease since the previous study because there has been a dramatic increase in programs since 2002. The expansion of AT education has caused an increase in the amount of younger programs which were found to struggle with retention in previous research (Herzog, 2002).

Of the program directors who responded, the average age was 43 years old although directors ranged in age from 27-64 years of age (median = 42 years). On average, program directors held their position for 8 years (median = 6 years).

Representativeness of Respondents

I obtained responses from program directors representing over half the ATEPs nationwide. The respondents of the current study compare similarly to the population of athletic training program directors nationwide (see Tables 4 and 5).

Table 4

Comparisons between respondents and ATEP population

Variable	Percentage of Respondents	Percentage of Population
Carnegie Classification		
Research	29.4	27.6
Master's	47.5	49.1
Baccalaureate	23.2	23.3
Institutional Type		
Public	50.3	52.5
Private	47.5	47.8
Other	0.6	
Missing	1.7	

The Carnegie classifications of the institutions represented in my results are quite similar to those of the actual population. The response included 29.4% Research institutions, 47.5% Master's institutions, and 23.2% Baccalaureate institutions. The actual population includes 27.6% Research institutions, 49.1% Master's institutions, and 23.3% Baccalaureate institutions (Commission on Accreditation of Athletic Training Education, 2011; The Carnegie Foundation for the Advancement of Teaching). The institutional type (public or private) represented in the responses was also similar to those of the population. I obtained responses from program directors at 89 public institutions (50.3% of respondents), 84 private institutions (47.5% of respondents), and 1 participant chose "other institution" (0.6% of respondents). Three program directors did not identify an institutional type (1.7%). The population contains 52.5% publicly-funded and 47.8% privately funded institutions (Commission on Accreditation of Athletic Training Education, 2011; The Carnegie Foundation for the Advancement of Teaching).

Table 5 illustrates responses by athletic affiliation. The responses I obtained came from program directors at NCAA Division I (42.4%), NCAA Division II (24.3%), NCAA Division III (25.4%), and NAIA (7.9%) athletic affiliations. These rates are very similar to those reported previously (39.9% NCAA Division I, 24.8% NCAA Division II, 27.7% NCAA Division III, and 7.6% NAIA (Carr & Volberding, 2009). I also obtained responses from program directors of ATEPs with an average of 2.8 academic years of clinical education compared to the average of 3.0 reported previously (Carr & Volberding, 2009). Finally, my respondents reported a median of 30 students enrolled in their ATEP which is very similar to the median of 32 reported previously (National Athletic Trainers' Association Executive Committee for Education).

Table 5

Comparison between respondents and ATEP population as per Carr & Volberding, 2009

Variable	Percentage of Respondents	Percentage Reported Previously
Athletic Affiliation		
NCAA Division I	42.4	39.9
NCAA Division II	24.3	24.8
NCAA Division III	25.4	27.7
NAIA	7.9	7.6

Development of the Constructs

I used exploratory factor analysis to develop factors or constructs from the 22 Likert scale questions from the second portion of the survey. Review of the scree plot (see Figure 4) suggested including four factors. The theoretical interpretability of the resulting factors and the amount of variance accounted for by each factor also suggested

the inclusion of four factors. These factors accounted for 45.3% of the variance in the self-reported retention rates and 37.7% of the variance in the self-reported retention rates using unrotated principal axis factoring. However, the structure matrix did not produce a clear pattern of simple structure across the four factors leading me to examine both varimax (orthogonal) and oblique (non-orthogonal) rotations. The structure matrix of the varimax rotation also did not produce a clear pattern of simple structure across the four factors. The oblique rotation, however, provided simple structure with factors that accounted for 34.1% of the total variance in self-reported retention rates. The first factor was defined by eight subsets, the second had five, seven made up the third factor, and the last factor had two subsets. I found no examples of a subset loading on two factors. I found a reliability score of 0.78 for construct one, with slightly lower reliability scores for construct two (0.65), three (0.68), and four (0.62). The correlations between the factors can be seen in Table 6.

Table 6

Correlations between factors (Pearson's R)

Factor	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1	0.24	0.54	0.21
Significance	-	0.001	<0.001	0.01
Factor 2	0.24	1	0.16	0.14
Significance	0.001	-	0.04	0.07
Factor 3	0.54	0.16	1	0.18
Significance	<0.001	0.04	-	0.02
Factor 4	0.21	0.14	0.18	1
Significance	0.01	0.07	0.02	-

The four constructs are listed in Table 7 with the alpha reliability score, factor loadings, and the survey questions that defined each.

Table 7

Questions, factor loadings, and reliability scores (Alpha score) for the variables included in each factor

Factor Name (Alpha score)	Factor Loading	Question Example
Social Engagement (0.78)	0.81	To what extent are you satisfied or dissatisfied with the ability of your ATEP to foster relationships between the students in your ATEP?
	0.79	To what extent are you satisfied or dissatisfied with the ability of your ATEP to foster relationships between the students in your ATEP and the athletic training faculty?
	0.68	To what extent are you satisfied or dissatisfied with the ability of your ATEP to foster relationships between the students in your ATEP and clinical instructors?
	0.53	What type of feedback do you receive for the didactic portion of your ATEP on your comprehensive assessment plan from the majority of your students?
	0.44	What type of feedback do you receive for the clinical portion of your ATEP on your comprehensive assessment plan from the majority of your students?
	0.41	What type of feedback do the faculty in your ATEP generally receive on teaching evaluations from the majority of athletic training students?
	0.36	What type of feedback do the ACIs in your ATEP generally receive on their evaluations from the majority athletic training students?
	0.25	To what extent are you satisfied or dissatisfied with the quality of academic advising for the students in your ATEP? Advising for the student in your ATEP?

Perceptions of Student Success (0.65)	0.75	I am concerned about the retention rate of my ATEP's students.
	0.73	The administration at my institution is concerned about the retention rate of my ATEP's students.
	0.54	The majority of students in my ATEP are confident that their initial decision to enroll in an ATEP was the right choice.
	0.39	The majority of students in my ATEP are dedicated to finishing the AT program.
	0.28	To what extent do you agree or disagree with the following statement, "The majority of the students in my ATEP are able to achieve the academic standards required to remain in my ATEP." Remain in my ATEP."
Strong role of Clinical Education (0.68)	0.71	The students in my ATEP have sufficient opportunities to practice appropriate clinical skills.
	0.65	The clinical experiences of the students in my ATEP prepare them to meet the demands of professional practice.
	0.55	To what extent are you satisfied or dissatisfied with the amount of time the students in your ATEP are engaged in clinical education?
	0.51	The students in my ATEP know what is expected of them during clinical education.
	0.40	The limitations set by CAATE for the amount of time a student can spend in clinical education allows sufficient time for students to engage in activities outside of athletic training.
	0.33	The limitations set by the CAATE for the amount of time a student can spend in clinical education allow for sufficient learning.
	0.24	To what extent do you agree or disagree with the following statement, "The majority of the students in my ATEP have sufficient time to themselves away from athletic training?"

Sufficient Resources (0.62)	0.42	My ATEP is given appropriate <u>personnel resources</u> to successfully graduate students.
	0.36	My ATEP is given appropriate <u>financial resources</u> to successfully graduate students.

I was able to identify four factors through the Likert scale data from the survey to help explain persistence and departure decisions of AT students. First, the social engagement of students helps to explain retention decisions. This factor took into account the relationships students build with their peers, faculty, approved clinical instructors, and advisors. Previous research has stressed the importance of appropriate relationship building among the various stakeholders of an ATEP (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009) supporting the results of the current study. It has been hypothesized that these relationships can improve both intellectual and social integration of students into the institution and program leading to improved student persistence (Herzog et al., 2008; Tinto, 1993, 1997).

The perception of student success factor took into account the program directors' perceptions of the ability of athletic training students to complete the requirements to earn a degree from an ATEP as student success in higher education is typically defined through persistence or retention rates. It is not surprising that this factor was able to assist in identifying self-reported retention rates. Two questions pertained to the program directors' concern over the retention rate of students in their program. Also included in this factor were questions regarding a student's decision to enter the ATEP, their dedication to the ATEP, and their ability to meet the academic requirements of the ATEP. It is reasonable that program directors are more likely to be concerned about attrition in their program and the student thoughts about the program if they report a lower retention

rate. I believe these results show that keeping persistence rates high can improve morale of the faculty and students in the program. Providing a supportive environment can also help improve persistence rates (Bowman & Dodge, 2011) potentially by reaffirming the decision to enter the program, the dedication to finishing it, and by helping students meet program expectations. Further, previous research has shown students who are motivated are more likely to complete a degree in AT (Dodge, Mitchell, et al., 2009).

The clinical education factor dealt primarily with the amount of time students are engaged in athletic training. Program directors reporting higher retention rates felt their students had sufficient time outside of athletic training but also had sufficient opportunities to learn and prepare themselves for the demands of future clinical practice. It is important to be mindful of the stress placed on athletic training students while understanding the necessity of preparing them for future practice - this can often be a difficult balancing act for program directors to manage. Perhaps encouraging students to become involved in other social and academic activities such as club sports, the fine arts, or student government will help improve student integration and lead to improved retention (Tinto, 1993). Also, clinical education experiences should allow students to apply their skills with appropriate autonomy leading to improved knowledge and confidence (Levy et al., 2009).

The final factor accounted for the resources, both personnel and financial, available to the program to successfully graduate students. Not surprisingly, program directors who reported higher levels of satisfaction with the resources available to them also reported higher retention rates. Expectations for resources that are required to support an ATEP must be made clear to institutional administrators. If administrators do

not make resources available, retention rates of ATEPs can suffer. I believe this occurs due to the decreased ability of the program director to provide a supportive environment for students to thrive. Financial resources are required to purchase and maintain equipment necessary to teach the athletic training competencies. Personnel are vital to providing students with one-on-one mentoring from faculty, staff, and approved clinical instructors. Having an appropriate number of personnel also allows students to enjoy the small class sizes and individual attention that has been shown to factor into persistence decisions of AT students (Bowman & Dodge, 2011).

Is Retention a Problem in Athletic Training Education?

In the first portion of the survey, I asked program directors if they thought retention was a problem in athletic training education. The participants responded almost evenly. Ninety-one program directors (51.4%) indicated retention is a problem while 86 (48.6%) responded that it is not a problem. In order to explore this finding further, I ran a Mann-Whitney U using the self-reported retention rate as the test variable and the response to the question of whether retention is a problem in athletic training education as the grouping variable. I used a Mann-Whitney U because the grouping variable is ordinal in nature (Hurley, Denegar, & Hertel, 2011) and the test will show whether the self-reported retention rate alters the response to whether program directors think retention is a problem in AT education. My premise is that program directors who report lower response rates will think retention is a problem while program directors who report higher response rates will think retention is not a problem. I found a strong relationship between the self-reported retention rate and the response to whether retention is a problem in AT education nationwide ($T = 2413.50$, $P < .001$) as program directors

reporting higher retention rates did not view retention as a problem in athletic training education and *vice versa*.

The results suggest approximately half of program directors do believe athletic training student retention is a problem and half do not. I found the answer to this question was related to the self-reported retention rate of the participant. As expected, program directors who reported lower retention rates thought attrition was a problem in athletic training education and those who reported higher retention rates did not think retention was a problem. Based on the data, it appears to be program-specific whether program directors struggle with retaining students.

Factors Associated with Athletic Training Student Retention

Before determining the factors associated with athletic training student retention, I evaluated the self-reported retention rates. I found the data were not normally distributed (skewness = -1.633, kurtosis = 2.847). Due to the importance of data being normally distributed in statistical inference, I computed a logit transformation for the self-reported retention rate by taking the natural log of the odds of a person graduating from each program. I examined the correlations between several demographic variables and the transformed variable for self-reported retention rate. Correlations between the various informational and demographic variables and the self-reported retention rates are illustrated in Table 8.

