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**Factors Influencing Attrition of Students in a
Baccalaureate Nursing Program**

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A thesis
submitted in partial fulfilment
of the requirements for the degree of
Master of Education

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Abstract

A nursing shortage is looming in Canada (Canadian Nurses Association, 1997, November 4). It is imperative that as many students graduate from nursing school as possible in order to alleviate this problem. This purpose of this study was to discover the reasons for student attrition in a Canadian Baccalaureate School of Nursing. Tinto's model of college student attrition was applied as the conceptual framework. A Nursing Student Attrition Survey was completed by forty student persisters and nineteen student leavers. Comparisons between the two samples revealed significant differences in that older students, students from urban areas, and students whose mothers and fathers had less post-secondary education were more likely to leave the program of study prior to graduation. The same was found true for students with lower level intentions, goal and institutional commitment, and students with more external commitments. Students persisters were found to feel better about their academic performance and felt that they had more positive peer group interactions than did the student leavers.

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CHAPTER 1

INTRODUCTION

The Research Problem

Identification of the Problem

There will be a shortage of nurses in Canada by the year 2011 (Canadian Nurses Association, 1997, November 4). Student enrollment in, and graduation from, schools of nursing are decreasing (Nursing Task Force, 1999). For these reasons, it is imperative that nursing schools retain as many students as possible. To do so, nursing schools must be aware of the factors that influence students to leave the program. By becoming aware of these factors of attrition, nursing schools will be able to improve the experiences of their students so that the students are encouraged to remain in the program.

Recently, the Registered Nurses Association of Ontario (March 2000) published a report which outlines methods to recruit and retain nurses in Ontario in order to lessen the impact of the upcoming nursing shortage. The report does touch on recruitment of students into nursing programs; however, it fails to examine ways to retain these students once they are in programs. This study is designed to accomplish that task.

Conceptual Framework: Tinto's Model of College Student Attrition

In 1975, Vincent Tinto described a theoretical model of college student attrition. The model was later revised in 1993. The model identifies factors which lead to a student deciding to voluntarily leave a program of higher education. These factors are: family background, skills and abilities, prior schooling, intentions, goal and institutional commitments, external commitments,

academic performance, faculty/staff interactions, extracurricular activities, peer-group interactions, academic integration, social integration, and intentions. The factors, which are based on the information from extensive literature review, are described in detail in the 1975 document and then are updated in the 1993 work.

Although the model is specifically designed with regard to students who voluntarily leave a post-secondary program, this study applies Tinto's model to those students who have been dismissed for academic or institutional reasons as well. In 1993, Sudzina and Knowles identified age, gender, intentions, and prior school experiences as causative factors of academic failure of student teachers. Nel (1993) discovered that cultural background, a component of Tinto's family background category, to be a factor in academic failure of Native American children. Cultural background also was a factor in causal attributions of academic failure in an Asian-American study by Yan and Gaier (1994). Birenbaum and Kraemer (1995) also agree that ethnicity, as well as gender, plays a role in academic failure. Because so many studies of academic failure show similarities to the causative factors identified in Tinto's model of voluntary college student attrition, this model will form the conceptual framework for the present investigation of nursing students who have both withdrawn voluntarily and for academic reasons from the program of study.

The Research Study

Purpose of the Research

This study was designed to discover which characteristics, traits, and attributes in accordance with Tinto's model, contribute to student attrition in a baccalaureate program in a School of Nursing. The study focussed on the students' backgrounds, intentions, and perceptions

and the differences in these areas between a group of students who had stayed in the program at least one year and a group that had left the program voluntarily or for academic reasons. In order to assist future students choice to remain in their selected program, it is important to discover the risk factors for attrition. It is for this reason that student leavers are compared to student persisters.

Definition of Key Terms

Attrition, in this study, refers to the act of leaving a program of study both voluntarily and due to dismissal for academic or institutional reasons.

Family background includes socioeconomic status, parental educational background, location of upbringing, parental interest level in the student's education, age of entry to the program of study and ethnicity.

Student characteristics are consistent with Tinto's (1993) grouping labelled "skills and abilities." These refer to the student's academic achievement as well as personal attributes such as gender, race, and physical challenges or disabilities.

Prior schooling is any area of formal education with which the student has been involved prior to entering the studied nursing school program.

Intentions refer to the outcomes desired to be achieved by becoming a student in the school of nursing.

Goal commitment is the degree of dedication the student possesses in order to achieve his or her intentions.

Institutional commitment refers to the bond that a student experiences with the institution of higher learning.

External commitments are those aspects of the student's life which are not part of the learning atmosphere but may impact on it. These include family, employment, and financial concerns.

Academic performance refers to the grade level achieved by the student within their current program of study.

Faculty/staff interactions encompass all the exchanges that occur between students and faculty/staff. These could include an exchange as simple as a look or may, for example, even involve a friendship established between faculty and student.

Extracurricular activities are those functions which are academically oriented and are put together in order to improve the relationships among students.

Peer group interactions are all those relationships which are developed between the student and peers. Peers may include either fellow students or individuals of a similar age who are in no way involved in the student's academic life.

Academic integration refers to the degree to which the student feels a part of, and comfortable within the school of nursing. Often high academic integration is evidenced by higher grades.

Social integration refers to the sufficiency of the student's personal affiliation with other students, faculty, and staff of the school of nursing.

Student leavers refers to those students who have left their program of study for academic, institutional, or voluntary reasons.

Student persisters refers to those students who have not left their program of study.

CHAPTER 2

LITERATURE REVIEW

Nursing Student Attrition

Much research has been completed regarding student attrition in institutes of higher education. A review of this literature highlights particular areas which affect attrition of nursing students. These areas are: demographic attributes of the students, academic attributes of the students, program design and structure, faculty characteristics, and social support and pressures. These five areas will be explored followed by a description of the factors identified by Tinto (1993) to be impacts on student attrition.

Demographic Attributes of the Students

Many studies analysed demographic attributes of nursing students as they relate to success in nursing school (e.g. Billings, 1987; Campbell & Davis, 1996; Huerta, 1990; Langston-Moss, 1997; Merrill, 1998; Smith, 1990; and Williams, 1994). Huerta (1990), in a study of life change events and academic achievement of 131 nursing students enrolled in an associate degree program in Southern Texas, found that ethnic origin and age had a significant effect on student success. Williams (1994), who studied 83 successful, and 54 unsuccessful nursing students at a private university in Southern Mississippi, found that neither age nor gender were significantly related to nursing student attrition. However, Thyer and Bazeley studied 79 students in a diploma program at the University of Western Sydney, Australia. They found that older students experienced a greater degree of anxiety which lead to a higher incidence of attrition from the program. The difference in the results of these studies regarding the variable of age and its affect on attrition

remains unexplained and is an area for further investigation.

Ethnic origin of the student appeared to be a prevalent factor relating to student attrition according to Huerta (1990), Merrill (1998), and Campbell and Davis (1996). These researchers indicated that minority students had higher attrition rates than those students who are not members of a minority group. Merrill (1998) discussed the changing demographics regarding people of minority status in the United States. The increasing cultural diversity in the United States, which is occurring simultaneously in Canada, increases the demand for a culturally diverse workforce of nurses. Merrill (1998) suggests that ethnic minorities have difficulties fitting in to the academic and social components of many nursing programs. It is suggested that further study of barriers to cultural diversity in nursing programs be implemented. Campbell and Davis (1996) agree that minority students are at risk of academic failure in nursing programs due to these barriers and that organized programs should be implemented to facilitate minority student success.

Also found to have an effect on attrition rates was the location of the student in relation to the nursing program. Billings (1987) found that the student who lives closer to the school is less likely to leave the program. This may be a result of increased family support and fewer life changes as a result of attending the program of study. Marital status was found to increase student stress, which may, in turn, increase student attrition (Heurta, 1990).

Academic Attributes of the Students

Scholastic Aptitude Test (SAT) scores and grade point average (GPA) scores of pre-admission education have been found to be major indicators of nursing student success or non-success (Billings, 1987; Williams, 1994). These researchers found that students with lower SAT or GPA scores were at higher risk for attrition from the program of study. Billings (1987) also

found that high student goals, as well as previous successful completion of some courses in the program of study, decreased the rate of attrition for such students. Liegler (1997) applied Tinto's model of college student attrition to test 195 senior nursing students' satisfaction in five baccalaureate programs of study and found that academic development of the student was a significant predictor of student satisfaction. According to Tinto (1993), student satisfaction is inversely related to student attrition.

Program Design and Structure

The design and structure of a nursing program, as it relates to student attrition, includes overall philosophy of education of nurses, measures used to reduce anxiety and pressures on the students, class scheduling, and provision of adequate teaching and learning facilities.

The philosophy of the school of nursing is an important factor relating to student attrition. Adult teaching and learning principles of education and utilization of flexible methods of education, as studied by Trent (1993) utilizing a sample of 323 baccalaureate nursing students, as well as a philosophical understanding of the needs of ethnic minorities in order to decrease feelings of insignificance and powerlessness within the minority groups (Langston-Moss, 1997) should be employed. Integration of each of these factors within the philosophy of the school serves to decrease student attrition (Langston-Moss, 1997; Trent, 1993).

The program of study should be designed to incorporate measures to reduce student anxiety and pressures felt by the students. Huerta (1990) and Thyer and Bazeley (1993) found that increased feelings of pressure, both in the clinical and academic areas, and anxiety were directly proportional to student attrition. James (1994), in a study of a developmental teaching method used with 42 baccalaureate nursing students versus lecture method used with 51

baccalaureate nursing students, found that introduction of a basic skills instructional program, which taught such things as reading comprehension, significantly reduced attrition from the nursing program. This might have been due to a decrease in levels of anxiety felt by the students who had a firm grasp of basic skills of learning.

Class scheduling should be considered when attempting to reduce nursing student attrition. Smith (1990) and Hunt (1992) found that students who had left nursing programs of study had difficulties with class schedules. Smith's (1990) study of 227 former nursing students revealed that 29.9% of the students cited difficulties with class scheduling as a reason contributing to their leaving the program. The schedules likely conflicted with employment responsibilities as shown in Hunt's (1992) investigation of 250 directors of associate degree nursing programs in the United States. The directors believed that conflict between class schedule and job was the most important negative influence contributing to student attrition within their programs.

Liegler (1997) found that as students were more satisfied with the facilities and services offered by the school, the rate of attrition of those students decrease. This is congruent with Tinto's (1975) idea that students with higher institutional commitment are less likely to decide to leave a program of study.

Also of importance in designing a program of study is the integration, within the program, of supportive services for students. Many researchers have found that supportive services and student advising play a large role in retention of nursing students (e.g. Harvey & McMurray, 1997; Hunt, 1992; Smith, 1990; and Thurber et. al., 1989).

Faculty Characteristics

Leigler (1997), Watkins (1997), and Jeffreys (1993) found that student satisfaction with

faculty is important in the decision a student makes to leave the program of nursing study.

Desirable characteristics of faculty members have been identified as: flexibility (Watkins, 1997), delivers high quality teaching (Hunt, 1992), tough but fair (Watkins, 1997), caring (Hunt, 1992), and supportive (Campbell & Davis, 1996; Jalili-Grenier & Chase, 1997; Merrill, 1998; and Watkins, 1997). In a study of 74 senior nursing students, undesirable characteristics contributing to student attrition were identified by Watkins (1997) as the teacher having biases and being stern and uncaring. By becoming aware of what characteristics the teachers in a school of nursing are exhibiting, and by attempting to exhibit only desirable characteristics, student attrition could be decreased.

Social Support and Pressures

It has already been mentioned that students seek a supportive learning environment with regard to advisement, counselling, and support services. However, students also need peer support, family support, and financial support. Some pressures felt by students might be alleviated by the institutions becoming aware of these pressures and making changes for the better.

Tinto (1975) stated that peer-group interactions weigh heavily on the decision to leave a program of study. This was supported by Brown (1987) and Jeffreys (1993) who found that peer supports decreased student attrition. Brown (1997) studied two groups of nursing students who were deemed to be at risk of academic failure. The control group consisted of fifteen members, seven of which failed a subsequent course. The experimental group was made up of seven students who participated in weekly group discussions with a faculty member and their peers. None of these seven students in the peer support group failed a subsequent course that was not

successfully completed by seven out of fifteen members of the control group. None of the seven students in the experimental group withdrew from the program; whereas, two members of the control group withdrew. It is likely that the successes of the students in their subsequent courses contributed to their eventual completion of their program of study. Jeffreys (1993) supports this hypothesis in a study of nontraditional nursing students. Although this study found no significant predictors for student retention, individual student responses to the instruments suggested that collaboration between faculty, students, families, and friends is recommended to decrease attrition.

Similarly, Leigler (1997) found that social interaction with peers significantly decreased the chance that a student would leave school. In this study of 195 senior female baccalaureate nursing students from five programs in the Southwestern United States, it was found that the predictors of student satisfaction with their nursing programs included academic development, satisfaction with facilities and services, satisfaction with the faculty, and social interaction with peers. Increased satisfaction with the nursing program has a positive correlation with increased incidence of program completion.

According to Tinto (1975), however, it is important to remember that social interaction with peers should be academically oriented, for instance as an extracurricular activity, in order for the interaction to be positive rather than detrimental to the student's academic achievement. A large amount of social interaction which is not academically oriented, such as going out to social events with friends, may result in too little time allotted toward academic goals within the institution. In contrast, academically oriented social interaction, such as participation in sports or clubs on campus, leads to a stronger bond with the institution and an increased likelihood of

pursuing academic goals.

Family support has been identified as a key element of student success (Billings, 1987; Crooks & Huckle, 1994; Jeffreys, 1993; and Tinto, 1975). These studies highlight the idea that a student has higher academic achievement and less chance of attrition if the student's family displays a high degree of emotional support to the student and the choice of program of study.

Financial support is also key to retain students within a program of nursing study. Huerta (1990), Hunt (1992), Langston-Moss (1997), and Smith (1990) all found that financial pressure on students was directly proportional to increased student attrition from nursing.

Integral to the financial support issue is the common situation that many nursing students must have employment outside of school in order to support themselves financially. This causes extra pressure on the student which could lead to increased student attrition (Billings, 1987; Hunt, 1992; and Smith, 1990). The researchers argue that schools of nursing need to be aware of such outside pressures and make attempts to alleviate the affects of these pressures.

Finally, according to Langston-Moss (1997), Merrill (1998), and Campbell and Davis (1996) schools of nursing must also become aware of the needs of culturally diverse student groups. Langston-Moss (1997) put forth the idea that minority students have feelings of insignificance and powerlessness which leads them to leave their program of study. Merrill (1998) and Campbell and Davis (1996) suggest the need for support services directed to minority students in order to decrease attrition of this group.