Table 8
Correlations between variables and self-reported retention rates

Variable	Pearson's R	P Value
Institutional Information		
Carnegie classification	0.01	0.90
Institutional type	-0.05	0.51
Enrollment of institution	0.10	0.18
Athletic affiliation	-0.08	0.29
Program Information		
Years accredited	0.24	0.001**
Timing of formal admittance to ATEP	0.40	<0.001**
Academic years of clinical education	-0.18	0.02*
Observation hours required before apply	0.23	<0.01*
Annual student applications to ATEP	-0.10	0.19
Annual student acceptances to ATEP	-0.21	0.01*
Number enrolled in ATEP	-0.03	0.72
Minimum grade requirement	0.06	0.47
Clinical hours required for graduation	0.17	0.03*
Number of clinical hours required for graduation	-0.01	0.96
Program Director Demographics		
Program director experience	0.19	0.01*
Program director age	0.05	0.48

Note: * $P < .05$, ** $P \leq .001$

I noted significance for several variables of interest including the number of years the program had been accredited ($R = 0.24$, $P = 0.001$), when students are formally admitted into the ATEP ($R = 0.40$, $P < 0.001$), the number of academic years of clinical experience students obtain ($R = -0.18$, $P = 0.02$), the number of observation hours required before students can apply to the ATEP ($R = 0.23$, $P = 0.01$), the number of students admitted into the program annually ($R = -0.21$, $P = 0.01$), the number of hours of clinical education required for students to graduate ($R = 0.17$, $P = 0.03$), and the number of years the program director has been in their current position ($R = 0.19$, $P = .01$). The

first variable I included to help explain the retention rate was the number of years the program director had been in their current position. I believe stability in the programmatic leadership facilitates recruitment and retention of students because the key components of the program remain consistent. In addition, a lack of program director turnover will allow the leadership to solve curricular problems and provide students with a supportive environment and improve persistence.

Several other variables associated with the structure of the ATEP had strong relationships with the self-reported athletic training student retention rate. First, the number of years the program had been accredited helped explain retention. This finding is similar to previous work (Herzog, 2002) which found a negative correlation between the retention rate of a program and their year of initial accreditation. The result may have two implications. Similar to the consistency of the program director, an ATEP that has a long history of accreditation allows leadership to try new initiatives and curricular approaches to improve student learning (Herzog, 2002). Second, a program will reap reputational benefits from a long history of accreditation that will prove beneficial (Herzog, 2002). Well-established programs will also find ways to promote their strengths and recruit high-achieving prospective students. As I discuss in the qualitative section in the next chapter, during the telephone interviews, several program directors mentioned the positive effects of successful alumni (current jobs, graduate school placements, past internships, etc.) in motivating current students to complete the program. A program with a longer history will have a more robust list of successful graduates that may alter student enrollment and persistence decisions.

Two separate but related variables also had strong relationships with the retention rates of the ATEPs represented, when students are formally admitted into the ATEP and the number of academic years of clinical experience students obtain. Two additional related variables include the number of observation hours required before students can apply to the ATEP and the number of clinical education hours required per semester during the professional phase of the ATEP. The four variables are related to the clinical integration piece of the theoretical model (Dodge, 2006). The timing of formal admittance into the ATEP is inversely related to the number of academic years of clinical education experience in most programs. Therefore, I believe the reason these two variables both assisted in predicting AT student retention is similar. Having students enter the professional phase of the ATEP later in their college career, and therefore requiring less years of clinical education experience, was associated with higher self-reported retention rates by program directors. I believe the reason for this is the fact that students need time to decide if a program is the best fit for them. Also, as found in previous research (Mensch & Mitchell, 2008), many prospective athletic training students do not have a full and lucid understanding of the profession leading to a misunderstanding of the roles and responsibilities of an athletic trainer. A longer pre-professional phase to an ATEP may allow students to more fully understand the profession and reflect on whether a career in athletic training is right for them. If students enter an ATEP before they have adequate knowledge of the profession, they may realize athletic training is not what they expected and switch to a different academic discipline. Admitting students into an ATEP later may help reduce the number of students who enter without sufficient knowledge of the profession by providing them

with more time to make an informed decision about their future. Reducing the length of the professional phase of the ATEP also reduces the amount of time students have to change their major or drop out.

Interestingly, ATEPs with higher clinical education hour requirements per semester retain more AT students. I did not expect this finding as previous work has stressed the importance of providing students sufficient time away from athletic training (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009; Racchini, 2005). Burnout has been identified previously in athletic training students, especially during the senior year, due to the time commitment required to complete the program (Riter et al., 2008). Similarly, several common reasons for athletic training student departure reported in previous research (Stilger et al., 2001) had to do with the rigor of the ATEP. The clinical integration portion of the modified Student Integration Model (Dodge, 2006) takes into account the learning and confidence that students develop during clinical education. Perhaps programs with higher clinical education requirements have found ways to keep students engaged and excited about the field of athletic training. Likewise, programs that require a larger number of observation hours before students can apply for formal admission to the ATEP retain more students. Students who complete observation hours are typically underclass students hoping to gain a better understanding of the profession. Observation hours may help socialize students into the ATEP and provide experience to help students make an appropriate decision regarding entering the professional phase of the ATEP. These results support previous recommendations that program directors should try to make clinical education experiences challenging, exciting, and engaging (Bowman & Dodge, 2011) regardless of whether or not the students are in the

professional or pre-professional phase of the program. Providing such clinical education experiences appear to improve student dedication to the field of athletic training.

Programs that admit a lower number of students annually reported higher retention rates. This was not surprising as previous research has supported the fact that students enjoy small class sizes and the closeness of many ATEPs (Bowman & Dodge, 2011). Smaller class sizes allow faculty, staff, and clinical instructors to provide students with more individualized attention and mentoring. An increase in the individual attention students receive may give them a sense of a supportive environment leading to social integration, a key component to the Student Integration Model (Tinto, 1975, 1993, 1997).

I did expect Carnegie classification and institutional size also to be significant as previous research has shown that institutional factors such as these may alter athletic training student retention rates (Carr & Vanic, 2000). However, athletic training students do feel that ATEPs are a close-knit, family atmosphere regardless of institutional size (Bowman & Dodge, 2011) potentially explaining the lack of significant findings.

I used the seven variables that had significant correlations to the transformed retention rate as the independent variables in a multiple regression equation yielding an R^2 of 0.32 ($F_{7, 112} = 6.91, P < 0.001$). Based on this equation, 31.5% of the variation in the self-reported retention rates can be explained by the combined independent variables. The results of the regression coefficients for the independent variables can be seen in Table 9.

Table 9

Variable coefficients for the regression equation with informational and demographic variables

Variable	B	β	t	P Value
Program Information				
Years accredited	0.07	0.20	2.31	0.02*
Timing of formal admittance to ATEP	0.41	0.35	3.47	0.001**
Academic years of clinical education	0.14	0.05	0.55	0.59
Observation hours required before apply	0.01	0.09	0.99	0.33
Annual Student acceptances to ATEP	-0.03	-0.27	-3.03	<0.01*
Clinical hours required for graduation	<0.01	0.03	0.39	0.70
Program Director Demographics				
Program director experience	0.04	0.20	2.31	0.02*
Constant	-0.70		-0.67	0.51

Note: $R^2 = 0.315$, $F_{7,112} = 6.91$, $P < 0.001$

* $P < 0.05$, ** $P = 0.001$

The regression equation is significant as the combined independent variables are able to predict the self-reported retention rates. In particular, the timing of formal admittance to the professional phase of the ATEP appears to be the strongest predictor followed by the number of students admitted to the ATEP, the number of years the ATEP has been accredited, and the number of years of experience the program director has in their current position. Based on these results, the most important factor to weigh when trying to improve retention rates of athletic training students is the timing of the secondary admission as ATEPs that allow students to enter the program formally later in their college careers report higher retention rates. Perhaps this finding relates to the time undergraduate students need to find their career path. Having a later admissions process may allow students the time they need to explore other academic interests. Further,

students may be able to gather background information they need to fully understand the profession as this has been found to be problematic among prospective athletic training students (Mensch & Mitchell, 2008). The results also suggest that providing individual attention is beneficial as well as a long ATEP history and consistency in the leadership of the ATEP.

Three variables were not strong predictors of the overall retention rate although the regression equation was significant. The academic years of clinical education variable is the inverse of the timing of the formal admittance for most programs. The secondary admissions timing was the best predictor of the self-reported retention rates making this finding interesting. Perhaps some programs admit their students as incoming freshmen or during the freshman year but only require clinical education during the last two academic years of the ATEP. I believed the number of observation hours required before students can apply to the ATEP would help socialize students to the profession and reduce attrition; however the variable coefficient was not significant. The socialization process for prospective athletic training students continues to be not fully understood. Some ATEPs may socialize students appropriately with a conservative number of observation hours while others may do poorly with larger observation requirements. Finally, the coefficient for the number of clinical education hours required before students can be eligible for graduation was also not significant. I hypothesized that ATEP directors who provide engaging experiences for students while completing clinical education requirements may have better retention rates because students enjoy what they are doing leading to an increase in dedication to the ATEP. This connection does not appear to be as strong as the other variables in the equation. One potential

reason may have to do with the fact that students often spend much of their clinical education time disengaged (Miller & Berry, 2002).

In addition to analyzing the informational and demographic variables, I also examined the relationship between the four factors I identified from the Likert scale data and the transformed retention rate. The results can be seen in Table 10.

Table 10

Correlations between factors and self-reported retention rates

Variable	Pearson's R	P Value
Factors		
Factor 1 – Social engagement	0.09	0.25
Factor 2 – Perceptions of student success	0.40	<0.001**
Factor 3 – Strong role of clinical education	-0.06	0.43
Factor 4 – Sufficient resources	-0.04	0.59

Note: ** $P < 0.001$

I only found significance with the second factor pertaining to the perception of student success ($R = 0.40$, $P < .001$). This factor asked program directors about their concern over the retention rate of their ATEP and if administrators have shown anxiety over the ability of the ATEP to retain students. Also included in this section were questions pertaining to the confidence and dedication of students and the ability of the students to meet the academic requirements of the ATEP. I expected to find significance between this factor and the dependent variable. I would expect program directors who are concerned about their retention rate or who have administrators who are concerned about the ATEP's ability to retain students to report lower retention rates. Student confidence and dedication are similar to results previously found (Dodge, Mitchell, et al.,

2009) and are components to the motivation component of the modified Student Integration Model (Dodge, 2006). In order to improve motivation, students need to become confident in their knowledge and see advancement in their skills.

I also expected factors 1, 3, and 4 to be significant. The first factor pertained to the social engagement of athletic training students. I estimated this to be significant as social engagement of students is a key to the Student Integration Model (Tinto, 1975, 1993, 1997). The third factor takes into account the effect of clinical education which is a component to the modified Student Integration Model (Dodge, 2006). Clinical education experiences that are exciting and engaging have also been linked to increased student persistence (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009). Finally, the fourth factor pertained to having sufficient resources for ATEPs to properly function. I was most surprised by the lack of significance for this variable. Based on this result, having financial and personnel resources do not seem to affect retention rates of athletic training students. Perhaps one possibility for this finding is because all programs must meet a minimum threshold of equipment and personnel based on accreditation standards (Commission on Accreditation of Athletic Training Education, 2008). It is possible that the minimum standards for equipment and personnel have been set appropriately to allow ATEPs to successfully graduate students.

I ran another multiple regression equation with the seven informational and demographic variables outlined above with the addition of the composite score from the second factor identified with the exploratory factor analysis. I found an R^2 of 0.38 ($F_{8, 112} = 7.80, P < 0.001$) illustrating that 37.5% of the variance in the self-reported retention rate can be explained by the combined independent variables (informational and

demographic variables with the factor 2 composite score). The results for the variable coefficients can be seen in Table 11.

Table 11

Variable coefficients for the full regression equation

Variable	B	β	t	P Value
Program Information				
Years accredited	0.05	0.16	1.84	0.07
Timing of formal admittance to ATEP	0.35	0.30	3.05	<0.01*
Academic years of clinical education	0.11	0.05	0.48	0.63
Observation hours required before apply	0.01	0.01	1.11	0.27
Annual student acceptances to ATEP	-0.03	-0.27	-3.23	<0.01*
Clinical hours required for graduation	0.01	0.01	0.18	0.86
Program Director Demographics				
Program director experience	0.04	0.21	2.57	0.01*
Factor				
Factor 2 – Perceptions of student success	0.10	0.25	3.15	<0.01*
Constant				
	-2.26		-2.01	0.05*

Note: $R^2 = 0.375$, $F_{8, 112} = 7.80$, $P < 0.001$

* $P \leq 0.05$

The addition of the second factor improved the ability of the regression equation to explain the variance in the self-reported retention rates by 6% (31.5-37.5%). The second factor was a significant predictor along with the timing of formal admittance to the ATEP, the number of students admitted to the ATEP annually, and the experience of the program director in their current position. The second factor took into account several perceptions of athletic training student success. Questions in this section asked about the concern of the retention rate of the ATEP and if students entered the ATEP for

the right reasons and could handle the academic load. Also significant was the timing of formal admittance to the ATEP and the number of students admitted to the ATEP annually which are both under the control of the program director and can be easily modified. The number of years the program had been accredited was no longer significant in the full model suggesting the experience of the program director is more important than having a rich history of an accredited ATEP.

Results of one final regression equation with the seven significant informational and demographic variables along with all four factors can be found in Appendix B.

Summary

Based on the results of the quantitative data, I achieved an acceptable response rate (Babbie, 1990; Baruch & Holtom, 2008; Dillman, 2000; Rea & Parker, 1992; Roth & BeVier, 1998) from a representative group of respondents (Carr & Volberding, 2009; Commission on Accreditation of Athletic Training Education, 2011; The Carnegie Foundation for the Advancement of Teaching). The average retention rate reported by my participants was 81%. I used seven informational and demographic variables along with one factor I developed from the Likert scale data to predict self-reported retention rates. Specifically, the timing of the secondary admissions process, the number of students admitted into an ATEP, the experience of the program director in their current position, and the second factor pertaining to the program directors perception of student success were the strongest predictors. The next chapter presents the qualitative results that support and extend the quantitative results.

CHAPTER 5

RESULTS OF THE QUALITATIVE DATA

This chapter portrays the qualitative results where I hoped to gather the answers to several key questions. The questions most important to my investigation included why program directors thought retention was or was not a problem in athletic training education and what the common reasons for student persistence or departure were. The qualitative component of this study allowed for flexible and dynamic data collection while capturing fuller description (Pitney & Parker, 2001). The qualitative data support the quantitative data presented above by explaining the program directors' feelings about retention in athletic training education and by allowing them to self-select reasons for persistence and departure of athletic training students. Qualitative data were important to this study as they were exploratory and allowed individualized responses instead of selecting from a pre-determined list.

I obtained qualitative data from participants through two separate processes. First, the final section of the internet-based survey contained several open-ended questions for participants to respond allowing me to capture the thoughts of a wide range of program directors. I also completed tape-recorded semi-structured follow-up telephone interviews with 16 participants to clarify perceptions of athletic training student retention among program directors of athletic training education programs. The telephone interviews allowed for the gathering of rich description and detail while allowing me to ask for clarification.

In order to arrive at codes for each set of data presented below, I employed the services of a co-coder. A co-coder is essential when coding qualitative data to maintain the trustworthiness (Pitney & Parker, 2001) or credibility (D. Thomas, 2006) of the analysis of data and the interpretation of findings. Using Strauss & Corbin's method of data analyses (Strauss & Corbin, 1990), my co-coder and I reviewed the transcripts and independently coded the data. After open, axial, and selective coding procedures (Strauss & Corbin, 1990), we negotiated over the final themes that emerged from the data until we reached 100% agreement. I present the themes associated with each research question below with a discussion of the results.

Is Retention a Problem in Athletic Training Education?

During the telephone interviews, I asked participants why they thought retention was or was not a problem based on their response to the internet-based survey. I interviewed eight program directors who thought retention in athletic training education was a problem and eight who thought retention in athletic training education was not a problem leading to the collection of responses explaining why retention is a problem and why it is not. Therefore, I have organized the data into two groups: reasons retention is a problem and reasons it is not in athletic training education according to program directors. I present the themes for each response group with supporting quotes and discussion below.

Retention is a Problem in Athletic Training Education

When I asked program directors who thought retention was a problem in athletic training why they felt that way, two themes emerged from the data. Program directors believed students leave athletic training education programs for two main reasons: a lack

of information and the rigor of the program. The code list for the data can be seen in Table 12.

Table 12

Code list and frequencies for why program directors thought retention is a problem in athletic training education.

Code	Frequency
Lack of Information	8
ATEP Rigor	6
Immature Students	2
Career Concerns	1
Finances	1
Professional Behavior	1

The most common reason program directors stated they believed retention is a problem in athletic training education pertained to the lack of information students have about athletic training. One participant stated:

I think once they actually figure out what they're getting into - I don't know if we can actually call that a retention issue or more like an information issue. So that would be the reason why I would think that some of the drop-off we see is not necessarily due to the fact that we can't retain the students but more that the students aren't exactly educated about what they're getting into in the first place.

Similarly, another participant thought the lack of information altered student persistence decisions. He thought that once students understood the time associated with clinical education, they often chose to do other things. He said:

It's just students coming in not really understanding the field, not really understanding what's required. So what we see a lot, we may start out with a large number of students that come in their first semester, freshmen, but once they kinda get in and get the feel and start seeing and doing some of the observations and start really understanding what it's all about, it tends to either conflict with something they want to do socially, or just they don't want to invest the time, or

they just really didn't understand the profession. So from that standpoint, I think that is where we see most of our issues.

He went on to describe how students frequently like the sound of athletic training and declare it as their field of study. Once they get a more accurate depiction of what it takes to complete the ATEP, they often decide to do other things.

Then, the other issue that we see is I think we get a lot of students that are thinking about kinesiology/exercise science and don't know what all, they hear athletic training and again, don't understand the term and so jump into it. So I think, initially, we see it more of just a lack of understanding of what the profession and what the degree is about.

Another participant described the importance of advising students early on in order to help them make a good decision to pursue a degree in athletic training. She said:

I think it has multiple variables. One, within the education component, I think there is still some misnomers and misconceptions about what athletic training is...so that requires a lot of really good advising in the first year to help students understand what it is that they really want.

Finally, one participant noted the fact that many prospective students may not be familiar with what an athletic trainer does because they have never interacted with an athletic trainer. He explained:

I get a sense that there still is a lack of understanding of the profession. That may be just because they haven't had access or they haven't been exposed to an athletic program. There's still many of our schools in [state name] that don't have athletic trainers - high schools, I mean.

The quotes above indicate that students enter athletic training programs with a poor knowledge of what athletic training is or what an athletic trainer does. These findings support prior research that investigated student interest and disinterest in applying to an ATEP (Mensch & Mitchell, 2008). The interviews of students in Mensch & Mitchell's (2008) previous study uncovered that student decisions to apply or not apply to an ATEP were altered by an initial exposure to athletic training while in high

school and an incomplete understanding of the profession. Based on the findings of the current study, program directors' belief that prospective students do not have a full understanding of the roles and responsibilities of the profession might be credible. Perhaps this lack of information could be ameliorated if students are able to interact with an athletic trainer while in high school. Although the American Medical Association recommended all high schools provide athletic training services in 1998 (American Medical Association, 1998), many still do not. The state of Rhode Island has passed legislation mandating athletic trainers at all high school athletic contests (Smith, 2010). Perhaps if other states passed similar legislation, the socialization of potential recruits to the profession would improve as more high school students would interact with athletic trainers potentially leading to students entering an ATEP to be more informed. It is important to note that socialization while in high school can also be a barrier to entering an ATEP if the athletic trainer works long hours or has a negative attitude while working (Mensch & Mitchell, 2008).

One additional theme emerged from the data explaining why program directors thought retention in athletic training education is a problem. Several participants mentioned the time commitment associated with the demanding coursework and clinical education while enrolled in an ATEP as a reason why many students leave. One participant explained how the time commitment required to complete clinical education expectations is hard to explain until students actually try it. She said:

I think because you can talk to students as much as you want and tell 'em what the commitment is and how much they have to do in clinical, and they don't really get it until they try to do it. And so it's just very demanding. And I think some students figure it out, and some students just can't do it.

Another participant explained how difficult courses combined with clinical education makes completing an ATEP difficult. He explained that many students:

don't understand or expect the academic rigor that's gonna be connected to it [the ATEP], and then quickly realize that it's not a good fit for them, either academically, or again the required time outside of class for clinicals and those kinds of things.

Finally, a similar sentiment came through as a participant answered that students leave ATEPs because, "it tends to either conflict with something they want to do socially, or just they don't want to invest the time."

Prior research has found the rigor of completing an ATEP causes frustration among AT students (Bowman & Dodge, In Press; Stilger et al., 2001). Athletic training students can also become burnt out because of the time commitment required to complete the program (Riter et al., 2008). Considering these studies, it appears that the opinions of program directors are reasonably accurate compared to previous work interpreting student perceptions. Scholars have suggested students should be given sufficient time outside of athletic training related activities to be involved with other endeavors (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009; Racchini, 2005). Students also need time to contemplate and reflect on what they learn (Dodge, Walker, et al., 2009) in order to maximize learning.

Retention is not a Problem in Athletic Training Education

I also spoke to program directors who thought that retention was not a problem in athletic training and asked them why they felt that way. Only one theme emerged from the data. Program directors were consistent in their perception that athletic training education programs do not have a retention challenge because a secondary admissions process is required to gain entry into an ATEP. Many programs utilize a secondary

admissions process to select students for an ATEP after at least one semester of coursework. Only 7% of respondents reported admitting students into the professional phase of the ATEP directly out of high school. The remaining 93% of program directors reported using a secondary admissions process. When such a process is employed, before students can apply to the ATEP, they must often complete observation hours, take a gateway course, and meet a Grade Point Average threshold in order to be eligible for admission. The code list for the data can be seen in Table 13.

Table 13

Code list and frequencies for why program directors thought retention is a problem in athletic training education.

Code	Frequency
Secondary Admissions Process	4
Lack of information	2
Students enjoy AT	2
Similar to other professions	2
No other interest	1
Personal relationships	1
Student investment	1

The use of a secondary admissions process was the only response given by more than two respondents when explaining why they thought retention in athletic training education was not a problem. One participant explained by stating:

Just speaking from my own program, we don't admit kids until their sophomore year, so we have a fairly intensive application and interview process, and orientation during their freshman year. That's designed to make sure that the kids understand what they're getting into before they commit to the program. Once they're in our program, they tend to stay in the program, unless they have some extenuating circumstances.

Another participant shared similar ideas. She said:

I think in my program, we work very hard to accept a student based on the minimum criteria that we have set, and statistically what we have found out is that when we have accepted students on probation, those below some of our minimum requirements, they are not successful. Which has led us to, at this point, only accept the students that meet the minimum criteria, to ensure better success, not only in the program, but first-time passing rate [on the Board of Certification exam].

Other participants supported the idea they thought retention is not a problem in athletic training education nationwide, not just the ATEP they direct. A respondent expressed:

Athletic training education, as it relates specifically to me, but also in general, I found that the way our programs are set up and a lot of people who have that pre-professional phase in athletic training, I think students figure out about athletic training and whether they want this for their profession pretty early. So once they actually get admitted into the athletic training program, I don't think retention was as much of a problem.

Another participant agreed that student departure is not a problem in ATEPs nationwide.

He said:

Again, just because with accreditation, and the standards, and guidelines, and all of those kinds of things, my assumption is there are probably procedures in place that help better identify kids into those programs.

The finding that several program directors believe a secondary admissions process improves student retention supports the quantitative results. The timing of formal admission variable was significantly correlated to the transformed self-reported retention rate. ATEPs that formally admit students into the program later in their college careers retain them at a higher rate, according to the ATEP directors. The number of observation hours required before students can apply to the ATEP variable was also positively statistically significant although not as strong as it lost significance in the regression model. The pre-professional phase of the ATEP helps to socialize students to the ATEP and provides them with time to contemplate whether athletic training is the field for

them. Students who become engaged early on through observation hours during the pre-professional phase of an ATEP may become committed to the profession and be more likely to persist.

Factors Associated with Athletic Training Student Persistence

At the end of the internet-based survey, I asked participants to identify three reasons students typically persist in their ATEP. The code list and the frequencies for each code are illustrated in Table 14.

Table 14

Code list and frequencies for persistence data

Code	Frequency
Career/Grad School Options	128
Personal Relationships	67
Enjoy what they are doing	47
Faculty	38
Determination/Dedication	34
Clinical Ed	33
Interest/Passion	23
Clear Expectations	19
Positive Environment	18
Motivated Students	17
Program Quality/Reputation	16
Successful	15
Interactive/Hands-on/Engaging	14
Sports	13
Help People	13
Smart/Prepared	11
Difficult to Change	10
Stimulating	8
Didactic Ed	7
Class Size	5
Pride	4
Positive Experiences	3
Facilities	3
Goals	3
Financial Support	3
No Distractions	2
History of AT	2
Academic Assistance	2
Professional Role Models	1
Voice	1
Personal Goals	1
Resources	1
Value	1
Opportunity	1

We were able to identify three major themes that emerged from the data:

1. Students persist due to their career goals

2. The personal relationships students build encourage persistence
3. Students complete a degree in athletic training due to their enjoyment, passion, and dedication to athletic training.