Tinto's Model of Student Attrition

As previously mentioned, Tinto described a model of college student attrition in detail in 1975 and later revised this model in 1993. The 1993 model is depicted in Figure 1. This model

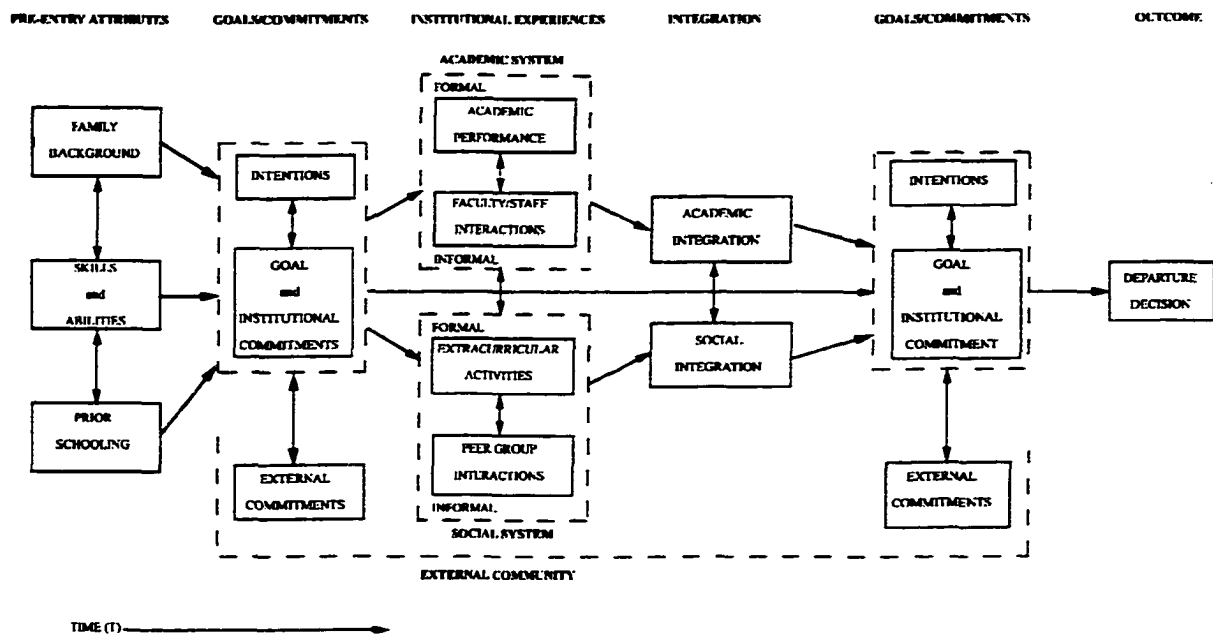


Figure 1. Tinto's Longitudinal Model of Institutional Departure (1993).

illustrates eleven areas which may affect students' decisions to depart their program of study.

These are: family background, skills and abilities, prior schooling, intentions, goal and institutional commitment, external commitments, academic performance, faculty/staff interactions, extracurricular activities, peer group interactions, academic integration and social integration.

These eleven areas form the conceptual framework for this study of both voluntary withdrawals and withdrawals for academic reasons. They are described in detail in the following sections.

Family Background

Tinto's model illustrates how family background might affect intentions and commitments which, in turn, are presumed to affect the decision to depart an institution of higher education.

Tinto (1975) states that, even when intelligence is controlled, students from lower level socioeconomic families have higher attrition rates than those from upper level socioeconomic

families. In an extensive review of the literature, Tinto (1975) argued that students are less likely to leave a program of higher education if their parents are more educated, affluent, and come from urban areas rather than rural areas. He also found that students whose parents are more interested in the education of their child, and who support their child and expect their child to complete the program of study, are more likely to finish their program (Tinto, 1975, 1993). Such family support has been identified as a key element of student success by many other researchers (Billings, 1987; Crooks & Huckle, 1994; and Jeffreys, 1993).

In regard to ethnicity and family background, Tinto (1993) makes the following statement, A white child of a college-educated family may look forward to and be rewarded for making the transition to college whereas a native American child from a poor family may find that he/she is seen as rebelling against the family and local community in going to college. (p. 95)

Tinto (1993) goes on to discuss ethnicity and family background in relation to differences between pre-university communities and university life, claiming that the larger the difference between the two, the more difficulties will be experienced by the student making the change. In particular, disadvantaged students, minority students, and students from very small rural communities experience greater difficulty adjusting to university life than other students (Tinto, 1993). In a study of life change events as they relate to academic achievement in nursing students, Huerta (1990) suggested that ethnic origin had a significant effect on stress experienced by the students. This heightened stress would appear to support Tinto's earlier findings.

Age of entry into the program is included in this category. Adult students are "more likely to encounter greater problems in finding on-campus time to study enough to meet the minimum

academic standards of the institution.” (Tinto, 1993, p. 76)

The distance of the student’s home community affects persistence in higher education (Tinto, 1993). If students must move away from their community and families in order to attend the institution, they may have greater feelings of stress and isolation which could interfere with adaptation to university life. An inability to adapt to the changes associated with entry into higher education increases the chance of attrition.

Students who stay at home while attending university may have a less stressful adaptation to university life, but could, in the long run, have a less rewarding experience than those students who have moved away from home (Tinto, 1993). This may be due to the decreased sense of belonging that the student may feel toward the institution, in other words, the decreased institutional commitment. Upon reviewing the 1993 model, it is apparent that a lack of institutional commitment would raise the incidence of student departure (Tinto, 1993).

Tinto (1993) also postulated that students who live at home would have be influenced by external forces, such as family and peer-groups, which may draw them away from their education if the external forces are non-supportive. Alternatively, supportive external forces would heighten the chance that students would stay in their program of study.

Finally, financial resources are included in this category. The less stress placed on the student in regard to finances, the greater chance the student has to complete their studies (Tinto, 1993). Huerta (1990) also found that the academic environment contributed to stress by producing financial pressures. Other researchers included financial problems as a major reason for increased student attrition (Benda, 1991; and Smith, 1990). In 1991, Benda completed a study of 565 bachelor’s degree nursing students regarding their pre-entry characteristics and student

attitudes. Benda then tracked the students to determine which students dropped out of their programs, and compared the group of dropouts to the retained students. Among the 188 freshmen included in the study, 33 of whom dropped out, an increased confidence in their ability to pay for their schooling contributed to retention in the program. Benda's other findings will be discussed in subsequent sections. Smith's (1990) research supports this finding in her study of 227 non-returning freshman and sophomore nursing students at Texas Woman's University. These students ranked "not enough money to support self" as the number two reason, out of 27 reasons, for not returning to their program of study.

Skills and Abilities

This category is consistent with the category of "Student Characteristics" in this study. Tinto (1993) stated that skills and abilities, which include personal attributes, such as sex, race, and physical challenges, have an impact on the student's decision to withdraw from higher education. In regard to skills and abilities, the measured academic ability of the student, as reflected by testing and grade performance, is often the chief criterion used in admitting a student to nursing school. Tinto's model proposes that students of higher academic ability have a much greater chance of completing a program in higher education than those students of lower academic ability. This agrees with the work of Billings (1987), Liegler (1997) and Williams (1994) which was described previously in this chapter.

Social skills are included in this category. Students with superior social skills will have greater chance of completing their program of study (Tinto, 1993).

Prior Schooling

As mentioned previously, Tinto's model proposes that grade performance is a significant predictor of success in later schooling, but the characteristics of the student's pre-college/university school and the particulars of the student's experience within that school are important elements contributing to the upcoming success or failure of further educational endeavours (Tinto, 1975). For instance, the amount of involvement of the academic staff of the high school with the student, or the amount of involvement of the student in extracurricular activities, both directly and indirectly affect the student's expectations, aspirations and motivations while the student is in high school and as the individual moves on to higher education (Tinto, 1975). In a study of nursing students in a distance education program, Trent (1993) concluded that students from higher level educational backgrounds were less likely to find that academic advising played a significant role in assisting them to complete their course of study. Perhaps this is due to the student's prior schooling experiences which assisted them to adjust to the new form of learning. This is consistent with Tinto's hypothesis that prior educational experiences have an impact on current success.

Intentions

Student intentions upon entering a program of study in higher education have a major impact on an eventual decision to withdraw from that program: "Intentions or goals specify both the level and type of education and occupation desired by the individual" (Tinto, 1993, p. 115). For example, the student who possesses a higher reaching intention, such as eventual attainment or advancement in the career of choice, will have greater chance of completion of their program of study. A student who does not see beyond completion of the program, and whose intention

upon entering the program of study is simply to learn or graduate, will be more likely to withdraw from their program (Tinto, 1993).

Benda (1991) found a positive effect on retention when students expressed an expectation of continued enrollment as well as an expectation to graduate. She also concluded that a negative effect on retention occurred when students valued education for learning rather than to get a job. These findings support Tinto's suggestion that as student intentions extend further into and beyond their education alone, students are more likely to persist in their education.

Goal and Institutional Commitment

The commitment of a student both to their goals and to the institution of higher education has a profound effect upon departure decisions (Tinto, 1993).

Goal commitment is very much related to intentions. For instance, if the student's intentions are not simply completion of college, but are to advance in a particular career or occupation, or to move on to further education, then the student is more likely to feel motivated to complete the first step in that plan, which is to graduate from their program of study. It is the commitment to the achievement of the final goal which drives students to remain in their program of study (Tinto, 1993).

Tinto (1993) stated that if students perceive a need to complete college in order to be able to obtain work in the occupation they choose then they are more likely to do well in their chosen programs of study. This is an example of intentions but can be related to goal commitment by ascertaining how devoted the student is to attainment of their intention.

Institutional commitment is described as the degree to which students becomes socially

integrated within the educational institution and come to feel a bond with that institution (Tinto, 1993). Without such a commitment, if students' expectations are not met then there is a greater occurrence of transfer to another institution or attrition from higher education altogether. For instance, if students join clubs and participate in activities within the institution, then they have greater reason not to leave the institution when a difficulty arises in their education. This idea is supported by Liegler (1997) who found that senior nursing students were more satisfied with their programs if they perceived greater academic integration with the institution. This academic integration included satisfaction with the faculty, student development, and student involvement and achievement. Greater satisfaction with the program would lead to greater retention of students.

External Commitments

Also integral to the process of institutional departure is the idea that students who lack financial resources and time to commit to their education within the institution are less likely to feel committed to that institution. For instance, a substantial amount of family and financial concerns could impact upon the student and cause them to feel that their education is secondary to those concerns. Such concerns would contribute to student attrition (Tinto, 1993). However, Tinto (1975) points out that some students will remain in school even when the financial burden is so great that they cannot provide themselves with adequate food to eat. This is an example of goal commitment overpowering financial concerns.

Benda (1991) also came to the conclusion that external commitments negatively impacted student retention. This conclusion was supported by Huerta's (1990) study of stresses on nursing students and Hunt's (1992) study of the opinions of school of nursing directors regarding reasons

for student attrition within their programs. Hunt (1992) found that conflicts between class schedule and jobs were cited as the most influential factor in student attrition from nursing school.

Academic Performance

Academic performance, viewed by Tinto (1993) as a formal aspect of the institutional experience, has been singled out as the most important factor relating to student success by many studies (Benda, 1991; Billings, 1987; Tinto, 1975; Williams, 1994). However, Tinto (1975) also described a study by Hackman and Dysinger (1970) which showed that students with high level institutional and goal commitment and lower grades were more likely to persist in college than students with better grades and low level institutional and goal commitment. This highlights the idea that, although grade performance is an important factor, there are many factors which intertwine to contribute to attrition in higher education.

Faculty/Staff Interactions

Tinto's (1993) model postulates that student-teacher interaction is a largely informal feature of the student's institutional experience. Increased social interaction between students and faculty is assumed to decrease student attrition. This suggests that interaction both increases institutional commitment and academic integration of the student which, in turn, lowers student attrition. Further, the students' grades are expected to increase proportionate to increased student-teacher social interaction due to the fact that grading students is never a completely objective practice. As the students and teachers become more familiar with one another, the students' grades will often rise (Tinto, 1975). Due to increased grades, the attrition level would decrease in this situation.

Interactive experiences which further one's social and intellectual integration are

seen to enhance the likelihood that the individual will persist within the institution until degree completion, because of the impact integrative experiences have upon the continued reformulation of individual goals and commitments. Positive integration serves to raise one's goals and strengthen one's commitments both to those goals and to the institution within which they may be attained. (Tinto, 1993, p. 116)

If faculty and staff of the institution make themselves more open to interacting with the students in a positive, informal manner, student attrition should decrease.

Pre-admission advisement of students by faculty, with the goal of decreasing student attrition, has been studied by many researchers. Harvey and McMurray (1997), Smith (1990), and Trent (1993) all found that pre-admission advisement of potential nursing students served to decrease attrition. They suggested that a major reason for student withdrawal was a lack of realistic expectations upon admission to the program. For instance, Harvey and McMurray (1997) studied 57 returning and 35 non-returning diploma nursing students in Australia. They found a significant difference between returning and non-returning students regarding whether they considered the content of the nursing program to differ from what they had thought a nurse would learn. 59.6% of returning students cited a difference whereas 81.3% of non-returners perceived a discrepancy. This result coincides with Harvey and McMurray's (1991) finding that student leavers sought out significantly less pre-admission advisement than student persisters. Smith (1990) agrees with this finding when her study found that problems with class scheduling, financial resources, and employment responsibilities were major reasons for students to discontinue enrollment in their nursing program. Smith (1990) found that implementation of a

pre-admission advisement program highlighting the expectations of the nursing program served to decrease student attrition. Finally, Trent (1993) found a positive relationship between academic advisement and decreased attrition in a study of 323 nursing students in an RN/BSN program.

Students who perceive faculty as caring, flexible, supportive, and understanding are less likely to leave that program of study (Hunt, 1992; Liegler, 1997; Watkins, 1997). However, in a study of non-traditional nursing students, Jeffreys (1993) concluded that faculty must collaborate with family, friends, and students in order to provide a supportive atmosphere more conducive to academic success than would be the case with faculty commitment alone.

Extracurricular Activities

It has been proposed that social interaction with peers can be excessive to the point where it leads to poor academic performance and increased student attrition (Tinto, 1975). For example, spending many nights with friends in the campus pub could interfere with academic success. Tinto (1975) also suggests that social interaction could decrease student attrition if it is of a strong academic orientation through, for example, organized extracurricular activities. The model distinguishes between formal and informal aspects of social interactions (Tinto, 1993) and extracurricular activities are seen as a formal aspect. Positive interactive experiences with peers through formal extracurricular activities, which work in congruence with academic demands on the student, are expected to lead to increased social integration, which will then decrease the likelihood of withdrawal from the institution of higher education (Tinto, 1993). This was supported by Benda (1991) who suggested that perceived control by institutional rules had a positive effect on retention, whereas students' confidence in their social life had a negative effect on retention.

Peer Group Interactions

Peer group interaction is the informal aspect of the social system in the institutional experience of the students (Tinto, 1993). Students who perceive a higher degree of peer support through friendship are more likely to persist in their program of study (Tinto, 1993). However, since peer group interactions include those interactions with members of the community external to the institution, student interaction with peers who do not support their educational goals and commitments could lead the student to withdraw from the program of study.