Career Goals

Program directors believe students persist because they want to be ATs or because completing a degree in athletic training gives them the skills to be successful in athletic training. One participant wrote he believes students persist because they “love the field of athletic training and can see themselves in a particular job setting doing this [athletic training] for a career.” Similarly, an additional participant stated that students finish a degree in athletic training because they are “dedicated to pursuing a degree/career in athletic training.” Finally, one wrote that students who finish “have a strong desire to be an athletic trainer” while another responded that students “enjoy the community atmosphere and can see themselves being part of the profession in the future.”

The finding that students persist because they want to be ATs supports the self-efficacy theory application to career choice (Betz & Hackett, 1981; Hackett & Betz, 1981). This theory endorses the idea that dedication is determined by the ability of a person to successfully perform behaviors to provide a specific result (Bandura, 1977). Based on this theory, students confident in their abilities as ATs will persist and enter the profession. The finding also overlaps the quantitative factor taking into account the perceptions of student success. Students confident that athletic training is the right profession for them and who are dedicated to finishing an ATEP do so because they want to enter the profession. The connection between a degree in athletic training and a career in athletic training is an easy connection for students to make and for faculty to explain.

In order to sit for the Board of Certification exam which allows one to enter the athletic training profession, he or she must graduate from a Commission on Accreditation of Athletic Training Education accredited ATEP. The requirement to enter the profession allows students to see a clear path to a career after graduation. Although there are numerous settings where athletic trainers find employment, the roles and responsibilities of the position remain reasonably consistent. These results are similar to those found previously when students were asked why they wanted to complete a degree in athletic training. Many students reported they enjoy sports and want to help physically active individuals (Bowman & Dodge, 2011; Mensch & Mitchell, 2008) thus making a career in athletic training desirable.

Interestingly, multiple participants stated a degree in AT could be helpful in preparing students for graduate programs and a career in another profession. One program director asserted that “they [students] want to use the athletic training degree as a stepping stone to another professional medical degree (PA, PT, etc.).” This sentiment was echoed as a participant said, “they [students] want to go into another career field where the foundational education as an AT is very helpful.” Another responded “the fact that they [students] want to use athletic training as a spring board for PT [physical therapy] or PA [physician assistant] school as opposed to the traditional biology route” caused students to persist in her program. Finally, students “see the benefits of [a degree in athletic training] helping them in graduate school (i.e., PT, PA, Chiropractor, etc).”

The finding that students remain enrolled in ATEPs because they see the skills they are learning as useful for their future aspirations is interesting. An investigation of the barriers to becoming an athletic trainer found an interest in another career was a

major reason students did not pursue the profession (Mensch & Mitchell, 2008). Also, previous work has found students use an undergraduate degree in athletic training as a stepping stone to other professions (Mazerolle, Gavin, Pitney, Casa, & Burton, In Press). Similarly, 17.6% of a sample of senior athletic training students were not planning to pursue a career in athletic training (Neibert, Huot, & Sexton, 2010). Of those not pursuing a career in athletic training, 28.5% wanted to enter physical therapy school and 15.8% wanted to become a physician assistant. Students see the hands-on skills they are learning and the clinical education as beneficial to pursuing a post-baccalaureate degree necessary to enter several other health care professions such as physical therapy, physician assistant, and occupational therapy among others.

The two findings related to career goals stress the importance of early socialization of athletic training students. Students must be given a clear depiction of the knowledge and skills of athletic trainers as well as a description of the job market. They may choose a different career path if they believe misconceptions or do not have a robust understanding of what an AT does (Mensch & Mitchell, 2008). If prospective students become interested in the profession early on, especially during the pre-professional phase of an ATEP, they will be more likely to persist (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009).

Personal Relationships

Participants frequently referred to the connections students were able to foster with other individuals as being a key component to persistence. According to one participant, “they [students] bond well with their colleagues and athletic training Approved Clinical Instructors, Clinical Instructors, and faculty.” “Good relationships

with faculty and staff that foster professional growth” and “the relationships and trust they have developed with their instructors and Approved Clinical Instructors” were similar reasons for student persistence. Students also appreciate “faculty and Approved Clinical Instructor encouragement and engagement” according to a program director. Another stated, “meaningful relationships fostered with faculty, Approved Clinical Instructors, and patients support their integration into the academic and athletic communities, which promotes persistence.” The importance of these relationships was stressed by one participant who responded, “the sociocultural aspect of the relationships/friendships/support network that they [students] form within their cohort and with athletic training faculty/ athletic training staff/advisors” helps to retain students within the ATEP. An additional participant also agreed that relationships with patients could help secure a student’s place in an ATEP. She wrote, “they [students] appreciate the feeling of accomplishment when athletes commend them on their skill.”

Similar to the social engagement factor, the relationships students form with peers, faculty, and Approved Clinical Instructors gives students the feeling of a close-knit family where mentors and support can easily be found. This support system is relied on by AT students to help them deal with the stress of completing a degree in AT (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009; Dodge, Walker, et al., 2009; Neibert et al., 2010). Students find peers as someone they can relate to, as they are often dealing with similar struggles. The participants of the current study listed the fact that the faculty were dedicated to student success and available to students as a reason students persisted to graduation. Also, students identify Approved Clinical Instructors as mentors (Pitney & Ehlers, 2004) because of the level of trust they have in the personal relationship fostered

during clinical education. Also, Approved Clinical Instructors must have adequate communication skills in order to fill the professional role they embark (Weidner & Henning, 2005).

Enjoyment, Passion, and Dedication

The final theme came from the program directors' perception of student involvement in the ATEP. One common response for why students persist in an ATEP is because they "enjoy what they are doing." A participant stated that students enjoy what they are doing and develop a passion for AT when they start "feeling competent and successful in their clinical experiences." Similarly, students also enjoy AT when they form an "interest and engagement clinically," according to another program director.

Interestingly, one participant stated he thinks student enjoyment and passion for the profession is helped by "good professional modeling by ATEP faculty (reasonable hours, good pay, report to academic affairs not the athletic director, positive about the profession, reasonably happy in their jobs)" leading to improved retention. Students also enjoy the "wide variety of clinical experiences" according to one program director. Another stated that students develop a passion for athletic training when "they understand that they are getting quality clinical education experiences, so even though there is a great deal of time put into the major, they feel as though it will be worth it in the long run." According to one participant, students also become dedicated to the program because, "as faculty and clinical staff, we work hard to provide students with the best academic experience possible." One program director responded that dedication to the ATEP occurs when students become "committed and see a commitment from faculty and staff as well as see the value of their education." Another participant stated that clinical

education can help develop student dedication to the ATEP despite the time involved, particularly if they are enjoying the learning experience. He replied, “they [students] truly enjoy the subject matter that they are learning, despite the long hours required for clinical education.” Dedication to the program and excitement for AT can also be fostered through didactic education. “The faculty who teach the classes engage the students in the learning process which causes the students to want to learn more and more.”

The finding that students finish a degree in AT because they enjoy what they are doing and are dedicated to the program appears to be connected to the previous two themes and the perceptions of student success factor. Students enjoy what they are doing and become dedicated to the program because they have positive relations with the various individual they interact with on a daily basis. They also become dedicated to the ATEP because they want a career in athletic training and the only way to achieve that goal is by finishing a degree in athletic training. These findings corroborate other research asking freshman students why they applied to gain entrance to an ATEP (Herzog et al., 2008) and research inviting students to identify reasons why they persisted in an ATEP (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009). Athletic training faculty and Approved Clinical Instructors should provide experiences that are interesting, challenging, exciting, and engaging to keep students eager to enter the profession.

Factors Associated with Athletic Training Student Departure

I also asked participants for common reasons students depart from an ATEP at the end of the internet-based survey. The themes for the data, the codes that created the themes, and the frequencies for each code can be seen in Table 15.

Table 15

Code list and frequencies for departure data

Code	Frequency
Rigorous course work/Grades	154
Clinical Ed	119
Interest Change	68
Perceptions of Profession/Program	58
Tuition Costs	56
Professional Goals	44
Expectations not met	30
Switch Major	26
Dismissed	15
Poor Fit	15
Student Characteristics	14
Home Sick	7
Transfer	6
Health Issues	2

The co-coder and I identified 4 themes for why program directors believe students leave ATEPs:

1. Students have difficulty managing the rigor of ATEPs which includes both the didactic coursework and the clinical practicum experiences
2. Athletic training is not what students expected or their interests have changed leading to departure
3. The perceptions of working as an athletic trainer cause students to question finishing a degree in athletic training
4. Students leave ATEPs because of financial hardship.

Program Rigor

Program directors often mentioned the fact that completing a degree in athletic training is difficult and this often leads to attrition. One program director mentioned the

“path of least resistance mentality” where students do not “look toward what the degree will get them; they just want to have an easy program with minimal time constraints.” Specifically, the challenging nature of the coursework makes it difficult for students to maintain acceptable academic standing within the ATEP. Programs are often “too difficult for students who are not academically strong.” One participant stated the “academic component is challenging and they [students] either fail or withdraw before they think they will fail.” Intriguingly, one program director noted there are easier ways to gain entrance to other graduate programs.

“Some students just want to go to PT [physical therapy] school after they graduate and the ATEP requires too much work to earn the BS [bachelor of science] degree. They select less academically challenging majors that allow them to complete the biology, physics, and chemistry requirements for entry into DPT [Doctor of Physical Therapy] programs.”

Program directors also often mentioned the time-consuming nature of clinical education. A common response for why students often depart from an ATEP was, “they [students] are overwhelmed by the time demand of clinical education.” Another participant explained the rigors of the academic and clinical education components of an ATEP by stating, “they [students] feel they need higher grades to get into graduate school and their clinical assignments take too much study time, whether it is true or not.” Program directors also expressed the difficulty of participating in intercollegiate athletics and completing clinical education requirements. Students struggle when “they are an athlete and feel they can not commit to the hours required for athletic training clinical as well as their athletic commitments.” Another participant agreed writing, “student-athletes express interest in the program, but don’t pursue it because they believe they

can't balance their time or their coach will not accommodate the ATEP field experience requirements.”

The first theme overlaps the perception of student success factor in that program directors reporting lower retention rates were more likely to be concerned about their ATEPs retention rate, student dedication, and the ability of students to complete the program. The clinical education factor also corresponds with the program rigor theme as both acknowledge the time-consuming nature of clinical education. These findings are similar to previous work (Bowman & Dodge, In Press; Stilger et al., 2001) which found the difficult nature of the coursework and the time-consuming demands of clinical education to be sources of stress and frustration for students.

Expectations and Change in Interest

Student expectations for what athletic training is and what it will be like to study athletic training are often different from reality. Frequently, students do not have an accurate understanding of the profession. They often do not “understand the profession prior to applying” to the ATEP or do not “really understand what an athletic trainer is and does.” “They [students] find out they do not like the field as much as they thought” leading to attrition according to one participant. Similarly, students “realize that athletic training is just not what they want to do (even though they thought that initially). They realize this through clinical education experiences and/or lack of achievement in the academic coursework.” Misconceptions about athletic training often lead students to switch to different majors. One program director stated the lack of a secondary admissions process could be part of the problem. He stated, “I would think that direct acceptance in[to an ATEP] during freshman year” can cause attrition “because it does not

allow them [students] an opportunity to explore other career options until they have already started in a program.”

Program directors reported student interests also often change leading to changes in the selected academic program. One participant wrote students “realize that the athletic training profession is not what they want for a future.” Often, this change in major is due to a change in career goals. One participant noted students often “really want to go into another field (e.g., physical therapy).” It is important to note one program director did not see attrition as a problem. She wrote:

Asking 17 and 18 year olds to make career decisions will always lead to some attrition. This is not a bad thing. College is where you have discovery and learn about who you are and what you want to do with your life.”

According to participants, ATEPs do not meet student expectations or students having a change in interest leading to attrition. Prior research has found students who shift their interest away from AT do so because of a lack of proper socialization (Mazerolle et al., In Press). Appropriate socialization of students is vital to their legitimization (Klossner, 2008) and development of an accurate understanding of the profession (Mensch & Mitchell, 2008). The understanding of the AT profession by prospective students is limited (Mensch & Mitchell, 2008) leading to a disconnect between expectations of students and the ATEP. Students should enter an ATEP for reasons that align with the mission of the program and the athletic training profession (Mensch & Mitchell, 2008). Interestingly, similar results have been found previously in nursing education as students often depart due to an inaccurate perception of the educational program (Harvey & McMurray, 1997; Spouse, 2000).

Career Perceptions

Participants noted the fact that students identify negative aspects to a career in athletic training and question whether they want to enter the profession. A participant wrote students question finishing her ATEP when they come to “the realization of just how demanding the day-to-day life is for an athletic trainer (and not wanting to do that).” The salaries associated with careers in athletic training appear to be a barrier to finishing a degree in athletic training. One program director wrote the “amount of money they [students] believe they would make in the profession for salary versus the amount of time they would be expected to work each day” is a reason many students depart the program. Likewise, the “job outlook for making money is lacking.” Another participant wrote students often “perceive athletic training work conditions (hours and pay) as poor” or that students are often “concerned about future time commitment required of the profession as well as the pay scale.”