Minorities including African Americans, Hispanics, and Native Americans, are hypothesized to sometimes experience difficulty becoming socially integrated due to feelings of marginality and social isolation from peers (Tinto, 1993). This hypothesis could likely be applied to Native Canadians as well. It is also proposed that older adult students experience such difficulties in finding and becoming involved in peer groups within their institutions due to the fact that many of the students in their program will be much younger (Tinto, 1993).

Brown (1987) conducted a study of seven students who had done poorly in one nursing class. She found that after placing these students in a peer support group which had weekly meetings and was chaired by a faculty member, none of the students failed in the subsequent academic year. The expected failure rate without the support group was 46%. It is possible that this result was impacted by the Hawthorne effect since both the subjects and support group facilitator were aware of the study and expectations from the study (Roberts and Burke, 1989). However the nature of the study demanded that such an awareness occur as this awareness served as the basis for the peer group. Although this study is of a small group, it appears to support Tinto's (1993) suggestion that peer group support, as long as it is academically oriented, would

decrease student attrition.

Academic and Social Integration

Academic performance and faculty/staff interactions were proposed by Tinto (1993) to lead to academic integration while extracurricular activities and peer group interactions foster social integration. The model also proposes that social integration impacts institutional commitment more than academic integration. Although a high level of social integration could entice students to remain in school despite low levels of academic integration, because universities reward academic achievement, students may not be successful in completing their chosen programs of study. Conversely, it may be postulated that a high level of academic integration may be associated with lower levels of social integration which may not adversely affect the student's persistence in the program of study (Tinto, 1993).

The model then reintroduces intentions and goal and institutional commitment as being associated with academic integration, social integration, and external commitments (Tinto, 1993). The effect of these factors on students' intentions and goal and institutional commitment is what results in the students' decisions regarding departure from their program of study at that institution (Tinto, 1993).

After analysing Tinto's (1993) longitudinal model of institutional departure, it is apparent that many factors may contribute to a student's reasons for leaving their program of study. No single factor is responsible for such an occurrence. Therefore, it is necessary to understand which factors contribute most to student attrition so that these factors can be taken into account to improve the program. This study is designed to promote such understanding as it relates to Baccalaureate nursing education.

CHAPTER 3

DESIGN OF THE STUDY

Problem Statement

This study was designed to determine which factors associated with student attrition, according to Tinto's (1993) model, contribute to nursing student attrition in a Canadian Baccalaureate School of Nursing. Consistent with Tinto's model for student attrition it was expected that the following variables would be associated with attrition:

1. Family background which includes the parental level of education, supportiveness of the students' families, and satisfactory financial resources for the students.
2. Skills and abilities
3. Prior schooling
4. Intentions
5. Goal commitment
6. Institutional commitment
7. External commitments
8. Academic performance
9. Faculty/staff interactions
10. Extracurricular activities
11. Peer group interactions

Academic and Social Integration will not be considered as a separate variable. This is due to the fact that, according to the model, academic integration is solely made up of academic

performance (expectation #8) and faculty/staff interactions (expectation #9). As well, social integration is a combination of extracurricular activities (expectation #10) and peer group interactions (expectation #11). Therefore, as the components of academic and social integration are being studied separately, the resulting differences between the two groups in these two areas will be discovered through the analysis of the components.

Design

Participants

Two independent samples of students and former students participated in the study. One sample of ninety-five students who had voluntarily left the program of nursing study, or who had left for academic reasons, was selected from files held by the School of Nursing, Lakehead University. The students were chosen based on availability of contact information held in the files at the School of Nursing. Due to the nature of this sample group, that is, that these students had left the program and had likely moved after leaving, much current contact information was lacking and it was anticipated that many surveys would not reach the intended participants. Also it was anticipated that some students who had left the program of study prior to graduation might retain negative feelings regarding their experience and would be less likely to return a completed survey. Therefore, after receiving appropriate clearances from the Ethics Committee at Lakehead University, surveys were sent out to all student leavers for whom a possible contact address was found. Twenty-five surveys sent to student leavers were returned-to-sender due to the lack of current addresses for the students. Seventy surveys remained within the public domain, nineteen of which, or 25.3%, were completed and returned by participants. This rate of return is consistent with the findings of Judd et. al. (1991) who state that rates of return for mailed surveys are

generally less than fifty percent. Due to the anticipated low rate of return, a follow-up letter was sent to each student leaver.

A second sample of forty second, third, and fourth year nursing students was surveyed in class in order to provide for comparison between student leavers and persisters. These participants were contacted while in their classrooms with permission of the School of Nursing and the specific course instructors. A description of the study was given verbally along with a written cover letter to each participant. The participants were provided with the choice to complete the survey or not. They were informed that no penalty was attached for their refusal to participate. These in class surveys were conducted during the first two weeks of February, 2000.

Instrument

A Nursing Student Attrition Survey was mailed out to the student leavers along with a cover letter and self-addressed, stamped, return envelope. Also, a Nursing Student Attrition Survey and cover letter was given to each student persister. The surveys for leavers and persisters were the same except for minor changes from past to present tense. Items regarding age, ethnicity, and distance of the student residence from the University were included. Factors likely to affect student attrition, according to Tinto (1993), were arranged using a Likert-type response format. This survey instrument was an original instrument based on Tinto's (1993) model. An open-ended section was provided for students to express any other concerns which they felt influenced their decision to leave or to remain in the program of study.

Method

Data were gathered during the winter of 2000. Surveys were administered or mailed to the sample participants. The instrument was not piloted to nursing student leavers prior to

dissemination but was reviewed for content by two student leavers from other programs, as well as by the Ethics Committee at Lakehead University. A cover letter accompanied the surveys. A copy of the cover letter for student leavers is found in Appendix A, a copy for persisters in Appendix B, and a copy of the survey is found in Appendix C for student leavers and Appendix D for student persisters. One follow-up letter for student leavers was sent to remind them of the importance of returning the surveys (Appendix E). Due to the anonymity of the survey, the effect of the follow-up letter on obtaining additional participants remains unclear.

Data Analysis

Comparisons between the two groups were made using Microsoft Excel to calculate descriptive and inferential statistical analysis of the data. Descriptions of this computer program and methods employed to utilize this program are found in Appendix F. The open-ended area of remarks on each survey was analysed for emergence of themes related to attrition. A cross-tabulation of the data for the Likert-type scale items of the questionnaire can be found in Appendix G.

It was ensured that each statement in the Likert-scale area was scored directionally the same. The students were asked to rate each statement in a range from “strongly agree” to “strongly disagree.” Most of the statements were worded so that answers of “strongly agree” would mean that the student, according to Tinto (1993), would be more likely to stay in their program of study. The students’ answers were scored from one to five with a score of one corresponding to “strongly agree,” two to “agree,” three to “no opinion,” four to “disagree” and five to “strongly disagree.” In this scoring system, a lower score would mean that the student was more likely to remain in their program of study.

However, in order to change the ways in which the students had to answer, the statements in lines 15 to 21, and 51 were reversed so that answers of “strongly disagree” would suggest that the student was more likely to remain in the program. When scoring these items, the scoring system was reversed so that a score of one corresponded to “strongly disagree” whereas a score of five corresponded to “strongly agree.” In this way, the scoring system continues to ensure that a lower score means that the student was more likely to remain in the program.

The data were grouped into eleven categories which corresponded to Tinto’s Model of College Student Attrition (1993). T-tests, assuming equal variances, were performed on each of the eleven categories to test for the significance of the difference between the mean answers of the persisters and leavers. The results of these tests are reported in the following chapter.

CHAPTER 4

RESULTS

In this study, two independent samples of nineteen student leavers and forty student persisters were contacted. As the purpose of this study was to determine which, if any, of eleven items from Tinto's Model of College Student Attrition (1993) relate to attrition for this group of students, the collected data from the Likert-scale portion of the questionnaire has been analysed within these groups rather than individually. The questions posed to every participant were then grouped into the eleven categories of family background, skills and abilities, prior schooling, intentions, goal commitment, institutional commitment, external commitments, academic performance, faculty/staff interactions, extracurricular activities, and peer group interactions. The specific items studied in each group are explained in the following sections. These groupings of items assumed each item was of equivalent importance in measuring a common variable, permitting summing scores within the grouping for analysis.

Family Background

Family background was explored with specific regard to age of entry into the program of study, ethnicity, location of the students' homes including distance from the university and whether the students were raised in urban or rural environments, education levels of both the mothers and fathers, the degree of lifestyle change required to attend the program of study, and the support of the families of the students in the areas of finances, emotional support, and family expectations and encouragement. The results of these subcategories are discussed in the following sections.

Age

The mean age of entry into the program of study at the school of nursing was 22.8 years ($SD = 5.53$) for the student leavers as compared to 20.1 years ($SD = 3.40$) for student persisters. Using a two-tailed two sample t-test assuming equal variances, this difference was found to be significant, $t(50) = 2.25$, $p < 0.05$. This means that student leavers were older, on average, by 2.7 years, than student persisters when they started the nursing program. Seven respondents did not report an answer to this item and were excluded from the calculations. This is consistent with the expectation, based on Tinto's (1993) model, that older students would have a higher degree of departure.

Ethnicity

The ethnic backgrounds of both student leavers and student persisters are extremely diverse. However, students of Canadian Aboriginal ethnicity are specifically studied as the School of Nursing provides a Native Nurses Entry Program (NNEP) to assist Aboriginal students who wish to enter the regular nursing program. The number of Canadian Aboriginal students who had left the nursing program prior to graduation compared to students of other ethnic backgrounds is shown in Table 1. Due to low cell expected frequencies no further statistical analysis was performed.

Table 1

Frequency for Persistence versus Ethnic Backgrounds

Ethnicity	Frequency of Leavers	Frequency of Persisters
Other Ethnicity	10	31
Canadian Aboriginal	6	6

* Note: Three persisters and three leavers failed to report ethnicity.

Location of the Home

The locations of the students' homes in regard to the distance from the program of study are depicted in Table 2. Also included in this section are the rural or urban settings of the homes.

Geographical locations of the homes, and presumably the locations of the students' main support systems, are similar between the two groups. As the studied school is located in Thunder Bay, it may be noted that each group shows fewer enrolled students as the distance from Thunder Bay increases geographically, with the exception of a larger number of students hailing from Southern Ontario where the population is quite dense. Table 2 shows the frequencies of students from different geographical locations.

Table 2

Frequency for Persistence versus Locations of Students' Homes

Location	Frequency of Leavers	Frequency of Persisters
Thunder Bay	7	19
Northwestern Ontario	3	4
Northern Ontario	2	5
Southern Ontario	6	11
Canada (other than Ontario or Manitoba)	1	0

* Note: One persister failed to report the location of their home.

Table 3

Frequency for Persistence versus Urban and Rural Settings of Students' Homes

Setting of the Home	Frequency of Leavers	Frequency of Persisters
Urban	12	19
Rural	4	17

* Note: Three student leavers and four student persisters did not indicate the settings of their homes.

A Chi Square Test of Independence on the data in Table 3 showed that persistence in the program of study is dependent on the urban versus rural setting of the students' homes ($\chi^2(1, N = 52) = 10.487, p < 0.01$). In this instance, the observed numbers of student leavers hailing from urban homes are significantly higher than what should be expected if the two variables were independent. This is inconsistent with the expectation, based on Tinto's (1993) model, that more student leavers would come from rural homes.

Parents' Educational Levels

Tables four and five detail present data regarding parents' achieved levels of education. Student leavers had seven mothers who had completed some post-secondary education, whereas student persisters had twenty-five mothers at this same level. A Chi Square Test for Independence was performed based on the groupings of "no post-secondary education" and "some post-secondary education" as presented in Table 4. It was found that student persistence is significantly associated with mothers' level of education ($\chi^2(1, N = 58) = 8.598, p < 0.01$). In this case, students are more likely to complete the program of study if their mother has some level of post-secondary education. This is consistent with the expectation, based upon Tinto's (1993) model, that higher parental levels of education encourage persistence in the program of study.

Table 4

Frequency of Persistence/Departure and Maternal Educational Level

Level of Schooling	Frequency of Leavers*	Frequency of Persisters
No Post-Secondary Education		
Some elementary school	5	2
Completed grade eight	0	1
Some high school	2	3
Completed high school	4	9
Subtotal	11	15
Some Post-Secondary Education		
Trades certificate	1	2
Some college	2	4
Some university	1	1
Completed college diploma	2	7
Completed university degree	1	11
Subtotal	7	25

* Note: One student leaver did not report the education level of his/her mother. All persisters reported. The subtotals were utilized in the Chi Quare Test for Independence to determine if a relationship existed between persistence and educational levels of the respondents' mothers.

Post-secondary education of respondents' fathers was examined in relation to attrition (Table 5). Ten of the fathers of student leavers had some post-secondary education as compared to thirty-four of the fathers of student persisters. A Chi Square Test for Independence, based on the distinction between "no post-secondary education" and "some post-secondary education" as reported in Table 5, also shows that persistence is dependent upon the father's level of education ($\chi^2 (1, N = 58) = 5.877, p < 0.05$). This indicated that students are more likely to persist in the program if their fathers have some post-secondary education. This is consistent with the expectation, based on Tinto's (1993) model, that higher parental levels of education encourage persistence in the program of study.

Table 5

Frequency of Persistence/Departure and Paternal Educational Level

Level of Schooling	Frequency of Leavers*	Frequency of Persisters
Basic Education		
Some elementary school	5	2
Completed grade eight	0	0
Some high school	2	2
Completed high school	1	2
Subtotal	8	6
Post-Secondary Education		
Trades certificate	2	4
Some college	2	5
Some university	0	2
Completed college diploma	0	9
Completed university degree	6	14
Subtotal	10	34

* Note: One student leaver did not report the education level of his/her father. All persisters reported. The subtotals were utilized in the Chi Square Test for Independence to determine if a relationship existed between persistence and educational levels of the respondents' fathers.

Lifestyle Change and Family Support

Students were questioned regarding Family Background. The grouping of Family Background items includes questions regarding lifestyle change required to attend the program of study and the amount of family support perceived by the students. These items, along with the mean answers given by the participants, are presented in Table 6.

A two sample two-tailed t-test, assuming equal variances, was performed on the items grouped according to the category of Family Background. Each of the nine items from the survey which corresponded to the Family Background category were scored on a five-point Likert-type response scale as one "strongly agree" through five "strongly disagree." The nine items are assumed to have equivalent importance for the category. Each respondent's scores was summed and a two sample two-tailed t-test, assuming equal variances, was performed on the means of the summed scores of the student leavers and the mean of the summed scores of the student persisters. No significant difference was found between the leavers and persisters ($t(57) = 1.30$). This is not consistent with the expectation arising from Tinto's (1993) model that student persisters would have a more supportive family background than student leavers.

Table 6

Student Perceptions of Family Support for Participation in the Nursing Program

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
My lifestyle did not change very much when I started university.				
I did not move away from my family to attend this university.				
I did not move away from my community to attend this university.				
I have an adequate amount of financial support from my family.				
I have an adequate amount of emotional support from my family.				
My family shows a supportive interest in my education.				
My family expects me to complete my degree.				
My family rewards me for my achievements toward my degree.				
My family encourages me to stay in this university.				
Total (Grouped Data)	20.89	6.09	19.00	4.79

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Grouped Data refers to the mean scores calculated from the summed items for Leavers and Persisters.