Having professional role models also plays a role in student departure decisions according to program directors. Students might question finishing an ATEP when they “see dissatisfied clinical instructors in their positions and they don’t want that for themselves.” Similarly, another participant explained why attrition occurs in her ATEP.

She wrote:

I do believe that the morale in our athletic training room plays a role and that turnover in our staff and clinical sites makes it seem like AT is not a ‘viable’ long-term profession (students can’t see themselves doing it for 30-40 years).

Other students may depart from an ATEP because “they don’t see athletic training as their long term career. [They] choose professions with better starting pay scales.”

According to the program directors who completed my study, students contemplate leaving an ATEP because of career considerations. It remains unclear if this process occurs internally as a personal evaluation of the profession or externally from advice they receive from mentors. Another possibility for the concern over entering the profession may stem from professional socialization. As students learn the roles and responsibilities of the profession, they may decide athletic training is not what they are interested in doing for the remainder of their professional life. Several possibilities for the change in student career goals may be due to the perceived lack of compensation for a career in athletic training and the time commitment associated with a career in athletic training (Mazerolle et al., In Press). Also, students may change their desire to obtain a career in AT because they observe clinical instructors who struggle to find a work-life balance. Students may believe the experiences of their clinical instructor is widespread and a reality of the profession (Neibert et al., 2010). Selecting appropriate professional role models may help improve persistence rates of students by giving them an appropriate understanding of the roles and responsibilities of athletic trainers (Mazerolle et al., In Press).

Financial Hardship

The final theme related to student departure dealt with the ability of students to afford continued enrollment. When asked why students typically leave her ATEP, one participant responded, “Money. Most of my students have left because the small private education is expensive.” Another program director agreed stating the “cost of the school is a major issue” when trying to retain students in his ATEP. This theme also emerged from the fact that students often do not have time for a part-time job due to clinical

education requirements. A program director wrote, “the economy also has hit some students who cannot afford to go to school and do clinical experiences and still have a full-time job.” Another participant stated “the ability to work a job while attending school is certainly a factor for many students” when deciding whether they should stay in their ATEP.

The rigor of the didactic education and the time associated with clinical education responsibilities makes it difficult for AT students to have time for a part-time job (Racchini, 2005). The inability to financially afford the costs of college was another popular response explaining AT student departure among program directors who completed the survey. Anxiety related to the costs associated with completing an ATEP has been found to increase student stress previously (Stilger et al., 2001). Athletic training faculty need to be aware of the demands placed on AT students and provide a supportive environment which allows students to engage in activities outside of athletic training (Bowman & Dodge, In Press).

Summary

The qualitative results allowed me to determine why program directors think retention is or is not a problem in athletic training education. A lack of information on athletic training caused program directors to believe retention is a problem while the use of a secondary admissions process led program directors to believe it is not. I also developed several themes for why program directors believe students persist and depart from ATEPs. Persistence is caused mainly by the career goals of students while the rigor associated with completing the ATEP causes students to depart. Analyzing the responses to the open-ended questions and completing semi-structured telephone interviews with

selected participants provided data that supported and extended the quantitative results.

The next chapter will review the relevance of the study, the research questions, and

discuss the findings of the quantitative and qualitative data.

CHAPTER 6

DISCUSSION

Studying student retention in athletic training education programs is important as competent health care providers are essential to meet the growing demand for athletic trainers (Lacey & Wright, 2009). Since educational reform in 2004, there has been a dramatic increase in the number of accredited ATEPs nationwide. It has been previously found that younger ATEPs struggle with attrition more than programs that have more experience (Herzog, 2002). Due to the increase in programs recently and the fact that younger programs have more difficulty retaining students, it was important to determine whether retention is a problem among ATEPs nationwide.

The purpose of the current study was to investigate the perceptions of athletic training program directors on athletic training student persistence and departure decisions. I used the modified Student Integration Model to develop a survey to answer two research questions underpinning the current investigation. The research questions were:

1. Is athletic training student retention a problem?
2. What factors might be associated with athletic training student retention or attrition?

I was able to gather information to answer both research questions using the Athletic Training Student Retention Survey for Program Directors and by conducting follow-up telephone interviews with 16 participants. In the following section, I discuss the results

of the major findings including the self-reported retention rate, the variables included in the regression model, and the qualitative results obtained.

Is Athletic Training Student Retention Problematic?

The results of the current study suggest approximately half of program directors do believe athletic training student retention is a problem and half do not. I found the answer to this question was related to the self-reported retention rate of the participants' students. As expected, program directors who reported lower retention rates thought attrition is a problem in athletic training education and those who reported higher retention rates did not think it was. Further, when I spoke with participants during the telephone interviews, many spoke about the fact that they answered the question based on their experience at their current institution. Interestingly, several program directors mentioned they thought student retention in athletic training education is no different from other health care professional programs while others reported athletic training student retention is a problem based on conversations with colleagues. Based on the data, it appears to be program-specific whether program directors struggle with retaining students in ATEPs.

As mentioned in chapter 4, the average self-reported retention rate for my participants' students was 81% with a standard deviation of 17.9%. The nationwide retention rate for ATEPs has been reported as 89% previously (Herzog, 2002) with younger ATEPs having lower retention rates. I expected the retention rate in the current study to be lower than the previously found rate as there has been a dramatic increase in the number of programs since AT educational reform in 2004. Although the number of years the programs had been accredited had a statistically significant correlation to the

self-reported retention rates, the number of years the ATEPs had been accredited was not a strong predictor of the self-reported retention rate in the full regression model. I found other variables were better predictors of the self-reported retention rates including when students are formally admitted into ATEPs, the number of students admitted to ATEPs annually, the number of years of experience the program director had in their current position, and the second factor I developed pertaining to the perceptions of student success. I discuss these four variables below.

The National League for Nursing Accrediting Commission has set the minimum standard for baccalaureate nursing program retention at 80% (National League for Nursing Accrediting Commission, 1996). The median and average rates reported in the current study are both above this minimum criterion although I did obtain responses below 80% from 59 respondents (33%, 59/177). When comparing the retention rate obtained in the current study to the standard for nursing programs, the abilities of ATEPs to retain students are acceptable on average. The standards set by the Commission on Accreditation of Athletic Training Education (Commission on Accreditation of Athletic Training Education, 2008) allow programs to be successful at retaining students while preparing them for professional practice.

Factors Associated with Athletic Training Student Persistence and Departure

I explored the factors associated with persistence and departure through several different processes. First, I considered demographic factors of the host institution, the ATEP, and the program director. Second, I developed four factors from the Likert scale data of the survey; however, only the second factor significantly helped to explain the variance in the self-reported retention rates. Finally, I collected qualitative data through

open-ended questions on the Athletic Training Student Retention Survey for Program Directors and through semi-structured telephone interviews with selected participants.

I included eight variables in the multiple regression equation; however only four had statistically significant coefficients identifying them as the best predictors of the self-reported retention rates. The four variables with significant coefficients were the timing of formal acceptance into the ATEPs, the number of students admitted into the ATEPs annually, the number of years program directors had been in their current positions, and the second factor I developed from the Likert scale data that concerned the program directors' perceptions of student success. The results of the regression equation provide several implications for improving retention rates of the students enrolled in undergraduate ATEPs. Programs that provide a pre-professional phase where students complete gateway coursework and observation at some level were led by program directors who reported higher retention rates. This finding corroborates previous research which stresses the importance of early socialization to allow students to understand the roles and responsibilities of an athletic trainer (Mazerolle et al., In Press; Mensch & Mitchell, 2008). Providing students with a clear depiction of the profession will allow them to make an informed decision on applying for entrance to an ATEP, improving retention.

The results of the survey also support the fact that the number of students admitted into an ATEP influences retention. Programs that admit a lower number of students annually reported higher retention rates. This finding may be related to the fact that students who persisted to complete ATEPs did so because of the small, close-knit, family style atmosphere they found in their ATEP (Bowman & Dodge, 2011). Perhaps

the bigger issue is finding ways to provide students with individual attention and support regardless of institutional or program size. Factors which are able to provide students with more one-on-one mentoring, including academic advising and clinical instruction, will have better retention rates.

Program directors who have been in their positions for a longer period of time reported having a higher retention rate for the students in their ATEP. Administrative stability appears to be a key factor in solving curricular challenges that arise. Program directors with extensive experience may be better primed to handle the demands of program leadership including maintaining accreditation without the pressure of earning tenure (Dewald & Walsh, 2009). Stability in the direction of the program can also help recruitment efforts by showing consistency and allowing for the development of a reputation among recruits.

The perceptions of participants on the success of the students in their ATEPs also had a significant impact on self-reported retention rates. I developed this variable from several Likert scale questions in the Athletic Training Student Retention Survey for Program Directors. The first two components of the variable included whether the program director or the administration of the institution had identified the retention rate of the ATEP as a concern. Those respondents describing lower levels of concern by themselves and their administration over student attrition reported higher retention rates. The remaining components of the variable dealt with the confidence and dedication of the students in the ATEP and the ability of the students to meet the academic requirements of the program. Not surprisingly, program directors conveying higher levels of student confidence and dedication as well as a higher ability to meet academic requirements also

reported higher retention rates. This finding was not surprising as student motivation has been previously found as a major factor associated with persistence within an ATEP (Dodge, Mitchell, et al., 2009).

I identified several additional persistence factors and several reasons for student departure from ATEPs in the qualitative data. Program directors believe students remain enrolled in ATEPs because of their career goals, the personal relationships they create, and because they enjoy and are dedicated to what they are doing. These findings are similar to those of previous research when asking students why they persisted to graduation (Bowman & Dodge, 2011; Mazerolle et al., In Press). In order to enter the athletic training profession, students must complete an accredited ATEP making the connection between persisting in an ATEP and student career goals lucid. Relationships with faculty, clinical instructors, coaches, athletes, and peers can alter athletic training student retention decisions (Bowman & Dodge, 2011). The belief that students enjoy what they are doing and are dedicated to the program is also consistent with data gathered when asking students why they persisted to graduate from ATEPs (Bowman & Dodge, 2011; Herzog et al., 2008). Perhaps students who spend large amounts of time completing the ATEP requirements feel dedicated and committed to the program, increasing the likelihood of persistence.

I also identified four themes of reasons that program directors indicated students consider departing from an ATEP. According to program directors, students leave ATEPs because of the academic rigor associated with completing a degree in athletic training, the program not meeting the student's expectations or the student changing their interest, career considerations, and financial reasons. Because ATEPs are rigorous,

completing the coursework and clinical education requirements often cause student stress and frustration (Bowman & Dodge, In Press; Stilger et al., 2001) leading to feelings of being overwhelmed. If these student feelings continue or heighten, students may consider leaving the ATEP for another program that appears more manageable. It has been previously found that students who switch their interest away from athletic training do so because of a lack of socialization early on during students' time in an ATEP (Mazerolle et al., In Press) supporting the results of the present study. A lack of socialization can lead to students entering an ATEP without a clear understanding of the profession causing student expectations to not be met. Students may leave an ATEP due to career considerations, specifically perceived future compensation and time commitment associated with a career in AT (Mazerolle et al., In Press). Finally, financial strain can cause student attrition. Finances are a common cause of stress for students (Stilger et al., 2001) because they often do not have time to hold employment due to the rigorous coursework and time-consuming clinical education (Racchini, 2005).

Although I was able to identify several factors associated with athletic training student persistence and departure, the reasons for student enrollment decisions are multifaceted. The regression equation I developed was able to identify 37.5% of the variance in the self-reported retention rates. The remaining 62.5% of the variance could be due to a number of additional factors that cause students to leave. Institutional factors such as admissions selectivity (Pascarella & Terenzini, 2005), career development assistance (Jurgens & Schwitzer, 2002), and first-year seminars improve college graduation rates because the reasons for student departure are varied (Starke et al., 2001). Informal interactions between students and faculty outside the academic major can

improve student retention (Astin, 1993; Gerdes & Mallinckrodt, 1994; Graunke & Woosley, 2005; Lockie & Burke, 1999; Pascarella & Terenzini, 1979) as well as positive interactions between undergraduate peers (Astin, 1993; Pascarella & Terenzini, 1991).