Student Characteristics

Student characteristics were explored with regard to: gender, prior level of education and achieved grades, minority status, physical disabilities, learning disabilities, and social skills. This general category is similar to Tinto's (1993) category labelled Skills and Abilities.

Gender

Upon reviewing gender, it was found that student leavers consisted of four males and fourteen females. On the other hand, student persisters consisted of two males and thirty-eight females. No test for Independence was performed on this data due to the small sample sizes.

Prior Level of Education and Achieved Grades

The levels of education achieved by the participants before entering the nursing program are shown in Table 7. A majority of the students in each sample had completed grade 13/OAC prior to entering the nursing program. However, a larger number of leavers (Table 7) compared to persisters had completed the Native Nurses Entry Program (NNEP). The Lakehead University Calendar 2000-2001 describes the NNEP as:

A nine month preparation program designed to provide the necessary skills and academic preparation required for successful completion of the four (4) year nursing degree program.

All frequencies were too small to permit statistical analysis.

Table 7

Frequency of Persistence/Departure and Highest Grade Level Achieved Prior to Entering the Nursing Program

Grade Level	Frequency of Leavers	Frequency of Persisters
grade 12	0	2
grade 13/OAC	9	24
Native Nurses Entry Program	4	1
some college	1	1
some university	2	7
college diploma attained	1	1
university degree attained	2	4

Average grade levels attained by students in high school before entry to the nursing program are also included in this category. Table 8 shows the distribution of grades for the two groups. Participants were classed as high achievers if they had high school grade averages of 80 percent or higher, and low achievers if their high school grades were on average 79 percent or lower. A Chi Square Test of Independence performed on the high achievers and low achievers in Table 8 failed to show that persistence in the program of study was associated with average grades attained in high school, $\chi^2 (1, N = 58) = 0.093$. This is not consistent with the expectation, based on Tinto's (1993) model, that higher high school grades are associated with persistence in the program of study in post-secondary education.

Table 8

Frequency of Persistence/Departure and Average Grade Attained in High School

Average Grade	Number of Leavers	Number of Persisters*
Low Achievers		
C (60-69%)	3	4
B (70-79%)	9	19
Sub-Total	12	23
High Achievers		
A (80-89%)	7	14
A+ (90-100%)	0	2
Sub-Total	7	16

* Note: One student persister did not report an answer to this question and so was excluded from statistical analysis.

Minority Status, Physical Disabilities, Learning Disabilities, and Social Skills

The areas of minority status, physical disabilities, learning disabilities, and social skills were explored using nine items employing a Likert-type response scale. Table 9 reports the mean responses for both student leavers and student persisters. The mean responses for leavers and persisters were compared for each item. Two-tailed two-sample t-tests assuming equal variances were performed on each item in Table 9. No significant difference was found in the area of Student Characteristics between the two samples (Table 9). This is inconsistent with the expectation arising from Tinto's (1993) model that minority students, students with physical and learning disabilities, and students with poor social skills are more likely to leave the program.

Table 9

Student Perceptions of Minority Status, Physical Disabilities, Learning Disabilities, and Social Skills

Item	Leavers		Persisters		t	p
	M	SD	M	SD		
I am a visible minority.	3.79	1.55	4.03	1.27	0.62	N.S.
My visible minority status affects my schooling.	4.37	0.83	3.95	1.18	-1.39	N.S.
My gender affects my schooling.	4.21	1.03	4.18	1.06	-0.21	N.S.
I am physically challenged.	4.73	0.56	4.85	0.48	0.80	N.S.
My physical challenge affects my schooling.	4.47	0.84	4.55	0.81	0.33	N.S.
I have a learning disability.	4.47	0.90	4.68	0.80	0.87	N.S.
My learning disability affects my schooling.	4.32	1.00	4.45	0.90	0.62	N.S.
I am outgoing.	2.21	0.85	1.95	0.98	0.99	N.S.
I find it easy to make new friends.	2.05	0.78	1.93	0.88	0.55	N.S.

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Degrees of freedom were 57 for each item.

Prior Schooling

Prior Schooling was explored in terms of the setting of the schooling (rural or urban), how well students felt their prior schooling prepared them for the program of study and the extent of perceived difference between prior schooling and university life.

The results are similar for the two samples. Four student leavers and ten student persisters had previously attended school in rural locations. Twelve student leavers and twenty-four student persisters indicated urban settings for previous schooling. Two student leavers and five student persisters claimed to have attended both rural and urban schools prior to attending university. One student leaver and one student persister did not report an answer in this area. Because of small cell frequencies further statistical analysis was not appropriate.

The responses regarding the adequacy of preparation of prior schooling and the perceived differences between prior schooling and university life are presented in Table 10. The data for each of these items were analysed using two-tailed two-sample t-tests assuming equal variances. No significant difference was found between the two samples for both items (Table 10). This is inconsistent with the expectations, based on Tinto's (1993) model, that student persisters would have felt better prepared by prior schooling than student leavers, and that student persisters would have perceived less of a difference between prior schooling and university than student leavers.

Table 10

Student Perceptions of Adequacy of Prior School Preparation for University Life

Item	Leavers		Persisters		t	p
	Mean	SD	Mean	SD		
I feel well prepared by prior schooling to succeed in the nursing program.	2.21	0.98	1.98	0.89	0.92	N.S.
I do not perceive a large difference in university life as compared to prior educational experiences.	3.53	1.02	3.60	1.08	-0.25	N.S.

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Degrees of freedom were 57 for each item.

Student Intentions

The intentions of the participants before entering the program were examined with regard to expectations for completion of their studies, the main goals of their education and the four expectations reported in Table 11.

The four items in Table 11 were assumed to equally assess aspects of intentions to complete the program. They were grouped together by summing responses of each participant and comparing means by a one-tailed two sample t-test assuming equal variances. A significant difference was found between the groups, $t(57) = 3.13$, $p < .05$. Student persisters showed a stronger intention to complete the nursing program than did student leavers which is consistent with the expectation based on Tinto's (1993) model.

Table 11

Student Perceptions of their Career Intentions while Enrolled in the Nursing Program

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
I feel that I am bettering myself by working on a degree in nursing.				
I intend to complete the nursing program.				
I intend to become a nurse.				
I need to complete my degree in order to enter the occupation I wish.				
Total (Grouped Data)	8.16	2.87	5.95	2.36

Note: Items employed a five-point Likert-type response scale scored one “strongly agree” through five “strongly disagree.” Grouped Data refers to the mean scores calculated from the summed items for Leavers and Persisters.

Students were asked to indicate the level of education they had expected to complete when entering the nursing program (Table 12). The responses of the persisters and leavers appeared similar. Table 13 shows student responses regarding their goals at the time when they began their nursing program. Leavers and persisters appeared similar in this area as well. Due to low cell frequencies, no further analysis was pursued in either area.

Table 12

Frequency of Persistence and Student Expectations at Enrolment of Completion Levels

Level	Frequency of Leavers	Frequency of Persisters
Year one	0	1
Year two	1	0
Year three	0	0
Year four	13	31
Nurse Practitioner Certificate	4	4
Masters Degree	1	3
Doctoral Degree	0	1

Table 13

Frequency of Persistence and Student Perceptions, at Enrolment, of the Goal of Education

Goal	Frequency of Leavers	Frequency of Persisters
enter any program in higher education	0	1
enter a nursing program in higher education	1	0
attain any degree	0	1
attain a degree in nursing	8	17
become a nurse	6	10
obtain employment as a nurse	3	8
increase knowledge of health care	0	2
increase level of education generally	1	1

Personal Goal Commitment

Goal Commitment was explored using six items employing a Likert Scale (see Table 14). The items were assumed to measure the same variable and to conform to an interval scale. The sums of the scores for each item were grouped together and means for the leavers and persisters were compared using a one-tailed two sample t-test assuming equal variances. A significant difference was found, $t(57) = 5.29, p < .01$. This indicates that student persisters scored higher for goal commitment than did student leavers. This is consistent with the expectation arising from Tinto's (1993) model that persisters are more committed to their final goals than are the leavers.

Table 14

Student Perceptions of Personal Goal Commitment

Item	Leavers		Persisters	
	M	SD	M	SD
My aspirations reach beyond nursing school.				
My aspirations require a degree in nursing.				
I am committed to the goal of becoming a nurse.				
I am committed to the goal of completing a degree in nursing.				
The availability of nursing employment has increased while I am in nursing school.				
My life goals have not changed after entering university.				
Total (Grouped Data)	15.95	4.29	10.28	3.62

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Grouped Data refers to the mean scores calculated from the summed items for Leavers and Persisters.

Commitment to the Institution

Institutional Commitment was explored with two items assessing perceptions of “fitting in” to the educational climate of the school of nursing academic community (Table 15). A significant difference, $t(57) = 1.73$, $p < .05$, was found using a one-tailed two sample t-test assuming equal variances. The test shows that persisters reported a significantly stronger commitment to the institution than did the student leavers. This is consistent with the expectation, based on Tinto’s (1993) model, that persistence is related to strong institutional commitment.

Table 15

Student Perceptions of Commitment Felt to the Institution

Item	Leavers		Persisters	
	M	SD	M	SD
I feel like I “fit in” well to the educational climate in the school of nursing.				
I feel as if I am a part of the academic community of the school.				
Total (Grouped Data)	5.32	1.42	4.58	1.58

Note: Items employed a five-point Likert-type response scale scored one “strongly agree” through five “strongly disagree.” Grouped Data refers to combined scores for both items.

External Commitments

Six items examined the commitments the students had to factors external to the educational environment (Table 16).

Table 16

Student Perceptions of Commitments External to the University Community

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
My financial resources are adequate while attending university.				
I do not have to work to support myself while attending university.				
I have few family obligations.				
I have few financial concerns.				
I have enough time to commit to my education.				
I have enough finances to commit to my education.				
Total (Grouped Data)	15.11	5.96	18.88	5.25

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Grouped Data refers to the combined results for the six items.

A two-tailed two sample t-test assuming equal variances for leavers and persisters was performed. A significant difference was found which is inconsistent with the expectation based on Tinto's (1993) model. Tinto suggested that student persisters would have fewer external commitments than would student leavers. In this situation it was found that student persisters indicated they had significantly more external commitments than did the student leavers, $t(57) = -2.47, p < .05$.

Perceived Academic Performance

Perceived Academic Performance was assessed using two items (Table 17). Participants were asked to indicate their perceptions of their grades and the academic side of university life using a five-point Likert scale. The expectation based on Tinto's (1993) model was that persisters would be more confident regarding their performance academically than would leavers. The items were grouped together by summing responses. The means of the summed scores for leavers and persisters were compared using a one-tailed t-test assuming equal variances which showed a significant difference between the means, $t(57) = 4.09, p < .01$. This indicates that the student persisters were more confident about the adequacy of their academic performance than were the student leavers which is consistent with the expectation derived from Tinto's (1993) model.

Table 17

Student Perceptions of Academic Performance

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
My grades in nursing school are good.				
I feel an affinity for the academic side of university life.				
Total (Grouped Data)	5.16	1.30	3.80	1.14

Note: Items employed a five-point Likert-type response scale scored one “strongly agree” through five “strongly disagree.” Grouped Data refers to combined scores for both items.

Faculty/Staff Interactions

The five items in the survey that explored Faculty/Staff Interactions are presented in Table 18 along with the responses of participants. Respondents’ scores for each item were summed and analysed as a group. No significant difference was found among the grouped data for leavers and persisters using a two-tailed two sample t-test, $t(57) = 0.23$. This is inconsistent with the expectation, based on Tinto’s (1993) model, that student leavers would have less satisfying interactions with faculty and staff than would student persisters.

Table 18

Student Perceptions of Interactions with Faculty and Staff

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
I do not feel discriminated against by faculty/staff.				
I feel welcomed by faculty.				
I am satisfied with the contact with academic staff.				
I have satisfactory informal contact with faculty/staff.				
I find the faculty/staff approachable.				
Total (Grouped Data)	13.32	3.96	13.02	4.70

Note: Items employed a five-point Likert-type response scale scored one “strongly agree” through five “strongly disagree.” Grouped Data refers to the mean scores for leavers and persisters for the five summed items.

Extracurricular Activities

Three items were explored in this category: students’ satisfaction with formal contact with faculty and staff, affinity felt by the students for the social side of university life, and participation in clubs, committees, and extracurricular campus activities (Table 19). Respondents’ scores were summed and the scale means were compared using a two-tailed two sample t-test assuming equal variances. No significant difference was found between the two samples in this category, $t(57) = 0.83$. This is not consistent with the expectation, based on Tinto’s (1993) model, that persisters would be more involved in social aspects of the institution than leavers.

Table 19

Student Perceptions of Social Aspects of the Institution

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
I participate in clubs/committees/extracurricular activities.				
I have satisfactory formal contact with faculty/staff.				
I feel an affinity for the social side of university life.				
Total (Grouped Data)	8.74	1.82	8.22	2.36

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Grouped Data refers to the mean scores for leavers and persisters for the three summed items.

Peer Group Interaction

The survey included eleven items designed to measure aspects of peer interaction (Table 20). The respondents' scores for these items were summed and the means of the sums were analysed using a one-tailed two sample t-test assuming equal variances. A significant difference was found between the groups, $t(57) = 2.37, p < .05$. This indicates that the student persisters felt more strongly than the student leavers that they had peer group interactions which were consistent with remaining in their program of study. This is consistent with Tinto's (1993) model which predicted that student persisters would have educationally supportive peer group interactions whereas student leavers' peer group interactions would be less supportive.

Table 20

Student Perceptions of Different Interactions Amongst Their Peer Group

Item	Leavers		Persisters	
	Mean	SD	Mean	SD
I did not move away from my friends to attend this university.				
My friends are interested in my education.				
My friends encourage me to stay in this university.				
I do not feel that I am discriminated against by students.				
I feel welcomed by other students.				
I have informal (i.e., not during extracurricular activities) social interaction with peers.				
This informal social interaction is excessive to the point where it affects my schooling.*				
I do not feel socially isolated.				
I do not feel socially overwhelmed.				
I am happy with my interaction with my peers in university.				
I have positive interaction with peers who are not in the university.				
Total (Grouped Data)	26.10	3.98	22.92	5.16

Note: Items employed a five-point Likert-type response scale scored one "strongly agree" through five "strongly disagree." Grouped Data refers to the mean scores calculated from the summed items for Leavers and Persisters.

* Scoring was reversed for this statement when the data were grouped in order to maintain the directional scoring.

Open-ended Item

At the end of the questionnaire participants were asked to write down additional information. The purpose for this section was exploratory; it was anticipated that participants might shed further light on the strengths and possible limitations of Tinto's model of attrition. It was also anticipated that practical suggestions for improving the nursing program might be forthcoming. Student persisters were specifically asked for reasons why they had completed previous years and returned to enroll in their current year of the program. Student leavers were asked why they had not completed the program of study. Twenty of the forty studied student persisters wrote comments whereas eighteen of the nineteen student leavers did so. Even though the student persisters had been asked specifically why they had remained, several of them speculated as to why others were dropping out of the nursing program. After deleting the comments regarding speculated reasons for dropping out, it became apparent that seventeen of the forty student persisters actually provided reasons why they remained in the nursing program. Most of the students wrote multiple reasons for either remaining in or leaving the program. These reasons were consolidated and recurring themes were identified for both groups.

Student Leavers

Student Leavers described eight different reasons for leaving the nursing program. These include perceived faculty/staff conflicts, changing goals, personal/family problems and overwhelming workloads in the nursing program. Social or geographical isolation and dissatisfaction with the program structure, low grade performance, and poor perceived employment opportunities in nursing were also cited.

The most often expressed (n = 6) reason for leaving the nursing program was conflict with

faculty or staff. Only one student identified a personality conflict with a professor whereas the other students (n = 5) reported negative attitudes about the nursing profession on the parts of the nursing staff or instructors in clinical areas. One student stated, "How could someone (the instructor) be so negative about a wonderful profession?" Another wrote, "Some of the instructors were very negative toward the nursing profession - not much motivation to continue." Another submitted that "the nursing staff was not very approachable."

Four students cited a change in their goals or inability to reach those goals as a reason for leaving. For example, "Once we began the placements . . . I started to feel that nursing was not for me." Another felt that when she returned to second year after a summer away that she "expected a lot from myself. When I didn't meet these goals, I realized that University wasn't going to work out."

Personal and family problems were mentioned by two students as reasons for leaving. One student stated that she was in crisis due to a death in the family and this affected her ability to do well in the program. Another stated, "I personally lost my focus on being a nurse, a student, a mother . . . I allowed my personal problems to get too overwhelming, which left me having no choice but to leave."

The work load in the nursing program was found to be overwhelming to two students. One student leaver submitted that a reason for him leaving the program was the "overwhelming work load as compared to high school."

Feelings of social or geographical isolation were expressed by four student leavers as reasons for their attrition from the program. One student had to leave the program so that she could live with her daughter. This student expressed, "I would love to continue my education in

nursing but am not willing to leave my family again.” Another student commented on the location of the school, stating that “it just was not the place where I could survive - isolated in the forest, lack of a good bus system, malls, movies, culture, etc.” This student indicated that she has since returned to where she grew up and is much more satisfied. Two other students stated that they transferred to nursing programs that were closer to their homes.

Dissatisfaction with the program structure was a reason put forth by three student leavers for not completing their studies in this school. For instance, one student stated, “I was unsatisfied with my education at Lakehead University at that time and felt that the lag between theory and practicum was too long.” Another student expressed, “I felt the majority of my learning experience was skewed to illness and not to prevention of illness.” This student stated that she now works in the field of community relations in illness prevention and is quite satisfied in her new profession.

Three student leavers cited low grade performance as reasons for not completing the nursing program. One student, who had previously completed grade 12 with an A (80-89%) average, and the NNEP, stated “I couldn’t pass the first year. As much as I wanted to pass it I found it real hard, especially chemistry.” Another student who had finished her grade 13/OAC with a B (70-79%) average stated, “Living in residence made it hard for me to concentrate and motivate myself to do the work.”

Finally, two student leavers expressed concern about poor employment opportunities in nursing as reasons for leaving the program of study. One of these students had started the nursing program in 1988 just prior to many layoffs occurring within the nursing profession in Ontario. She stated, “When I left the program there was a potential of layoffs in this industry, so leaving

was my best bet. I was offered a full-time job, so that was the road I chose.” The other student who mentioned this concern had started the nursing program in 1991, just as a multitude of layoffs in Ontario occurred. She stated, “I found myself dissatisfied with the potential employment opportunities.”

Student Persisters

Student persisters offered many individual reasons why they had been able to remain in the nursing program at least one year. However, when these reasons were combined and trends were sought out, six main reasons for continuance in the program were identified. These were: a strong motivation to complete the program and become a nurse, feelings of wastefulness of time, effort, and finances if they were to leave prior to completion, strong family support, satisfaction with the faculty, enjoyment of the program, and good employment opportunities after completion of the program.

The most cited reason for remaining in the program was a desire and motivation to complete the program and become a nurse. Eight student persisters identified this as one of their reasons for remaining in the nursing program. One such student stated, “my drive and desire to be a nurse . . . is my main focus.” Another submitted, “I returned to complete my nursing degree because I love caring for people and I truly believe I will make an excellent nurse.” A third student cited her “willpower” as a means to her goal of becoming a nurse to enable her to “force (herself) to get through it despite obstacles.” Yet another student persister stated that “strong will and determination is what helps to ignore comments by nurses you meet on the floor at clinical who discourage us from entering this field.”

Another reason, which four students identified, for remaining in the nursing program, was

that the students felt that they would be wasting time, effort, and the finances used to date if they had left the program. One student stated, simply, that one reason for staying was, “committed \$\$\$.” She also went on to say that “many of us stick with Lakehead University simply because it is impossible to switch to another university once you’ve started (you’d have to start from scratch with nursing).” A student in her fourth year stated that she “did not want to come through 4 years of school to waste it all to drop out.” A third student is quite clear in her beliefs, “My thinking was, I’ve made it this far there is no way I’m going to quit and have wasted all that time and money. Even though the knowledge you gained is not a waste, it’s of no use to you unless you have a piece of paper saying you are a nurse.”

Strong family support was submitted by two student persisters as a factor facilitating their remaining in the nursing program. In writing about what helped her through the program, one student stated, “Incredible family support and acceptance played a large role.” The other student who raised this issue, in her second year at the time of the administering of the questionnaire, stated, “Strong family support helps to get through the 1st year.”

Two student persisters commented that their satisfaction with the faculty was a reason for their continued success in the nursing program. One simply stated, “the nursing faculty are wonderful.” The other student wrote that, although she was overwhelmed by the work load in the program and had some academic difficulties, one of the reasons she had been able to continue in the program was that the faculty had been “very supportive.”

Three student persisters cited enjoyment of the actual work involved in the nursing program as a reason for remaining. One student stated, “I love what I am learning - it’s easy to go to school when you like what you do.” A third-year level student offered, “What kept me here

is realizing that as much as Lakehead University needed me, I needed Lakehead University. I liked being here . . . the work was hard but it brought out things in me that I didn't know existed. It challenged me but it didn't make me feel like an idiot. The past years have taught me the pleasure and satisfaction that you can only get from working hard."

In this time of impending nursing shortage, three students stated that good employment opportunities after completion of the program was a reason for persisting in the nursing program. One student mentioned, "People have been telling me how I've picked a good program to stick to because of all the job opportunities that will be available to me when I graduate." Another student postulates, "I will also enjoy and find opportunities for advancement in education, salary, and responsibility/authority beyond this degree."

CHAPTER 5

DISCUSSION AND CONCLUSIONS

A significant reason for conducting this study is the anticipated shortage of nurses in Canada. It is hoped that this shortage may be relieved by reducing attrition from nursing schools in Canada. In order to accomplish this, it is necessary to determine the reasons that students leave nursing studies prior to graduation. This study found differences between a group of nursing students who left their studies prior to graduation, and those who did not. These differences are discussed in this chapter.

Age

Student leavers were older than student persisters when they started the program by an average of 2.7 years. The average age of entry into the nursing program appears to affect student attrition in that the older students are when they start the program, the more likely they are to leave the program prior to graduation. Tinto (1993) suggested that this factor may be linked to other factors such as older students having feelings of isolation from peers due to their age, or having greater responsibilities outside of the program of study, such as children or employment. Older students may also have spent time in previous careers or programs of study and find, after entering the nursing program, that this career line was not what they wanted. Younger students, faced with the same problem of nursing not being the career for them, may not have been as inclined to drop out of the program if they were not aware of other options available to them.

Thyer and Bazeley (1993) concurred with this finding in their study which found that higher levels of anxiety, leading to higher attrition rates, occurred in older students. This led to the idea that a study of anxiety levels within this group of students should be performed and

methods developed to reduce this anxiety.

Brown (1987) performed a study of faculty facilitated peer support groups for nursing students. In this study, a peer support group was set up by notifying students who had achieved a low average in a beginning nursing course that an instructor wished to meet with them. At this group meeting, the students were given the choice to participate in weekly one to one and a half hour group sessions with the instructor facilitator. During these sessions, the participants discussed their concerns with course material, including course content recall, and interpersonal relations with the faculty.

Course content concerns were addressed by (a) providing information about specific study skills and relaxation techniques to reduce anxiety levels, and (b) having the students review with each other the notes they took in class and their perception of the points to highlight. Interpersonal problems with instructors were allowed to be aired without judgement (Brown, 1987, p. 326).

Group members offered feedback to each other in the form of problem-solving methods and suggestions. The group facilitator offered no advice "but continuously affirmed the students' ability to achieve success. Whenever a student performed poorly on a quiz or test, she was encouraged to view the situation as one which called for problem-solving behavior rather than one which elicited self-recriminations with a resulting decrease in perceived self-competence" (Brown, 1987, p. 326). It was found that attrition rates were significantly decreased for the students who participated in the support group.

Because the results of Brown's (1987) study may be partially related to a decrease in anxiety levels in the student and Thyer and Bazeley (1993) finding that higher anxiety levels

occurred in older students, the same method of peer support used by Brown (1987) may be useful to decrease attrition rates in older students. This is an area for further study.

Ethnicity

Six out of thirteen student leavers identified themselves as Canadian Aboriginals compared to six out of thirty-one student persisters. Due to low cell frequencies the significance of this difference remains undetermined. However, the difference between student leavers and student persisters in this area is worrisome. The finding that Canadian Aboriginals have higher risk of departure would be consistent with the work of Huerta (1990), Merrill (1998), Campbell and Davis (1996) and Tinto (1993). Minority students, which include “any group of students who find themselves to be noticeably different from most students on campus” (Tinto, 1993, pp. 75-76), are at higher risk for attrition due to feelings of isolation from their peers and culture (Tinto, 1993). Merrill (1998) found that students other than Anglo-Saxon American students, including African Americans, Asian Americans, Hispanics, Native Americans, Nigerians, and West Indians (Caribbean) had difficulties fitting in to the nursing program itself due to cultural differences. These findings lead back to the study by Brown (1987) of reducing attrition by reducing anxiety using peer support groups. A study of peer support groups for minority nursing students is warranted as this may be a way of decreasing feelings of isolation and marginality for the students who are at risk of attrition.

It should also be noted that all of the Canadian Aboriginal student leavers stated they entered the nursing program through the NNEP and only one of the six Canadian Aboriginal student persisters stated they had gone through this program. This program accepts students who are of Aboriginal Ancestry and are 21 years of age or older, have not been in school for at least

two years, are already health care workers, or have “completed at least one full year of study at the community college level in child care, community work, or a related field.” (Lakehead University Calendar, 2000) All of these admission requirements are identified by Tinto (1993) as risks for higher attrition. This may be the reason the present study found that Canadian Aboriginal ethnicity significantly increases the risk for attrition. A review of admission requirements for the NNEP is in order as it may be advisable to decrease the minimum age and abolish the requirement of non-attendance in school for at least two years.

Although all students in the nursing program are assigned to a faculty advisor, it remains up to the individual students to build their own relationship with the faculty member. Students are given the name of their faculty advisor and it is suggested that the student make contact with the advisor as soon as possible to receive guidance. Students are not required to make this contact and advisors are not required to facilitate such contact. A more proactive approach by the faculty to build more personal relationships with students assigned to them may assist in decreasing attrition of all students, especially those of Canadian Aboriginal ancestry (Collier, 1993).

Location of the Home

This study found that students who come from homes in urban areas are at higher risk for attrition than students whose homes are in rural locations. This finding is inconsistent with expectations derived from Tinto’s model. However, Tinto (1993, p. 58) states,

... social isolation is often a primary cause of voluntary withdrawal ... this is characteristically true in very large institutions where newcomers face the daunting task of trying to find their way around socially remote and organizationally

complex landscapes . . .

Lakehead University prides itself, in its mission statement, on focussing on the “people and the diversity of their ideas, contributions and achievements” (Lakehead University Calendar, 2000). It is a relatively small sized university and has programs, such as Forestry and Outdoor Recreation, which may be more appealing to those who have been raised in rural atmospheres. Perhaps a student from a rural background would find this university less overwhelmingly daunting than a larger university.

A student who was raised in a primarily urban atmosphere of a large city may find the transition to life in a smaller city, such as Thunder Bay, stressful. This was evidenced by a statement made in the open-ended item of the questionnaire, such as, “it just was not the place where I could survive - isolated in the forest, lack of a good bus system, malls, movies, culture, etc.”

As well, those students living in the urban area of Thunder Bay itself, although having the advantage of not moving away from family and friends in order to attend school, may come to feel less commitment to the institution. If the students are not actually living on campus then the demands of the external community may undermine the students’ intentions to complete their program of study. “In a very real sense, students may be ‘pulled away’ from college attendance” (Tinto, 1993, p. 109).

The idea that location of the students’ homes affects attrition should be studied further. A study of on campus versus off campus housing and its effect on retention rates is important and may have implications for increasing the availability of housing in either area. Another study of retention as it relates to rural versus urban location of students’ homes, with specific attention to

the details of these home environments, should be conducted to confirm and expand upon the findings of the present study.

Parental Level of Education

It is apparent that the parents of student leavers had significantly less education than did the parents of student persisters. This factor may have had an effect on the students' success in the program due to greater amounts of encouragement to complete the program and greater access to finances by the parents who had higher levels of education. Students may also have felt more pressure to complete the program of study if their parents had achieved a similar level of education themselves (Tinto, 1993).

Bean and Vesper (1992) showed that parental support and encouragement may be important to continued persistence in programs of study. It therefore follows that if a parent has completed a similar program, that parent would be able to be more emotionally empathetic to the student than a parent who has not undergone the same type of experience. This empathy would serve as a support for the student and would increase the student's ability to persist in the program of study. For those students who lack such support from their parents, another support system should be devised to assist them.

In 1996, Statistics Canada conducted a census of average 1995 wage earnings in the population of Ontario ages 15 and older. The census showed that anyone with less than a university degree earned, on average, \$28 020 per year. It also found that Ontario residents with a university degree earned \$44 990 on average per year. This works out to a difference of \$16 970 more per year earned by people in Ontario, ages 15 years and older, who have obtained a university degree. It follows that this higher rate of income would allow parents to provide more

financial support for the education of their children. Therefore, students whose parents have post-secondary education would have access to more money, and therefore more opportunity to continue in their chosen program of study at a post-secondary institution, than would the children of parents without post-secondary education.

It is interesting that, although a significant difference between the groups was present for both the fathers' and mothers' levels of education, there was a much larger difference noted between the leavers and persisters upon studying the mothers' levels of education. This may be due to the fact that the majority of the participants in this study were female and may have been more influenced by their mothers than their fathers.