Modified Student Integration Model

I found support for the modified student integration model (Dodge, 2006) in the current study. The main components leading to persistence of athletic training students based on the model are academic integration, social integration, clinical integration, pre-college experience with AT, and motivation. Program directors supported academic and clinical integration by the fact they stated they believed students persisted in ATEPs because they enjoyed what they were doing. The finding that students persist due to the personal relationships they build supports the social integration piece of the modified Student Integration Model. Finally, I found support for student motivation levels through the second factor I developed from the Likert scale data. The factor took into account the perception of student success by asking about student confidence levels and dedication to the ATEP.

I failed to find confirmation of the pre-college experience with AT component to the modified Student Integration Model. However, my data came from program directors who may not be aware of the pre-college experiences of their students. Therefore, the lack of endorsement was not surprising. Perhaps future researchers should consider a career aspiration component and an ATEP design element to the model as I found support for such additions. Program directors in the current study stated they thought students persist in ATEPs because of their career goals and the fact that they want to find employment as ATs. I also found several variables associated with the design of an

ATEP that influence student persistence such as the timing of the secondary admissions process and how many students are admitted to the ATEP annually.

Implications for Athletic Training Program Directors

The results of the current study can be used to help maximize student retention in ATEPs. First, the decision on when students can be formally admitted to the ATEP should be intentional. I found programs that admit students later during their college careers retain students at a higher rate. Also, a lack of information was reported as a major reason why students leave ATEPs by participants further stressing the importance of the pre-professional phase of ATEPs. Providing students with more time before they commit to the program can allow them to gain information about both the ATEP and the profession permitting them to make an educated decision. A longer pre-professional phase may also reduce the possibility of the ATEP not meeting student expectations due to the additional socialization time. Additionally, program directors who did not believe retention is a problem in AT education felt that way because of a secondary admissions process where they select candidates for the ATEP who they believe are the most qualified and have the greatest potential to persist. Delaying formal acceptance into the ATEP will provide program personnel with additional time to evaluate a student's fit into the ATEP by allowing time for personal relationships to be built. As the conversation over moving the entry-level degree to the post-baccalaureate level for athletic trainers continues (Pitney, 2012), providing recruits with sufficient information to enter an ATEP will become increasingly important as the pre-professional portion of the ATEP will be the student's undergraduate degree. It will be important to start the socialization process before students enter the ATEP in order to maintain acceptable student retention rates.

Program directors should also consider the number of students they admit per year. Program directors of ATEPs admitting fewer students reported having higher retention rates. Similarly, program directors believe students enjoy the personal relationships they have the opportunity to build while studying AT. Providing students with sufficient individual attention can improve retention rates as students enjoy small class sizes and the family atmosphere of ATEPs regardless of the size of the institution (Bowman & Dodge, 2011). Program directors should only admit the number of students they can support based on the number of faculty, staff, and clinical instructors they have associated with their program.

Students often leave ATEPs due to the rigor associated with completion. Although maintaining high standards is appropriate to ensure students will be able to pass the Board of Certification exam and function as appropriate entry-level professionals, program directors should plan curricular sequencing deliberately to avoid unnecessarily overwhelming students. Clinical education expectations should also be kept reasonable stressing quality over quantity. Providing students with sufficient time away from athletic training will allow them to reflect on what they are learning, maximizing the educational experience (Dodge, Walker, et al., 2009).

Finally, program directors need to provide students with challenging, exciting, and engaging experiences to keep their interest in athletic training high (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009; Herzog et al., 2008). Providing students with a positive learning environment can help maintain student enjoyment, passion, and dedication to the ATEP, factors found to influence persistence decisions in the current study. Selecting appropriate professional role-models to mentor students is vital to

maintaining student retention rates in ATEPs. Faculty, staff, and clinical instructors need to promote the positive benefits of a career in athletic training while being upfront and honest about potential drawbacks. Students who see ATs happy in their professional lives will feel comfortable entering the profession. However, if students witness athletic trainers in poor working conditions or athletic trainers who are not happy in their current roles, they may question their decision to enter the profession.

Future changes in athletic training education may cause ATEPs to shift the way they function. The Commission on Accreditation of Athletic Training Education is planning to move toward an outcomes-based evaluation of ATEPs (J. Hertel, V. Herzog, S. Mazerolle, & W. Pitney, personal communication, June 20, 2011). It remains unknown when these changes may take place as the Commission has set no timeline to institute such changes. Currently, the Commission on Accreditation of Athletic Training Education makes reaccreditation decisions based on the completion of an annual report and a site visit when accreditation expires for each ATEP. The outcomes that may be used to determine future reaccreditation decisions include retention data, graduation rates, and Board of Certification pass rates (J. Hertel, V. Herzog, S. Mazerolle, & W. Pitney, personal communication, June 20, 2011). The implications of such a move would have profound effects on athletic training educators as accreditation would be tied to the ability to recruit, enroll, and retain students capable of completing the ATEP and passing the Board of Certification exam. The results of the current study can help those program directors struggling with student attrition make changes to their ATEPs to help improve persistence rates.

Contributions to the Literature

The current study extends the literature by identifying the perceptions of a large portion of program directors from the accredited ATEP population. Previously, only one study had sought opinions on athletic training student retention from program directors (Carr & Vanic, 2000). This study was completed before educational reform in AT caused a dramatic increase in the number of programs nationwide and only collected data from 25 program directors. I had a representative group of 177 program directors out of the 343 nationwide complete my study for a 51.6% response rate leading to improved generalizability.

I was able to establish the average retention rate for students studying athletic training across the country at 81%. This is the first study to attempt to determine the retention rate for athletic training students nationwide since educational reform in 2004. Nursing education has set a minimum retention rate requirement at 80% (National League for Nursing Accrediting Commission, 1996) for nursing students. Athletic training is similar to nursing education due to the demanding didactic and clinical education requirements and the fact that both programs are at the baccalaureate level. Compared to the nursing education standard, there is no widespread trouble among ATEP directors to retain students.

I determined institutional, programmatic, and program director variables that are associated with athletic training student persistence as well as reasons students typically persist and depart from ATEPs. Previous research has sought persistence data from students (Bowman & Dodge, 2011; Dodge, Mitchell, et al., 2009); however, this is the first study to determine the characteristics of ATEPs with high and low retention rates.

Further, the current study identified several variables that are important factors into the departure decisions of athletic training students. To date, no data exist determining what factors into the decision to leave an ATEP from those who depart.

Recommendations for Future Research

Future research should continue to explore the reasons for student departure and persistence in athletic training education. Perhaps programs directors who have long tenures in their current positions with programs that have a rich history of success can provide best practices for providing an environment that fosters student success. Less experienced ATEP directors could use these pearls of practice to help improve athletic training student retention rates. It would be interesting to see if researchers can find similar results with Entry Level Master's programs or if retention rates for these programs are different from undergraduate programs. I also believe the timing of the secondary admissions process warrants additional attention. The findings of the current study suggest a later formal admission improves student retention to graduation. An important factor to consider is how shortening the number of academic years of clinical education alters preparation for professional demands. I also recommend studying students who depart ATEPs to help shed light on the reasons students decide to leave as no studies to date have sought departure reasons from students who left ATEPs. Finally, future work should continue to shed light on the professional socialization process for students. Specifically, particular socialization tactics which are exemplary should be identified to provide students with the proper background to make an informed decision to enter an ATEP and the profession of athletic training. It would be interesting to explore whether professional socialization through a high school AT while prospective

students are in secondary school alters persistence decisions once the student reaches college.

Conclusions

The current study extends the literature by identifying the retention rate of undergraduate athletic training programs and several factors associated with athletic training student persistence and departure. I identified several demographic variables that were helpful in predicting self-reported retention rates of undergraduate ATEPs. I also devised four factors related to AT student retention based on Likert scale survey questions, one of which was a strong predictor of the self-reported retention rate participants provided. Finally, three themes emerged explaining AT student persistence while four themes emerged suggesting why students consider leaving an ATEP. Based on these results, ATEP program directors should carefully plan curricular sequencing to provide an environment for students to thrive. This includes taking into consideration the timing of formal admission and the rigor of the coursework and clinical education component as well as working to foster relationships between faculty, clinical instructors, peers, and advisors. Professional socialization should be a key component of ATEPs, particularly early on to allow students to enter the program with a rich understanding of the profession.

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APPENDICES

APPENDIX A

Athletic Training Student Retention Survey for Program Directors

Electronic Survey Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study.

Project Title: Perceptions of Athletic Training Program Directors on Athletic Training Student Persistence and Departure Decisions

Purpose of the research study: The purpose of the study is to gain further insight into athletic training program directors' perceptions of athletic training student retention.

What you will do in the study: You will be asked to volunteer to participate in the research study by completing an online survey. The survey questions pertain to your perceptions of athletic training student retention and attrition. You may skip any question that makes you uncomfortable and you can stop the survey at any time by closing your web browser.

Time required: The study will require about 10-15 minutes of your time.

Risks: There are no anticipated risks in this study.

Benefits: The benefits of the study include further understanding of whether athletic training student retention is a problem. The results of the current study may steer policy decisions within the Commission on Accreditation of Athletic Training Education and individual athletic training education programs by identifying programmatic factors affecting athletic training student retention and attrition choices. There are no tangible benefits to the participants.

Confidentiality: The information that you give in the study will be handled confidentially. Your information will be assigned a code number. The list connecting your name to this code will be kept on a password protected computer. When the study is completed and the data have been analyzed, this list will be destroyed. Your name or any identifying information will not be used in any report. You will be given an alias.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study: If you want to withdraw from the study, close the survey website within your web browser. There is no penalty for withdrawing. If you would like to withdraw from the study during the telephone interview, tell the interviewer you would like to terminate the telephone call. If you would like to withdraw after your materials have been submitted, please contact Tom Bowman at tgb7e@virginia.edu or bowman.t@lynchburg.edu and all of your materials will be destroyed.

Payment: You will receive no payment for participating in the study. However you will have the option to register for a drawing of a \$50 Amazon gift card.

If you have questions about the study, contact:

Tom Bowman
University of Virginia
Telephone: (717) 439-6626
tgb7e@virginia.edu

Heather Wathington
Higher Education Department
University of Virginia, PO Box 400265
Charlottesville, VA 22903
Telephone: (434) 982-2715
hw4w@virginia.edu

If you have questions about your rights in the study, contact:

Tonya R. Moon, Ph.D.,
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb

Agreement:

If you agree to participate in the research study described above, please click the continue button below. You may print this page for your records.

Athletic Training Student Retention Survey for Program Directors

Background Information - please provide us with some information to help us understand your ATEP.

1. Which type of Athletic Training Education Program will you be responding to this survey about?
 - a. Undergraduate
 - b. Entry Level Masters
2. Please identify the approximate number of students enrolled in your institution.
 - a. Up to 1,000
 - b. 1,000 – 3,000
 - c. 3,000 – 5,000
 - d. 5,000 – 10,000
 - e. 10,000 – 20,000
 - f. 20,000 – 30,000
 - g. 30,000 or greater
3. Please indicate your institution's type.
 - a. Public
 - b. Private Non-Religious
 - c. Private Religious
 - d. Private for Profit
 - e. Other
4. Please indicate the athletic affiliation of the majority of sports at your institution.
 - a. NCAA Division I
 - b. NCAA Division II
 - c. NCAA Division III
 - d. NAIA
 - e. Other
5. In what year did the ATEP at your institution first gain accreditation?
6. How many years have you held your program director position at your current institution?
7. What is your age?
8. When are the majority of students first able to be formally admitted into your ATEP and begin the professional portion of your ATEP?
 - a. Before the student begins coursework
 - b. After one semester of coursework
 - c. After two semesters of coursework
 - d. After three semesters of coursework
 - e. After four semesters of coursework
 - f. Other
9. Please explain why you have this type of admission process.
10. On average, how many students apply to your program each year?
11. On average, how many students are accepted into your program each year?
12. How many observation hours, if any, do you require before students can apply to your ATEP?
13. How many total students are currently in your program after formal admission?

14. Does your ATEP have a minimum grade requirement for particular courses or a minimum GPA requirement for students to obtain to remain in good standing in your ATEP?
 - a. Yes
 - b. No
15. If yes, what are they?
16. How many academic years of clinical education experience do your students obtain following admission to your ATEP?
17. Does your ATEP have a requirement for the number of hours students must be engaged in clinical education per semester?
 - a. Yes
 - b. No
18. How many clinical education hours excluding observation hours, if any, are your students required to complete to qualify for graduation?
19. What type of clinical education experiences does your program offer (select all that apply)?
 - a. On campus collegiate athletics
 - b. Other colleges/universities
 - c. Professional or semi-professional sports
 - d. High schools
 - e. PT/sports medicine clinics
 - f. Physician offices
 - g. Hospitals
 - h. Industrial settings
 - i. Law enforcement/military setting
 - j. Other
20. Please estimate the percentage of students, for example 50%, who find careers in athletic training after graduation over the past 5 years to the best of your ability.
21. Please estimate the percentage of students, for example 50%, who graduated from your ATEP out of the total number of students admitted into your ATEP over the past 5 years to the best of your ability.
22. Do you think retention of athletic training students at all programs nationwide is currently a problem facing athletic training education?
 - a. Yes
 - b. No
23. Please provide any additional comments or rationale behind your responses for this section of questions.

ATEP Environment - this section will ask you questions about the atmosphere of your ATEP. Please choose the answer that best describes your opinion.

1. The majority of students in my ATEP are dedicated to finishing the AT program.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree

2. The majority of students in my ATEP are confident that their initial decision to enroll in an ATEP was the right choice.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
3. I am concerned about the retention rate of my ATEP's students.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
4. The administration at my institution is concerned about the retention rate of my ATEP's students.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
5. My ATEP is given appropriate financial resources to successfully graduate students.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
6. My ATEP is given appropriate personnel resources to successfully graduate students.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
7. Please provide any additional comments or rationale behind your responses for this section of questions.

Didactic Education - this section will ask you questions about the didactic portion of your ATEP. Please choose the answer that best describes your opinion.

8. What type of feedback do you receive for the didactic portion of your ATEP on your comprehensive assessment plan from the majority of your students?
 - a. Very negative
 - b. Negative
 - c. Neutral
 - d. Positive
 - e. Very positive
 - f. We do not seek feedback

9. What type of feedback do the faculty in your ATEP generally receive on teaching evaluations from the majority of athletic training students?
 - a. Very negative
 - b. Negative
 - c. Neutral
 - d. Positive
 - e. Very positive
 - f. We do not have teaching evaluations
10. To what extent do you agree or disagree with the following statement, “The majority of the students in my ATEP are able to achieve the academic standards required to remain in my ATEP.”
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
11. Please provide any additional comments or rationale behind your responses for this section of questions.

Clinical Education - this section will ask you questions about the clinical portion of your ATEP. Please choose the answer that best describes your opinion.

12. What type of feedback do you receive for the clinical portion of your ATEP on your comprehensive assessment plan from the majority of your students?
 - a. Very negative
 - b. Negative
 - c. Neutral
 - d. Positive
 - e. Very positive
 - f. We do not seek feedback
13. What type of feedback do the ACIs in your ATEP generally receive on their evaluations from the majority athletic training students?
 - a. Very negative
 - b. Negative
 - c. Neutral
 - d. Positive
 - e. Very positive
 - f. We do not have ACI evaluations
14. To what extent are you satisfied or dissatisfied with the amount of time the students in your ATEP are engaged in clinical education?
 - a. Very dissatisfied
 - b. Dissatisfied
 - c. Neutral
 - d. Satisfied
 - e. Very satisfied

Please indicate your level of disagreement or agreement with the following statements.

15. The limitations set by the CAATE for the amount of time a student can spend in clinical education allow for sufficient learning.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
16. The limitations set by CAATE for the amount of time a student can spend in clinical education allows sufficient time for students to engage in activities outside of athletic training.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
17. The students in my ATEP know what is expected of them during clinical education.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
18. The students in my ATEP have sufficient opportunities to practice appropriate clinical skills.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
19. The clinical experiences of the students in my ATEP prepare them to meet the demands of professional practice.
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
20. Please provide any additional comments or rationale behind your responses for this section of questions.

Social Experiences - this section will ask you questions about the relationships within your ATEP. Please choose the answer that best describes your opinion.

21. To what extent are you satisfied or dissatisfied with the ability of your ATEP to foster relationships between the students in your ATEP?
 - a. Very dissatisfied
 - b. Dissatisfied
 - c. Neutral
 - d. Satisfied
 - e. Very satisfied

22. To what extent are you satisfied or dissatisfied with the ability of your ATEP to foster relationships between the students in your ATEP and the athletic training faculty?
 - a. Very dissatisfied
 - b. Dissatisfied
 - c. Neutral
 - d. Satisfied
 - e. Very satisfied
23. To what extent are you satisfied or dissatisfied with the ability of your ATEP to foster relationships between the students in your ATEP and clinical instructors?
 - a. Very dissatisfied
 - b. Dissatisfied
 - c. Neutral
 - d. Satisfied
 - e. Very satisfied
24. To what extent are you satisfied or dissatisfied with the quality of academic advising for the students in your ATEP?
 - a. Very dissatisfied
 - b. Dissatisfied
 - c. Neutral
 - d. Satisfied
 - e. Very satisfied
25. To what extent do you agree or disagree with the following statement, “The majority of the students in my ATEP have sufficient time to themselves away from athletic training?”
 - a. Strongly disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly agree
26. Please provide any additional comments or rationale behind your responses for this section of questions.

Finally, I would like to ask you a few open-ended questions. Please be as specific as possible when responding.

1. Please list the top 3 reasons students typically persist in your ATEP.
2. Please list the top 3 reasons students typically leave your ATEP.
3. Ideally, what, if anything, would you like to do to improve AT student retention at your institution?
4. Please describe any specific initiatives you or your ATEP use that are aimed at retaining students.
5. Are there other factors that you think influence AT students’ decisions to persist in or depart from an ATEP?
6. What do you think is an appropriate retention rate for ATEPs? Please explain your answer.
7. Would you be willing to participate in a brief follow-up telephone interview?
 - a. Yes
 - b. No
 - c. Maybe

8. If you would consider participating in the follow-up interview, please provide your email address so I can contact you to set up a date and time for the telephone interview.

If you would like to be entered into the drawing for one of the Amazon gift cards, please provide your email address below.

APPENDIX B

Correspondence with Participants

Pre-notification Email

Subject: Participation Requested

Dear Professor [last name]

We are contacting you because we have selected you to participate in our study, Perceptions of Program Directors on Athletic Training Student Persistence and Departure Decisions. The purpose of the study is to seek the opinions of athletic training education program directors regarding athletic training student retention and attrition. You will receive an email with a link to a secure website containing the survey in approximately one week. The survey will only take approximately 10-15 minutes to complete. We believe this study is important because we believe the results will identify programmatic factors affecting athletic training student retention and attrition. Your insight is important to us because the results may also help steer curricular decisions to provide a supportive atmosphere for athletic training students. You will also have the option of volunteering for a tape recorded follow-up telephone interview lasting approximately 30 minutes. The telephone interview is not required to participate in the survey. All responses will remain confidential and secure and the research has been approved by the Institutional Review Board at the University of Virginia.

Because I know your time is important, all participants who complete the survey can choose to be entered into a drawing to win a \$50 Amazon gift card.

Thank you for your time.

Tom Bowman, MEd, ATC
Assistant Professor, Lynchburg College
Doctoral Candidate, University of Virginia

Jay Hertel, PhD, ATC
Joe H. Gieck Professor of Sports Medicine, University of Virginia

Email to Ask for Participation

Subject: Participation Requested

Dear Professor [last name],

Approximately one week ago, we contacted you to inform you of our study, Perceptions of Program Directors on Athletic Training Student Persistence and Departure Decisions. The purpose of the research is to gain further insight into athletic training student retention. It will only take approximately 10-15 minutes to complete the questionnaire. Thank you in advance for your valuable insights. Your input will be used to identify the factors Program Directors think alter persistence and departure decisions of athletic training students. You will also have the option of volunteering for a follow-up telephone interview lasting approximately 30 minutes. The telephone interview is not required to participate in the survey. All responses will remain confidential and secure and the research has been approved by the Institutional Review Board at the University of Virginia.

Because I know your time is important, all participants who complete the survey can choose to be entered into a drawing to win a \$50 Amazon gift card.

We have contracted with Question Pro, an independent research firm, to field your confidential survey responses. Please click on this link to complete the survey:

<SURVEY_LINK>

Please contact Tom Bowman at tgb7e@virginia.edu or bowman.t@lynchburg.edu with any questions. We appreciate your time.

Thank You

Tom Bowman, MEd, ATC
Assistant Professor, Lynchburg College
Doctoral Candidate, University of Virginia

Jay Hertel, PhD, ATC
Joe H. Gieck Professor of Sports Medicine, University of Virginia

APPENDIX C

Telephone Interview Informed Consent

Telephone Interview Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of the study is to gain further insight into athletic training program directors' perceptions of athletic training student retention.

What you will do in the study: You will be asked to volunteer to participate in a 30 minute tape recorded semi-structured telephone interview. The questions will pertain to your perceptions of athletic training student retention and attrition. You may skip any question that makes you uncomfortable and you can stop participation at any time by telling the investigator you would like to terminate the interview.

Time required: The study will require approximately 30 minutes of your time.

Risks: There are no anticipated risks in this study.

Benefits: The benefits of the study include further understanding of whether athletic training student retention is a problem. The results of the current study may steer policy decisions within the Commission on Accreditation of Athletic Training Education and individual athletic training education programs by identifying programmatic factors affecting athletic training student retention and attrition choices. There are no tangible benefits to the participants.

Confidentiality: The information that you give in the study will be handled confidentially. You will be given an alias on the interview transcript. Only the research team will have access to your transcripts. When the study is completed and the data have been analyzed, all transcripts will be destroyed. Your name or any identifying information will not be used in any report. Your alias will be used.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study: If you want to withdraw from the study, tell the investigator you would like to terminate the telephone call. There is no penalty for withdrawing. If you would like to withdraw after your materials have been submitted, please contact Tom Bowman at tgb7e@virginia.edu or bowman.t@lynchburg.edu and all of your materials will be destroyed.

Payment: You will receive no payment for participating in the study.

If you have questions about the study, contact:

Tom Bowman
University of Virginia
Telephone: (717) 439-6626
tgb7e@virginia.edu

Heather Wathington
Higher Education Department
University of Virginia, PO Box 400265
Charlottesville, VA 22903
Telephone: (434) 982-2715
hw4w@virginia.edu

If you have questions about your rights in the study, contact:

Tonya R. Moon, Ph.D.,
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb

Agreement:

I agree to participate in the research study described above.

Signature: _____ **Date:** _____

You will receive a copy of this form for your records.

APPENDIX D

Telephone Interview Guide

Script: Thank you for agreeing to participate in a follow-up telephone interview for my research. You may skip any question or stop the interview at any time by informing me that you would like to terminate the phone call. Our conversation will last approximately 30 minutes and will be tape recorded. Your results will be kept confidential. Any identifying information will be removed and a pseudonym will be used when referring to you. Do you agree to participate in the telephone interview?

Thank you. (proceed to question 1 below)

Follow-up telephone interview questions

1. Why do you feel retention is or is not a problem in AT education? Is this feeling just for your program or for programs nationwide?
2. Please describe the retention strategies of your ATEP.
3. How would you describe the **strengths** of your ATEP? How do your programs' strengths alter student retention decisions?
4. How would you describe the ways your ATEP can **improve**? How do your programs' areas for improvement alter student retention decisions?
5. In what ways do didactic experiences factor into the persistence decisions of the students in your ATEP? Please explain.
6. In what ways do the clinical experiences factor into the persistence decisions of the students in your ATEP? Please explain.
7. Please describe a situation where a student questioned their decision to finish a degree in AT at some point in their time as an undergraduate. Why did they question finishing? What other program were they considering switching to? How did you manage this situation? What was the final outcome [did they leave or persist]?
8. Please give some examples of what aspects of your ATEP influence AT student **persistence** the most? Why? Do you believe these examples are across the board [in other educational programs, or unique to yours]?
9. Please give some examples of what aspects of your ATEP influence AT student **departure** the most? Why? Do you believe these examples are across the board [in other educational programs, or unique to yours]?
10. How are students socialized into your ATEP? When does socialization begin for students in your ATEP? Please give some examples.
11. How are the expectations your ATEP has for athletic training students explained to them? Can you give some examples?
12. How are AT students motivated to finish your ATEP? Please give some examples.
13. How many students admitted in the class of 2011 graduated in 2011? Is this retention rate typical?