The present study did not gather data regarding the parents' occupations as this area of study was not derived from the conceptual model. This remains an area for further study. It would be interesting to determine if the students who persisted in their program of study had parents who had completed the same type of education and are currently in the career which the student is seeking to join.

Intentions

In the present study student persisters had stronger intentions to complete the nursing program than did student leavers. This is consistent with Tinto's (1993, p. 38) statement, "Generally speaking, the higher the level of one's educational or occupational goals, the greater the likelihood of college completion." It also is consistent with Benda's (1991) findings that students are more likely to persist in the program if they are certain of their nursing major, certain of the program, expect continued enrollment, and expect to graduate. In order to increase retention rates, Benda (p. 21) suggests, "it is possible that high school students need more

information concerning the realistic requirements and components of being a nursing student.”

Smith's (1990) study of nursing student attrition showed that time management problems regarding school work was a main reason for the students' departure from the program. The recommendations of Smith's study included enhanced pre-admission advisement in order to decrease unrealistic expectations regarding the nursing program.

Tinto (1993) goes on to state that the theory that strong intentions improve retention is even more true for those career goals for which a certain type of education is a prerequisite. The career of nursing falls into this category. One student persister summarized this theory by stating, “Even though the knowledge you gained is not a waste, it's of no use to you unless you have a piece of paper saying you are a nurse.”

Goal Commitment

The present study found that student persisters likely had a stronger goal commitment than did student leavers. As earlier stated, the career of nursing requires a certain type of education. Tinto (1993) suggests that students seeking careers which have prerequisite education are likely to have stronger intentions to complete their program of study. Similarly, their level of commitment to their final goal, and the knowledge that this education is required for them to accomplish their goal, greatly impacts the likelihood that the students will remain in the necessary program of study.

Billings (1987) showed that high student goals decreased attrition rates in nursing students. It follows that the higher the students' goals, the more committed the students will be to their eventual completion, and the completion of all necessary steps leading to those end goals. As such, enhanced pre-admission advisement and screening designed to ascertain the prospective

students' end goals would assist in decreasing nursing student attrition rates.

It is important to note that employment rates for nurses were drastically lower in the early and mid 1990's than they have become in the late 1990's and 2000's. The studied student leavers may have had their life goals change after they entered the nursing program as they found that there was little employment available for them after graduation. However, the current student persisters will be graduating during a time of impending nursing shortage and will therefore have an easier time finding employment as nurses. Due to this differing economy and employment situation, the required goal commitments of the samples for program completion may have differed. The students who would have had a more difficult time finding employment after graduation needed to have a higher level of goal commitment to see them through to completion of the program. Students who thought that they would have little difficulty finding employment in their chosen area after graduation may not need to be as committed to their final goals as those who foresee major employment difficulties in their futures.

Institutional Commitment

The present study found that persisters had a stronger commitment to the institution than did the student leavers. The degree to which students feel as if they "fit in" to the educational climate of the school and became part of the academic community of the school impacts on their decisions to stay or leave as indicated by Tinto (1993, p. 208):

Individuals who perceive themselves as having established competent membership, both socially and intellectually, and having grown in the process, are more likely to express a strong commitment to the institution which houses those individuals and communities.

One student leaver, who had left the program voluntarily rather than for academic reasons, summarized the idea of institutional commitment impacting retention quite well in the open-ended item of his questionnaire. He indicated that he had left the studied baccalaureate nursing program and completed his education at the diploma level. He stated:

I was unsatisfied with my education at Lakehead University at that time and felt that the lag between theory and practicum was too long. Although I enjoyed my time at Lakehead University . . . my true nursing education came at (a diploma level institution). My practicums were so well timed that I was able to apply knowledge in a clinical setting within, at most, a month after studying that component. While I was studying obstetrics - I was placed on an obs/gyn unit. Psych - same. . . . After transferring . . . I would often meet former Lakehead University classmates/friends and would be solicited by them, or instructed by my preceptor, to "show them what to do."

He further stated that he understood that the Lakehead University curriculum had been changed after his departure. This new curriculum more closely matches classroom teaching to clinical placements. Had this student been more satisfied with the curriculum offered by the institution, he likely would have been more intellectually committed to staying in the institution rather than transferring to another.

It is notable here that a rural background enhances the incidence of persistence in the studied nursing students. Students from a rural area are more likely to require an on-campus residency in order to attend school at this institution. Tinto (1993, p. 56) pointed out that,

Rather than being noticeably different from persisters, as one might expect to be

the case for those who are labeled incongruent, isolated students differed only in their failure to have established a significant personal tie with someone on campus, faculty or student.

This would mean that students who are living in on-campus residence would be more likely to establish close ties with other students than if they were living off-campus. These close ties would serve to decrease feelings of isolation and increase persistence. Currently the studied program does not encourage nor discourage on-campus residency. This is an area for consideration and further study.

Feeling a closeness with one member of the faculty would also increase persistence according to Tinto (1993). Currently students are assigned a faculty advisor when they enter the nursing program. The students are encouraged to introduce themselves to their advisor who will assist them throughout their time in the program at Lakehead University. The faculty advisors do not actively seek out the students assigned to them. More faculty initiative may be helpful to those students who do not feel comfortable introducing themselves to their faculty advisor. This may lead to the students feeling more welcomed by the faculty and subsequently more committed to the institution. The feelings of the students regarding their faculty advisors and the closeness of these relationships as they relate to retention were not examined specifically in the present study. This remains an area for further research which may be conducted along with a study of peer support groups. Peer support groups would serve both to create relationships between the students in the group and also between the students and the faculty who facilitate the groups.

External Commitments

It was interesting to find that student persisters indicated that they had significantly more

external commitments than did the student leavers. This finding is inconsistent with the findings of Benda (1991), Huerta (1990), and Hunt (1992) that external concerns and commitments, including financial pressures, marital status, and conflicts with class schedules and jobs, negatively impacted on student retention. Although the present study did not take into account marital status, it did examine the students' concerns regarding finances, the need to work to support themselves through school, their perceived family obligations, and their perception of having enough time to commit to their education.

The conflict of the findings in the present study with the aforementioned studies may be explained by referring back to Tinto's (1993) model. The model shows external commitments interacting only with goal and institutional commitment and intentions of the students. The present study found that student persisters had higher intentions for completion, and greater commitment to their goals and to the institution than did the student leavers. Tinto stated, in 1975, that such intentions and commitment can override otherwise overwhelming external situations. This is illustrated by the numbers of students who will go without food or money, making necessary the establishment of a food bank on campus, while they remain in school in order to achieve the level of education they feel is necessary for them. It seems that external commitments in the lives of such students may serve to drive them harder toward the goal of completing their degree. As one of the studied student persisters stated in the open-ended item of the questionnaire: "I've made it this far there is no way I'm going to quit."

The difference in the dates of attendance in the nursing program between student leavers and student persisters must be taken into account in the area of goal commitment. Most of the student leavers attended this program in the early and mid 1990's, whereas the studied student

persisters attended in the late 1990's and early 2000's. Not only have employment opportunities for nurses increased during this time, but social supports for students have also increased. The social supports include increased availability of scholarships and the establishment of a food bank for students. Tinto (1993, p. 128 - 129) states:

Like all decisions, individual judgments concerning continued participation in college may be viewed as weighing the costs and benefits of college persistence relative to alternative forms of investment of one's time, energies, and scarce resources. When the external mix of opportunities or the relative benefits of attending college change significantly, students may give more weight to the pursuit of noncollege activities. For instance, a reduction in the supply of available jobs for college graduates may lead individuals to leave college . . . Similarly, a decline in jobs for persons without college degrees may lead individuals to stay in college. . . . Departure may also come about, however, because of a change in the individual's evaluation of the relative benefits of college activities. . . . The point here is quite simple. Though external events may be very important for some students, especially those that have to negotiate constantly the competing demands of family, work, and college, for most students the impact of external events upon institutional departure is secondary to those within the college. While external forces may influence one's decisions to go to college and greatly constrain choices as to which college to attend, once entry has been gained, their impact for most students tends to be dependent upon the character of one's integrative experiences within that college.

Although student persisters showed a higher incidence of external commitments than student leavers in the present study, their intentions, goal commitment, and institutional commitment, though impacted by the external forces, remain higher than those of the student leavers. The impact of the external forces is then overshadowed by the level of commitment the student persisters hold. This level of commitment is likely raised by the changes in employment opportunities and social and financial supports for nursing students participating in more recent years of the program as compared to the earlier student leavers.

Academic Performance

Student persisters felt better about their academic performance than did the student leavers. As mentioned earlier, many studies (e.g. Benda, 1991; Billings, 1987; Tinto, 1975; Williams, 1994) cite academic performance as the most important factor influencing attrition. It should be noted, however, that academic performance would likely suffer if the student was struggling with a decision to remain in or leave the program of study. This decline in academic performance would then encourage a decision to leave or may actually result in the student failing their courses resulting in involuntary attrition. Therefore, feeling poorly about their academic performance may, in reality, be a later consequence of an earlier influence of a different attrition-causing factor.

It should be kept in mind that academic dismissal may actually be a type of voluntary withdrawal from the program of study. Tinto (1993, p. 117) noted that, "Though the individual may possess the needed skills, he/she may be insufficiently committed either to the institution or to the goal of education to meet the academic demands of the institution." In this case, enhanced pre-admission advisement and screening may decrease the incongruence the student feels with the

program of study and may serve to decrease attrition rates. If prospective students were given the opportunity to talk with current students and alumni of the program, they may be able to form a clearer understanding of the demands of the program and future profession. This may also serve to increase the institutional commitment of prospective students as they learn about the facility from those who currently or have recently attended it. As well, a meeting with faculty who would explain the details of the program would be beneficial. Currently prospective students are sent literature to peruse, however this may need to be supplemented with telephone or in person meetings with faculty. Prospective students should also be required to submit an essay regarding their expectations as they proceed through the program and the goals they wish to achieve by attending the program. This would assist the institution in their selection process as those with unrealistic expectations and goals may be very carefully screened prior to admission.

Peer Group Interactions

Student persisters felt more strongly that they had peer group interactions which were consistent with remaining in their program of study than did the student leavers. Table 20 shows the detailed questions posed in relation to peer group interactions. In general, the studied peer group interactions involved socialization of the participants with peers, both inside and outside of the institution, in regards to: encouragement given to the participants, interest shown in the participants' education, social isolation or discrimination felt by the participants, and whether the participants felt socially overwhelmed or that involvement with their peers was excessive to the point where it affected their schooling. Feelings of social isolation have been shown to increase attrition (Tinto, 1993). Tinto (1993) also states that interaction with peers external to the institution may serve to "pull away" students from their studies. These ideas are congruent with

the findings of this study.

Minority students, including those of ethnic minority and older adult students, have increased feelings of social and academic isolation (Campbell and Davis, 1996; Langston-Moss, 1997; Tinto, 1993). In the present study, student leavers were older, on average, than student persisters, and included a higher percentage of students of Canadian Aboriginal ancestry. Due to low cell frequencies, the significance of this higher percentage of leavers being of Canadian Aboriginal ancestry remains undetermined. However, it should be noted that the Canadian Aboriginal students have more likelihood of being from small, isolated communities than do non-Aboriginal students. This may result in difficulties adjusting to life at the institution and in the urban area of the city. Such a move away from a small community could also leave the Aboriginal student with few family and social supports. Collier (1993) states that cultural differences may cause Aboriginal students to have more difficulty openly contributing in class especially if asked directly, by name, to answer a question. In general, they find it easier to contribute during small-group work, as may other students as well. Collier (1993) also states that the use of humour in classes containing Canadian Aboriginal students is helpful to make them feel more at home. This is likely also true for any class whether Aboriginal students are present or not. As well, Collier (1993) suggests that Aboriginal students prefer a more personal relationship with their teacher than may be necessary for non-Aboriginals. Cultural differences such as these may have resulted in greater feelings of social isolation for Canadian Aboriginal students. Older students, who are also a minority in this program, may also have had a similar sense of isolation. These feelings of isolation would make successful completion of the program of study much more unlikely than it would be for the student who felt accepted and an integral part of the social community

surrounding the school.

Aboriginal students who enter the nursing program utilizing the Native Nurses Entry Program (NNEP) have had extra academic support required to fulfill the entry requirements of the program. They also have had an opportunity to build personal relationships with the teachers and administrators of the NNEP. However, upon entering the regular nursing program they generally find themselves in large classes of mostly non-Aboriginal students with less personal interaction with their teachers. Although the Aboriginal students are always welcome and encouraged to continue their personal relationships with those they had come to know in the NNEP, there is no formal program in place to continue special supports for Aboriginal nursing students as they progress through the regular program. It is suggested that a peer support group for Aboriginal nursing students be developed in order to assist these students to remain in their program of study. This support group should consist of Aboriginal students in all years of the regular nursing program so that a wide perspective of the program would be available to students in all years. This remains an area for further research as the impact of such a support group should be further studied.

Currently there are no Aboriginal faculty teaching nursing students beyond the NNEP level. Addition of such faculty would assist Aboriginal nursing students to feel like less of a minority within the program. As well, they may feel more comfortable building personal relationships with these faculty members as compared to non-Aboriginal faculty members. A peer support group for nursing students which is facilitated by an Aboriginal nursing faculty member would be ideal to assist these students to remain in the program of study.

Limitations

The present study was limited to one baccalaureate program in a School of Nursing and was essentially descriptive. Therefore, the scope of the study could limit the application of results to other types of programs of study in nursing.

The results of the study were affected by the use of the survey method of gathering data. Those students who returned the survey may have had different values, beliefs, life situations, and reasons for leaving the program of study than those who did not return the survey. As well, current students' experiences may have differed from those enrolled in past years.

Due to the different characteristics of every educational program, including different faculty, curriculum, and facilities, caution should be used when applying the results of this study to any program other than the studied nursing program.

The rate of return of the surveys was approximately 25%. This rate of return is typical for mail surveys. It is also difficult to get a high response rate from student leavers. Although the rate of return of surveys is not a strength, it is hoped that the information gathered from these students will be useful.

This is a correlational study in which retention is associated with variables predicted by Tinto's model. Consequently, the present study does not establish cause and effect and should not be interpreted as such.

Implications

The results of this study have implications for further research and application of this knowledge.

A longitudinal study of student attrition as it relates to the same factors examined in the

present study should be conducted. The study should be conducted in more than one nursing program in order to obtain results that might be more readily generalized.

Student persisters appeared to have more external commitments than student leavers, for example the need to work to support themselves through school, family obligations, financial concerns, and the lack of time to commit to educational pursuits. It was also found that students raised in an urban environment were less likely to persist in the program than those with a rural background. A study should be conducted to confirm these results. As well, a study to determine the reasons for these results is in order.