APPENDIX E

Regression Equation with the Seven Informational and Demographic Variables
and Four Constructs

Variable coefficients for the regression equation including the seven significant informational and demographic variables with all four factors

Variable	B	β	t	P Value
Program Information				
Years accredited	0.05	0.13	1.54	0.13
Timing of formal admittance to ATEP	0.35	0.30	3.03	<0.01*
Academic years of clinical education	0.10	0.04	0.43	0.67
Observation hours before apply	0.01	0.11	1.23	0.23
Student acceptances to ATEP	-0.02	-0.25	-2.80	0.01*
Clinical hours required for graduation	0.01	-0.01	-0.09	0.93
Program Director Demographics				
Program Director Experience	0.04	0.20	2.29	0.02*
Factor				
Factor 1 – Social engagement	0.04	0.12	1.10	0.27
Factor 2 – Perceptions of student success	0.10	0.26	3.11	<0.01*
Factor 3 – Strong role of clinical education	-0.10	-0.09	-0.83	0.41
Factor 2 – Sufficient resources	-0.03	-0.05	-0.58	0.56
Constant				
	-2.58		-1.95	0.05*

Note: $R^2 = 0.38$, $F_{11, 112} = 5.73$, $P < 0.001$

* $P \leq 0.05$

FIGURES

Figure 1

Factors Leading to Successful Athletic Training Student Persistence

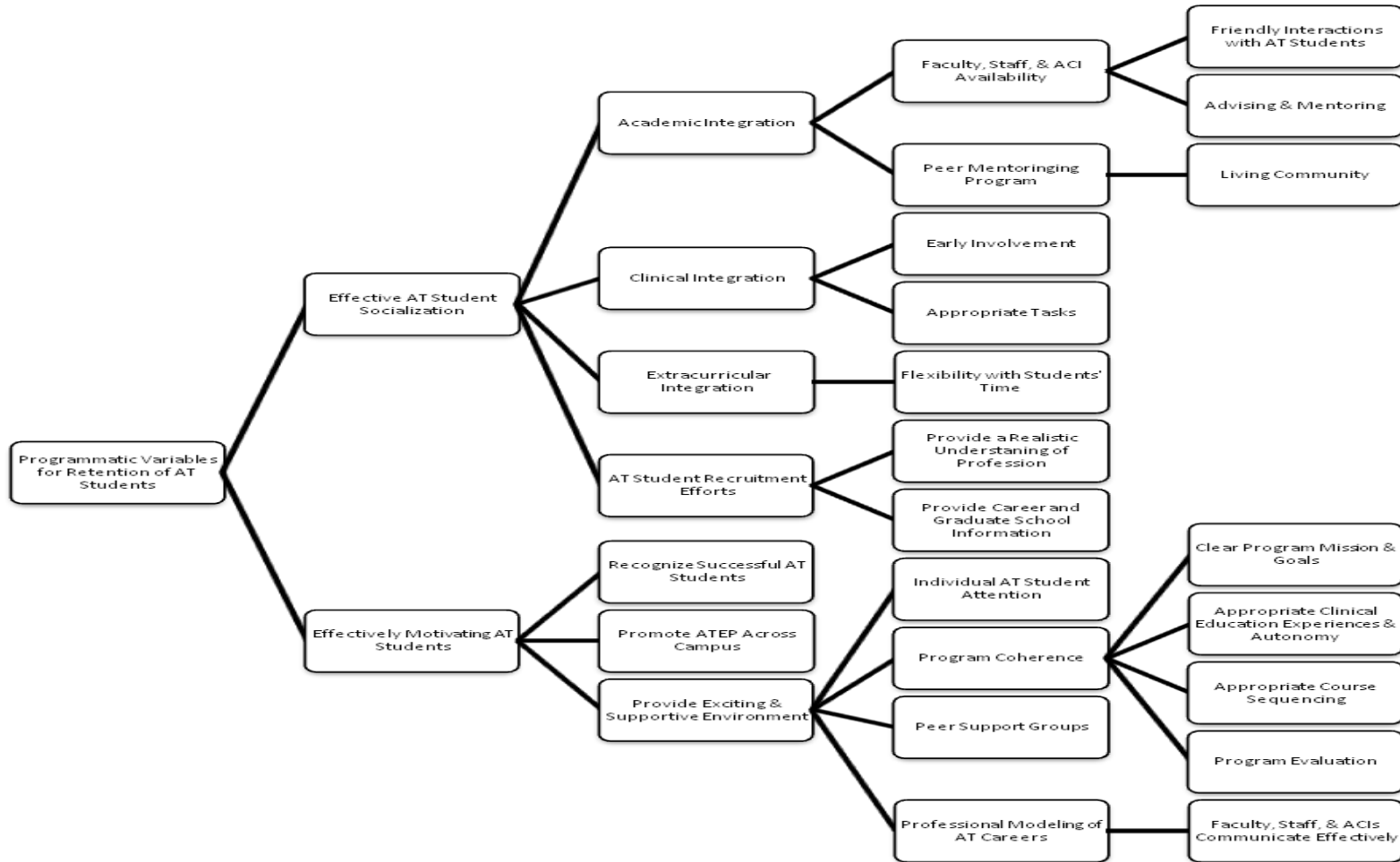


Figure 2

The Student Integration Model (Tinto, 1975)

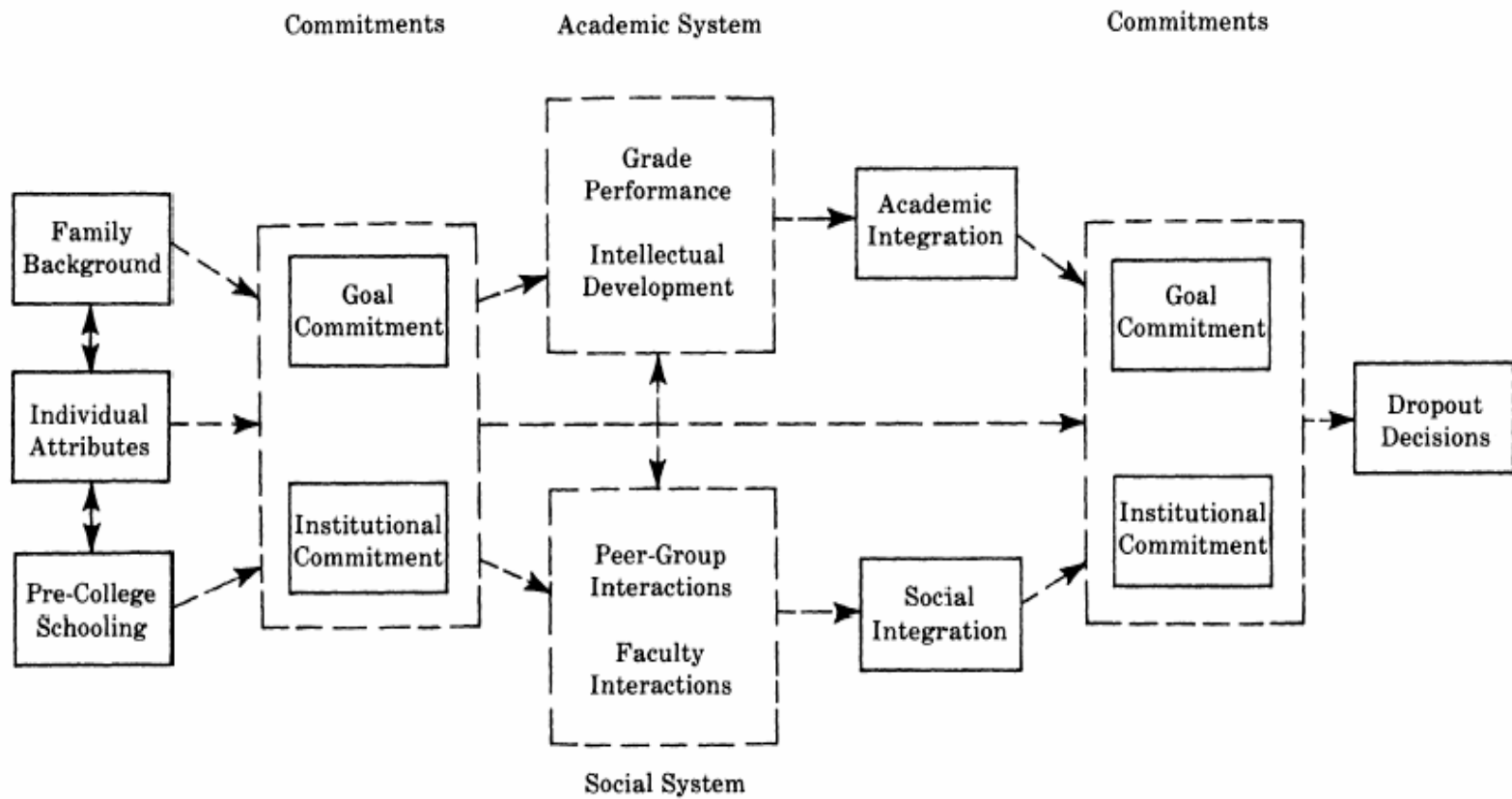


Figure 3

Theoretical Model of Student Attrition and Persistence in Athletic Training Education Programs (Dodge, 2006)

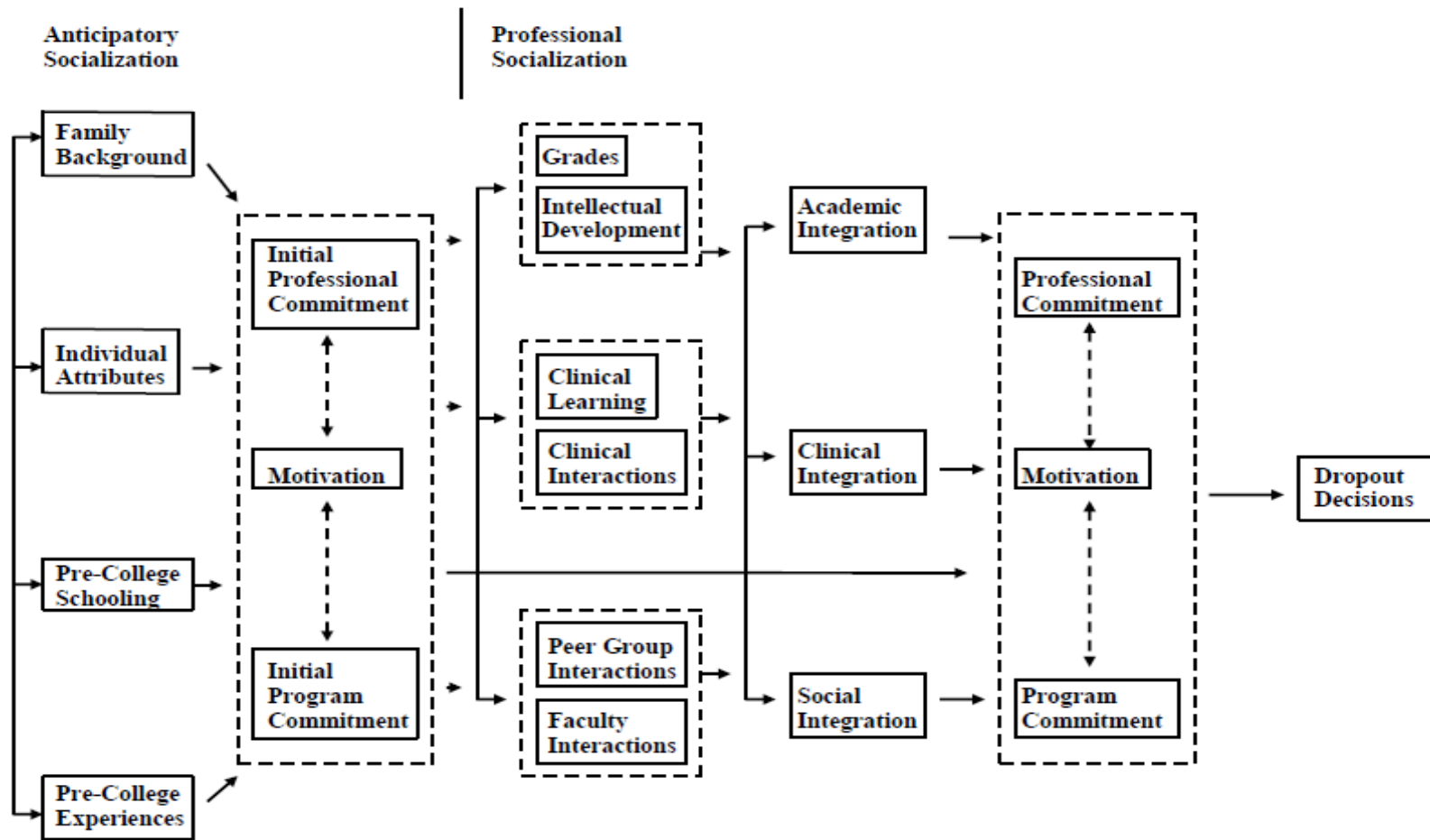


Figure 4

Scree plot for the factor analysis