One application of the results of the current study is that potential students should be given access to more information regarding the commitment required and the difficulty level of the entire program of study within this School of Nursing. Prospective students should be required to submit an essay or an interview regarding their expectations of the demands of the program and their desired goals prior to acceptance so that those students with unrealistic expectations may be carefully screened and supported. Students who have lower level intentions for completion of the program, and who may, therefore, be at higher risk of attrition, may choose not to enter the program if they are more aware of the demands which will be placed upon them. Potential students may also not be aware of the financial commitments and time commitments beyond actual class, lab, and clinical hours which are required to be successful in this program. Requiring potential students to meet with current students for an honest conversation about the commitments necessary to complete this program may be beneficial. Potential students may also benefit from meeting with recent alumni of the program in order to strengthen their commitment to the institution and to their final goals. A meeting or telephone conversation with a faculty

member should also be initiated prior to accepting the student into the program so that the school is assured that the student has all the necessary information regarding the demands of the program. As well, the faculty member may ask the student any needed questions arising from the submitted essay and make a recommendation for or against approval of the application to enroll. A well prepared pre-admission advisement program, as detailed above, is essential in order to reduce attrition rates.

Another application of the results of this study is the establishment of peer support groups for students identified to be at high risk for attrition. This support group would serve to decrease feelings of isolation and anxiety as well as make up for possible lack of support systems available to individual students. It may also serve to increase feelings of self-worth and self-esteem for the students and therefore enable them to have more personal interaction with a faculty member. Interaction such as this also increases commitment to the institution. Students may be able to self-identify higher risks of attrition if they are given information about the attrition risk factors. Identification of at risk students may also be accomplished by faculty members. A faculty member should facilitate the peer support group which may consist of students from all year levels or be divided into relevant sections.

A support system should be developed as a continuance to the NNEP. Aboriginal students who have completed the NNEP require continuation of the personal relationships and peer support that they experienced in the NNEP. The details of such a peer support program for Canadian Aboriginal students, which should also include those who have not utilized the NNEP in order to enter the regular nursing program, have been set out earlier in this chapter. The impact of this support group should be studied as this remains an area for further study.

Conclusions

As the nursing shortage in Canada grows, it becomes increasingly more important for nursing schools to graduate as many competent nurses as possible. Not only do nursing schools need to focus on recruiting students into their programs, but they also need to focus on retaining these students. In order to retain students, it is necessary to understand why some leave the program of study.

This study shows that student persisters had stronger intentions for completion than did student leavers. Students who have lower level intentions should be identified and given extra peer supports, as previously detailed, to assist them to complete the program successfully. The development of more personal relationships with faculty advisors may also serve to increase their commitments to the goal of becoming nurses.

Institutional and goal commitment is lower in the sample of student leavers. This is an area that needs to be strengthened in order to assist at risk students to remain in the program. The establishment of peer-support groups and utilization of links to recent alumni of the program may strengthen these commitments.

The amounts of external commitments held by nursing students should be examined. This study found that student persisters actually had more external commitments than did the student leavers. This is not the norm and may be a result of strong institutional and goal commitments surpassing high amounts of external commitments. It is not recommended that students be encouraged to seek external commitments which may take time away from their learning. However, it is advisable that potential students be made aware of the financial and time commitments required by the nursing program so that they may be better prepared upon entering

the program.

Student leavers were less confident about their academic performance and positive peer group interactions than the student persisters. The establishment of a peer support group for students having difficulty, or with a high potential of having difficulties in the program, is warranted.

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Appendix A

Cover Letter to Accompany Nursing Student Attrition Survey for Student Leavers

Dear Participant,

Canada will be facing a nursing shortage by the year 2011. In order to decrease this shortage, it is necessary for each school of nursing to graduate as many students as possible. With this in mind, I am conducting a study of students who have left the Lakehead University School of Nursing program prior to graduation. The study is designed to discover the factors which lead students to depart the program.

Please fill out and return the enclosed Nursing Student Attrition Survey. As a student who has departed the Lakehead University School of Nursing, you possess information which is extremely valuable to the program. The survey takes approximately 20 minutes to complete. A self addressed stamped envelope has been provided for the return of the survey. In order to maintain your confidentiality, do not put your name on the survey form or reply envelope. The surveys are not individually marked or labelled in any way so that they cannot be linked back to you. No names of participants will be released from the information in this study.

Participation in this study is completely voluntary. Return of the survey form indicates your willingness to participate. A summary of the study will be made available to you upon request. All data from this study will be stored at Lakehead University for a period of not less than seven years.

If you have any questions or concerns please do not hesitate to contact me at the above address or at (807) 623-5354.

Thank you very much for your assistance.

Sincerely,

**Jennifer D. Eccles, RN HBScN ENC(C)
Graduate Student
Faculty of Education
Lakehead University**

ENCLOSURE

Appendix B

Letter to Accompany Nursing Student Attrition Survey for Student Persisters

Dear Participant,

Canada will be facing a nursing shortage by the year 2011. In order to decrease this shortage, it is necessary for each school of nursing to graduate as many students as possible. With this in mind, I am conducting a study of students who have remained in the Lakehead University School of Nursing program past year level one. The study is designed to discover the factors which lead students to stay in the program.

Please fill out and return the Nursing Student Attrition Survey which will be given to you next week. The survey takes approximately 20 minutes to complete. In order to maintain your confidentiality, do not put your name on the survey form. The surveys are not individually marked or labelled in any way so that they cannot be linked back to you. No names of participants will be released from the information in this study.

Participation in this study is completely voluntary. Return of the survey form indicates your willingness to participate. A summary of the study will be made available to you upon request. All data from this study will be stored at Lakehead University for a period of not less than seven years.

If you have any questions or concerns please do not hesitate to contact me at the above address or at (807) 623-5354.

Thank you very much for your assistance.

Sincerely,

**Jennifer D. Eccles, RN HBScN ENC(C)
Graduate Student
Faculty of Education
Lakehead University**

ENCLOSURE

Appendix C

Questionnaire for Student Leavers

Nursing Student Attrition Survey

Demographics

Age: ____

Year of entry to Nursing Program Year 1: 19__

Male ____ Female ____

What is your most prevalent ethnic heritage?

- Anglo/Irish
- French
- Germanic
- Italian
- Finnish
- Ukrainian
- Greek
- Other European
- Canadian Aboriginal
- Metis
- African
- Central/South American
- Asian
- Australian/New Zealand
- Middle Eastern
- South Pacific
- Russian

How far away is your home from Lakehead University?

- Thunder Bay
- Northwestern Ontario
- Northern Ontario
- Southern Ontario
- Manitoba
- Canada (other than Ontario or Manitoba)
- United States of America
- Not from Canada or US

Is your home in a rural ____ or urban ____ area?

What was your highest level of education prior to starting the nursing program?

- grade 10
- grade 11
- grade 12
- grade 13/OAC
- trades certificate
- Native Nurses Entry Program
- some college
- some university
- college diploma attained
- university degree attained

Did you leave the program (check one)

- voluntarily, or
- for academic reasons?

Was your schooling prior to university (check one)

- rural
- urban
- both rural and urban?

What was your average grade attained in high school?

- A+ (90-100%)
- A (80-89%)
- B (70-79%)
- C (60-69%)
- D (50-59%)
- F (0-49%)

The highest level of schooling achieved by my parents is:

Mother		Father
<input type="checkbox"/>	Some elementary school	<input type="checkbox"/>
<input type="checkbox"/>	Completed grade 8	<input type="checkbox"/>
<input type="checkbox"/>	Some high school	<input type="checkbox"/>
<input type="checkbox"/>	Completed high school	<input type="checkbox"/>
<input type="checkbox"/>	Trades certificate	<input type="checkbox"/>
<input type="checkbox"/>	Some college	<input type="checkbox"/>
<input type="checkbox"/>	Some university	<input type="checkbox"/>
<input type="checkbox"/>	Completed college diploma	<input type="checkbox"/>
<input type="checkbox"/>	Completed university degree	<input type="checkbox"/>

Intentions

When I started the nursing program I expected to complete:

- Year 1
- Year 2
- Year 3
- Year 4
- Nurse Practitioner Certificate
- Masters Degree
- Doctoral Degree

Upon starting my nursing program my main goal was to:

- enter any program in higher education
- enter a nursing program in higher education
- attain any degree
- attain a degree in nursing
- become a nurse
- obtain employment as a nurse
- increase my knowledge of health care
- increase my level of education generally

Factors Influencing Attrition

Please indicate your degree of agreement with the following statements in relation to your experience in the nursing program:	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. I had an adequate amount of financial support from my family.					
2. I had an adequate amount of emotional support from my family.					
3. My family showed a supportive interest in my education.					
4. My family expected me to complete my degree.					
5. My family rewarded me for my achievements toward my degree.					
6. My lifestyle did not change very much when I started university.					
7. I did not move away from my family to attend this university.					
8. I did not move away from my community to attend this university.					
9. I did not move away from my friends to attend this university.					
10. My friends were interested in my education.					
11. My friends encouraged me to stay in this university.					
12. My family encouraged me to stay in this university.					
13. My financial resources were adequate while attending university.					
14. I did not have to work to support myself while attending university.					
15. I am a visible minority.					
16. My visible minority status affected my schooling.					
17. My gender affected my schooling.					
18. I am physically challenged.					
19. My physical challenge affected my schooling.					
20. I have a learning disability.					
21. My learning disability affected my schooling.					
22. I did not feel that I was discriminated against by faculty/staff.					
23. I felt welcomed by faculty.					
24. I did not feel that I was discriminated against by students.					
25. I felt welcomed by other students.					
26. I felt that I was bettering myself by working on a degree in nursing.					
27. My grades in nursing school were good.					
28. I felt like I "fit in" well to the educational climate in the school of nursing.					
29. I am outgoing.					

Factors Influencing Attrition

Please indicate your degree of agreement with the following statements in relation to your experience in the nursing program:

Strongly Agree
Agree
No Opinion
Disagree
Strongly Disagree

- 30. I find it easy to make new friends.
- 31. I felt well prepared by prior schooling to succeed in the nursing program.
- 32. I was satisfied with the contact with academic staff.
- 33. I did not perceive a large difference in university life as compared to prior educational experiences.
- 34. I intended to complete the nursing program.
- 35. I intended to become a nurse.
- 36. My aspirations reached beyond nursing school.
- 37. My aspirations required a degree in nursing.
- 38. I was committed to the goal of becoming a nurse.
- 39. I was committed to the goal of completing a degree in nursing.
- 40. I needed to complete my degree in order to enter the occupation I wished.
- 41. I felt as if I was a part of the academic community of the school.
- 42. I participated in clubs/committees/extracurricular activities on campus.
- 43. I had few family obligations.
- 44. I had few financial concerns.
- 45. I had enough time to commit to my education.
- 46. I had enough finances to commit to my education.
- 47. I had satisfactory informal contact with faculty/staff.
- 48. I had satisfactory formal contact with faculty/staff.
- 49. I found the faculty/staff approachable.
- 50. I had informal (i.e. not during extracurricular activities) social interaction with peers.
- 51. This informal social interaction was excessive to the point where it affected my schooling.
- 52. I did not feel socially isolated.
- 53. I did not feel socially overwhelmed.
- 54. I was happy with my interaction with my peers in university.
- 55. I had positive interaction with peers who were not in the university.
- 56. I felt an affinity for the academic side of university life.

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Factors Influencing Attrition

Please indicate your degree of agreement with the following statements in relation to your experience in the nursing program:	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
57. I felt an affinity for the social side of university life.					
58. The availability of nursing employment increased while I was in nursing school.					
59. My life goals did not change after entering university.					

Do you have any additional information or comments regarding reasons why you left the nursing program?

Appendix D

Questionnaire for Student Persisters

Nursing Student Attrition Survey

Demographics

Age: ____ Year of entry to Nursing Program Year 1: 19 ____ Current Year Level: ____ Male ____ Female ____

What is your *most prevalent* ethnic heritage?

- Anglo/Irish
- French
- Germanic
- Italian
- Finnish
- Ukrainian
- Greek
- Other European
- Canadian Aboriginal
- Metis
- African
- Central/South American
- Asian
- Australian/New Zealand
- Middle Eastern
- South Pacific
- Russian

How far away is your home from Lakehead University?

- Thunder Bay
- Northwestern Ontario
- Northern Ontario
- Southern Ontario
- Manitoba
- Canada (other than Ontario or Manitoba)
- United States of America
- Not from Canada or US

Is your home in a rural ____ or urban ____ area?

What was your highest level of education prior to starting the nursing program?

- grade 10
- grade 11
- grade 12
- grade 13/OAC
- trades certificate
- Native Nurses Entry Program
- some college
- some university
- college diploma attained
- university degree attained

Was your schooling prior to university (check one)

- rural
- urban
- both rural and urban?

What was your average grade attained in high school?

- A+ (90-100%)
- A (80-89%)
- B (70-79%)
- C (60-69%)
- D (50-59%)
- F (0-49%)

The highest level of schooling achieved by my parents is:

Mother		Father
<input type="checkbox"/>	Some elementary school	<input type="checkbox"/>
<input type="checkbox"/>	Completed grade 8	<input type="checkbox"/>
<input type="checkbox"/>	Some high school	<input type="checkbox"/>
<input type="checkbox"/>	Completed high school	<input type="checkbox"/>
<input type="checkbox"/>	Trades certificate	<input type="checkbox"/>
<input type="checkbox"/>	Some college	<input type="checkbox"/>
<input type="checkbox"/>	Some university	<input type="checkbox"/>
<input type="checkbox"/>	Completed college diploma	<input type="checkbox"/>
<input type="checkbox"/>	Completed university degree	<input type="checkbox"/>

Intentions

When I started the nursing program I expected to complete:

- Year 1
- Year 2
- Year 3
- Year 4
- Nurse Practitioner Certificate
- Masters Degree
- Doctoral Degree

Upon starting my nursing program my *main* goal was to:

- enter any program in higher education
- enter a nursing program in higher education
- attain any degree
- attain a degree in nursing
- become a nurse
- obtain employment as a nurse
- increase my knowledge of health care
- increase my level of education generally

Factors Influencing Attrition

ion | Disagree | Disagree

Please indicate your degree of agreement with the following statements:

Strongly Agree Agree No Opinion Disagree Strongly Disagree

1. I have an adequate amount of financial support from my family.					
2. I have an adequate amount of emotional support from my family.					
3. My family shows a supportive interest in my education.					
4. My family expects me to complete my degree.					
5. My family rewards me for my achievements toward my degree.					
6. My lifestyle did not change very much when I started university.					
7. I did not move away from my family to attend this university.					
8. I did not move away from my community to attend this university.					
9. I did not move away from my friends to attend this university.					
10. My friends are interested in my education.					
11. My friends encourage me to stay in this university.					
12. My family encourages me to stay in this university.					
13. My financial resources are adequate while attending university.					
14. I do not have to work to support myself while attending university.					
15. I am a visible minority.					
16. My visible minority status affects my schooling.					
17. My gender affects my schooling.					
18. I am physically challenged.					
19. My physical challenge affects my schooling.					
20. I have a learning disability.					
21. My learning disability affects my schooling.					
22. I do not feel that I am discriminated against by faculty/staff.					
23. I feel welcomed by faculty.					
24. I do not feel that I am discriminated against by students.					
25. I feel welcomed by other students.					
26. I feel that I am bettering myself by working on a degree in nursing.					
27. My grades in nursing school are good.					
28. I feel like I "fit in" well to the educational climate in the school of nursing.					
29. I am outgoing.					

Factors Influencing Attrition

Please indicate your degree of agreement with the following statements:	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
30. I find it easy to make new friends.					
31. I feel well prepared by prior schooling to succeed in the nursing program.					
32. I am satisfied with the contact with academic staff.					
33. I do not perceive a large difference in university life as compared to prior educational experiences.					
34. I intend to complete the nursing program.					
35. I intend to become a nurse.					
36. My aspirations reach beyond nursing school.					
37. My aspirations require a degree in nursing.					
38. I am committed to the goal of becoming a nurse.					
39. I am committed to the goal of completing a degree in nursing.					
40. I need to complete my degree in order to enter the occupation I wish.					
41. I feel as if I am a part of the academic community of the school.					
42. I participate in clubs/committees/extracurricular activities on campus.					
43. I have few family obligations.					
44. I have few financial concerns.					
45. I have enough time to commit to my education.					
46. I have enough finances to commit to my education.					
47. I have satisfactory informal contact with faculty/staff.					
48. I have satisfactory formal contact with faculty/staff.					
49. I find the faculty/staff approachable.					
50. I have informal (i.e. not during extracurricular activities) social interaction with peers.					
51. This informal social interaction is excessive to the point where it affects my schooling.					
52. I do not feel socially isolated.					
53. I do not feel socially overwhelmed.					
54. I am happy with my interaction with my peers in university.					
55. I have positive interaction with peers who are not in the university.					
56. I feel an affinity for the academic side of university life.					

Factors Influencing Attrition

Please indicate your degree of agreement with the following statements:	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
57. I feel an affinity for the social side of university life.					
58. The availability of nursing employment has increased while I am in nursing school.					
59. My life goals have not changed after entering university.					

Do you have any additional information or comments regarding reasons why you completed the previous year(s) and returned to enroll in your current year of the nursing program?

Appendix E

Follow-up Letter to Student Leavers

Dear Participant,

Two weeks ago I sent you a Nursing Student Attrition Survey. If you have already returned this survey, thank you very much for your help. If you have not been able to return it, please take a few moments to fill in the information. The results of the study are extremely important. It is only through reflection of the past that we can make changes for the future. This study is one way of using your past to make a different future for others.

There is one more crucial reason for you to participate in this study. Canada will not have enough nurses by the year 2011. That is only 12 years away. Our health care could drastically suffer. In order to increase the number of nurses in Canada's health care system, our nursing schools have to graduate as many qualified students as possible. This study will help nursing schools to retain the students who enter the program.

Confidentiality will be maintained in regard to identification of participants within this study. Please do not put your name on the survey or self addressed stamped reply envelope. The surveys are not individually marked or labelled in any way so that they cannot be linked back to you. Participation in this study is on a volunteer basis. Return of the survey form indicates your willingness to participate. A summary of the study will be made available to you upon request.

If you have any questions or concerns please do not hesitate to contact me at the above address or at (807) 623-5354.

Once again, if you have already returned the survey, thank you very much. If you have not already done so, please take the time to complete the information and send it along. Thank you.

Sincerely,

**Jennifer D. Eccles, RN HBScN ENC(C)
Graduate Student
Faculty of Education
Lakehead University**

Appendix F

Description of the Computer Program Utilized to Analyze the Data

Microsoft® Excel 2000 was used to analyse the data procured in this study. The data was entered into the program as a series of raw data organized in rows by sample group and in columns according to the answers given to the questions in the Nursing Student Attrition Survey. The data was then split into separate sheets, one for each of the factors in Tinto's (1993) Model of College Student Attrition. The columns of data which corresponded to each factor were copied into these sheets. The columns which corresponded to questions 15 to 21, and 51 had their scoring reversed so that the directional scoring of each column matched. This means that, for every column and question, a score of one meant "strongly agree," two signified "agree," three equalled "no opinion," four meant "disagree" and five was "strongly disagree." In this scoring system, a lower score would mean that the student was more likely to remain in their program of study according to the model.

The scores were then grouped together according to the sample groups of persisters and leavers. They were grouped by adding together the individual scores each student gave for each item in a category then finding the mean of these combined scores. This means that, for instance, in the category of Institutional Commitment where two items were tested, those two scores were added together for each participant. T-tests assuming equal variances were performed on these added scores grouped according to Student Leavers and Student Persisters. These tests were performed by clicking on Tools, then Data Analysis, then choosing "T-test: two sample assuming equal variances." The ranges of the data were then entered and an alpha of 0.05 was ensured. The output range was entered and the results were obtained.

Mean scores of the grouped data differed in their possible ranges according to how many items were included in the group. Since each possible response ranged from one to five, then, for

instance, a group which included two items, such as Institutional Commitment, would have a response range of two to ten. Similarly, a group, such as Goal Commitment, which included six items, had a response range of six to thirty.

Appendix G

Cross Tabulation of Results of the Nursing Student Attrition Survey

Factors Influencing Attrition								
1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree								
Question	Group	1	2	3	4	5	M	SD
1. I have an adequate amount of financial support from my family.	Leavers	12	6	0	1	0	1.47	0.77
	Persisters	19	10	4	7	0	1.98	1.14
2. I have an adequate amount of emotional support from my family.	Leavers	11	6	1	1	0	1.58	0.84
	Persisters	31	8	0	1	0	1.28	0.60
3. My family shows a supportive interest in my education.	Leavers	13	5	0	1	0	1.42	0.77
	Persisters	32	5	2	1	0	1.3	0.69
4. My family expects me to complete my degree.	Leavers	9	9	1	0	0	1.58	0.61
	Persisters	31	7	2	0	0	1.28	0.55
5. My family rewards me for my achievements toward my degree.	Leavers	4	6	5	3	1	2.53	1.17
	Persisters	13	17	7	2	1	2.03	0.97
6. My lifestyle did not change very much when I started university.	Leavers	0	7	1	7	4	3.42	0.28
	Persisters	3	9	1	19	8	3.50	0.20
7. I did not move away from my family to attend this university.	Leavers	6	2	1	2	8	3.21	1.81
	Persisters	16	4	0	3	17	3.03	1.89
8. I did not move away from my community to attend this university.	Leavers	6	1	1	3	8	3.32	1.80
	Persisters	16	4	0	3	17	3.03	1.89
9. I did not move away from my friends to attend this university.	Leavers	5	1	1	4	8	3.47	1.71
	Persisters	16	5	0	4	15	2.93	1.85

Factors Influencing Attrition								
1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree								
Question	Group	1	2	3	4	5	M	SD
10. My friends are interested in my education.	Leavers	3	11	3	2	0	2.21	0.85
	Persisters	6	25	6	2	1	2.18	0.84
11. My friends encourage me to stay in this university.	Leavers	1	7	9	2	0	2.63	0.76
	Persisters	8	18	9	4	1	2.30	0.99
12. My family encourages me to stay in this university.	Leavers	5	6	4	4	0	2.37	1.12
	Persisters	23	11	5	1	0	1.6	0.81
13. My financial resources are adequate while attending university.	Leavers	7	7	2	2	1	2.11	1.20
	Persisters	7	15	3	14	1	2.68	1.20
14. I do not have to work to support myself while attending university.	Leavers	5	7	0	6	1	2.53	1.35
	Persisters	4	11	0	10	14	3.35	1.48
15. I am a visible minority.	Leavers	2	3	3	0	11	3.79	1.55
	Persisters	3	3	4	10	20	4.03	1.27
16. My visible minority status affects my schooling.	Leavers	0	0	4	4	11	4.37	0.83
	Persisters	2	2	10	8	18	3.95	1.18
17. My gender affects my schooling.	Leavers	0	2	2	5	10	4.21	1.03
	Persisters	0	5	4	10	21	4.18	1.06
18. I am physically challenged.	Leavers	0	0	1	3	15	4.73	0.56
	Persisters	0	0	2	2	36	4.85	0.48

Factors Influencing Attrition								
1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree								
Question	Group	1	2	3	4	5	M	SD
19. My physical challenge affects my schooling.	Leavers	0	0	4	2	13	4.47	0.84
	Persisters	0	0	8	2	30	4.55	0.81
20. I have a learning disability.	Leavers	0	1	2	3	13	4.47	0.90
	Persisters	0	2	2	3	33	4.68	0.80
21. My learning disability affects my schooling.	Leavers	0	1	4	2	12	4.32	1.00
	Persisters	0	1	8	3	28	4.45	0.90
22. I do not feel that I am discriminated against by faculty/staff.	Leavers	3	6	4	4	2	2.79	1.27
	Persisters	9	11	5	11	4	2.75	1.35
23. I feel welcomed by faculty.	Leavers	2	11	3	3	0	2.37	0.90
	Persisters	6	21	6	2	5	2.48	1.20
24. I do not feel that I am discriminated against by students.	Leavers	5	9	3	1	1	2.16	1.07
	Persisters	16	16	3	3	2	1.98	1.12
25. I feel welcomed by other students.	Leavers	4	11	3	1	0	2.05	0.78
	Persisters	14	21	3	2	0	1.83	0.78
26. I feel that I am bettering myself by working on a degree in nursing.	Leavers	7	10	0	2	0	1.84	0.90
	Persisters	30	8	2	0	0	1.30	0.56
27. My grades in nursing school are good.	Leavers	2	9	2	5	1	2.68	1.16
	Persisters	15	24	0	1	0	1.68	0.62

Factors Influencing Attrition								
1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree								
Question	Group	1	2	3	4	5	M	SD
28. I feel like I "fit in" well to the educational climate in the school of nursing.	Leavers	0	11	3	4	1	2.73	0.99
	Persisters	12	17	6	5	0	2.10	0.15
29. I am outgoing.	Leavers	3	11	3	2	0	2.21	0.85
	Persisters	15	17	3	5	0	1.95	0.98
30. I find it easy to make new friends.	Leavers	4	11	3	1	0	2.05	0.78
	Persisters	13	20	4	3	0	1.93	0.88
31. I feel well prepared by prior schooling to succeed in the nursing program.	Leavers	4	10	2	3	0	2.21	0.98
	Persisters	12	21	3	4	0	1.98	0.89
32. I am satisfied with the contact with academic staff.	Leavers	1	8	4	5	1	2.84	1.07
	Persisters	2	19	7	9	3	2.80	1.09
33. I do not perceive a large difference in university life as compared to prior educational experiences.	Leavers	0	5	1	11	2	3.53	1.02
	Persisters	1	8	4	20	7	3.60	1.08
34. I intend to complete the nursing program.	Leavers	5	11	1	2	0	2.00	0.88
	Persisters	31	7	2	0	0	1.28	0.55
35. I intend to become a nurse.	Leavers	6	12	0	1	0	1.79	0.71
	Persisters	25	9	2	3	1	1.65	1.05
36. My aspirations reach beyond nursing school.	Leavers	3	7	2	7	0	2.68	1.16
	Persisters	22	13	5	0	0	1.58	0.71

Factors Influencing Attrition								
1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree								
Question	Group	1	2	3	4	5	M	SD
37. My aspirations require a degree in nursing.	Leavers	3	10	1	5	0	2.42	1.07
	Persisters	26	7	5	1	1	1.60	0.98
38. I am committed to the goal of becoming a nurse.	Leavers	4	10	2	3	0	2.21	0.98
	Persisters	21	12	4	2	1	1.75	1.01
39. I am committed to the goal of completing a degree in nursing.	Leavers	4	9	2	4	0	2.31	1.06
	Persisters	30	8	0	1	1	1.38	0.84
40. I need to complete my degree in order to enter the occupation I wish.	Leavers	5	7	1	4	2	2.53	1.39
	Persisters	22	11	4	2	1	1.73	1.01
41. I feel as if I am a part of the academic community of the school.	Leavers	1	10	4	4	0	2.58	0.90
	Persisters	6	18	7	9	0	2.48	1.01
42. I participate in clubs/committees/extracurricular activities on campus.	Leavers	0	6	2	9	2	3.37	1.07
	Persisters	6	9	6	13	6	3.10	1.34
43. I have few family obligations.	Leavers	2	9	2	4	2	2.74	1.24
	Persisters	2	8	6	14	10	3.55	1.22
44. I have few financial concerns.	Leavers	3	9	0	4	3	2.74	1.41
	Persisters	2	7	3	18	10	3.68	1.19
45. I have enough time to commit to my education.	Leavers	2	12	0	4	1	2.47	1.12
	Persisters	6	19	3	10	2	2.58	1.17

Factors Influencing Attrition								
1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree								
Question	Group	1	2	3	4	5	M	SD
46. I have enough finances to commit to my education.	Leavers	5	8	0	3	3	2.53	1.47
	Persisters	4	17	3	12	4	2.88	1.24
47. I have satisfactory informal contact with faculty/staff.	Leavers	1	10	2	6	0	2.68	1.00
	Persisters	2	24	6	6	2	2.55	0.99
48. I have satisfactory formal contact with faculty/staff.	Leavers	1	9	3	6	0	2.74	0.99
	Persisters	1	27	7	3	2	2.45	0.88
49. I find the faculty/staff approachable.	Leavers	1	11	2	4	1	2.63	1.07
	Persisters	5	23	3	7	2	2.45	1.08
50. I have informal (i.e. not during extracurricular activities) social interaction with peers.	Leavers	0	13	1	5	0	2.58	.090
	Persisters	16	19	1	2	2	1.88	1.04
51. This informal social interaction is excessive to the point where it affects my schooling.	Leavers	1	2	3	12	1	3.53	0.96
	Persisters	1	2	1	19	17	4.23	0.92
52. I do not feel socially isolated.	Leavers	2	13	1	3	0	2.26	0.87
	Persisters	12	16	1	10	1	2.30	1.22
53. I do not feel socially overwhelmed.	Leavers	2	13	3	1	0	2.16	0.69
	Persisters	9	20	4	5	2	2.28	1.11
54. I am happy with my interaction with my peers in university.	Leavers	3	14	2	0	0	1.95	0.52
	Persisters	13	24	2	1	0	1.78	0.66

Factors Influencing Attrition

1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, 5 = Strongly Disagree

Question	Group	1	2	3	4	5	M	SD
55. I have positive interaction with peers who are not in the university.	Leavers	2	13	3	1	0	2.16	0.69
	Persisters	13	25	2	0	0	1.73	0.55
56. I feel an affinity for the academic side of university life.	Leavers	0	12	5	2	0	2.47	0.70
	Persisters	7	22	10	1	0	2.13	0.72
57. I feel an affinity for the social side of university life.	Leavers	0	11	4	4	0	2.63	0.83
	Persisters	4	18	7	9	2	2.68	1.10
58. The availability of nursing employment has increased while I am in nursing school.	Leavers	1	7	3	5	3	3.11	1.24
	Persisters	27	12	1	0	0	1.35	0.53
59. My life goals have not changed after entering university.	Leavers	1	7	2	5	4	3.21	1.32
	Persisters	10	13	1	14	2	2.63	1.33