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# Outcomes Associated with Mentorship for Canadian University Students Transitioning to Adulthood

Dowd, Roxanne

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THE UNIVERSITY OF CALGARY

Outcomes Associated with Mentorship for Canadian University Students

Transitioning to Adulthood

by

Roxanne Dowd

A THESIS

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## **Abstract**

The transition from high school to university is a time when young adults are vulnerable to a range of potentially negative outcomes; however, having a mentor as a form of positive social support can increase resilience and is associated with long-term positive outcomes. The current study examined a wide range of self-reported outcomes for 148 Canadian university students during their transition to adulthood, comparing those with a natural mentor to those without. Significant differences between those with a mentor and those without were found related to academics (academic/career goals, school importance), life satisfaction, and readiness for adulthood. Mentorship was also found to significantly predict readiness for adulthood in a regression model, after accounting for support from family and friends. Based on the current findings, high schools and universities should consider encouraging natural mentorship to aid in the transition after high school.

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## **Chapter One: Introduction**

The period after high school is a time of transition and change, typically involving an individual moving towards adulthood with additional responsibilities, decisions, and independence. However, for many this is a difficult time associated with increased vulnerability to negative outcomes, particularly for individuals transitioning to college or university. The difficulties during this transition include the academic demands of post-secondary education but also a range of other stressors that coincide with this stage of life. These stressors differ across individuals and circumstances but can include a loss of high school friends and a need to form new relationships, increased autonomy and responsibilities both in school and in life, and for many, moving out of home for the first time (Cleary, Walter & Jackson, 2011). Because many individuals are not prepared to handle such stressors (Cook, 2007), they are at increased risk of negative outcomes, related to physical (Bray & Born, 2004; Downs & Ashton, 2011), sexual (Cullen, Koehly, Anderson, Baranowski, Prokhorov, Basen-Engquist, Wetter & Hergenroeder, 1999), and mental health (Blanco, Okuda, Wright, Hasin, Grant, Liu & Olfson, 2008; Usher, Jackson, & O'Brien, 2005).

Data from the National Health Interview Survey reveal that, for American youth, the transition after high school is associated with an increase in a variety of risky health behaviours (Cullen et al., 1999). These include increased cigarette use, sexual risk behaviour and binge drinking, especially for males. In addition, physical exercise decreased continually across the transition, especially for females (Cullen et al., 1999). Similarly, in a study of 396 American college students, 66% did not regularly get the recommended amount of weekly physical activity (Downs & Ashton, 2011). These findings have also been replicated in Canadian populations. In a



study of 145 Canadian undergraduate students, 66% reported adequate physical exercise at the end of high school but only 44% of the students were getting enough physical activity after beginning university (Bray & Born, 2004).

The lack of exercise also affects the overall well-being of the students. Bray and Born (2004) found that Canadian undergraduate students without enough physical activity reported being more fatigued and feeling less vigorous than those who were more active (Bray & Born, 2004). Similarly, Downs and Ashton (2011) reported that individuals who were consistently physically active, experienced better physical and mental health outcomes related to mood, life satisfaction, stress, general wellness, and healthy eating than those who were not physically active enough (Downs & Ashton, 2011). These poor health outcomes can have serious long-term consequences. In a large-scale longitudinal study of 6,998 adolescents, those with poor physical health outcomes in their first year of university or college were significantly less likely to complete their schooling than those without such difficulties (Haas & Fosee, 2008).

Mental health may also be at-risk for individuals transitioning after high school. Data from the National Epidemiological Survey on Alcohol and Related Conditions, revealed college students had significantly higher rates of psychiatric conditions, including drug use disorder and nicotine dependence, compared to their non-college-attending peers (Blanco et al, 2008). College students were also significantly less likely to receive treatment for alcohol or drug use disorders than non-college-attending individuals of the same age (Blanco et al, 2008). There is an increased risk of depression during this time, particularly for females (Rao, Hammen & Daley, 1999). These years are often characterized by increased demands, stresses, and responsibilities, which may place individuals at increased risk of mental illness (Usher et al., 2005).

Mental health issues can have a variety of short and long-term negative impacts. Needham (2006) found that the more depressive symptoms females reported, the less likely they were to complete high school and depression made it less likely that both females and males would enter college or university. Issues of mental and physical health often coincide. Needham (2006) found the more self-reported depressive symptoms one experienced, the more likely he or she was to binge drink or use drugs. Conversely, those with greater use of cigarettes, alcohol and drugs, reported steeper declines in mental health over time, especially for females (Needham, 2006).

The risk factors during this transition that were noted above may be related to the social support from one's family. Data from the National Longitudinal Study of Adolescent Health revealed that the more parental support one received during the transition to post-secondary, the less depressive symptoms he or she reported (Needham, 2006). However, declines in perceived support from one's family during this time can have negative consequences. In a study of 2,616 students following high school, the youth experienced declines in their appraisal of social support from peers and teachers and they reported increased depressive and anxiety symptoms and decreased self-esteem (De Wit, Karioja, Rye & Shain, 2011). The study also revealed that males reported steeper declines in support than females during this time (De Wit et al., 2011). Overall, social support is critical during this vulnerable time and decreases in emotionally supportive relationships can have negative consequences for mental health.

While perceived support from family may decline during the transition after high school, positive adult support can come from other relationships (Masten, 2009). The benefits of such natural helping relationships provide a positive influence and social support for youth (Rhodes, 1994). A specific type of supportive adult relationship that exists to positively impact another

individual, typically younger, is known as a mentor. Such relationships provide opportunities for role modeling and skill development (Hurd, Zimmerman & Xue, 2008) and increase resilience in young adults (Masten, 2009).

The transition from high school to university is a time of increased risk for many individuals across both physical and mental health domains. The vulnerability individuals may experience during this time can be related to the lack of ability to handle new and additional stressors and responsibilities while also experiencing perceived declines in social support. Despite the increase risk associated with this transition, having a positive relationship with an adult can serve as a form of social support and is associated with positive outcomes.

## Chapter Two: Review of the Literature

Two types of mentoring relationships previously explored in the literature include formal and natural mentors. Formal mentorship typically occurs through an organization or program, compared to natural mentorship, wherein an individual comes into an informal relationship with a supportive adult without the aid of a third party. For example, a formal mentor may be provided through the Big Brother and Big Sisters program or through a school program, where youth, often whom are at-risk, are paired with an adult. In comparison, a natural mentor may be a family member or someone the youth meets in the community. One mechanism of influence through both relationships may be the mentor-mentee bond and the strength of the mentoring relationship (Thomas & Zand, 2009). While positive effects have been found for both types of mentoring relationships in the literature, the characteristics of the relationships, populations, and impacts studied all range widely.

### *Formal Mentorship*

Grossman and Tierney (1998) assessed 1,138 youth from single-parent households over a period of 18 months. Over 40% of the participants were on public assistance and were primarily African-American. The authors found that youth who were involved with the Big Brother and Sister program were significantly less likely to experience negative outcomes such as drug or alcohol use, fighting, and skipping school (Grossman & Tierney, 1998). These youth were also more likely to demonstrate positive outcomes as a result of the program, including increased confidence in school and a better relationship with their families (Grossman & Tierney, 1998). However, data was collected between 1991 and 1993 and updated research is needed to determine current outcomes, particularly as the Big Brother and Sister program has evolved over time.

Other formal programs have also found success reducing negative outcomes while simultaneously increasing positive results. Aronowitz (2005) interviewed 28 adolescents who were primarily economically disadvantaged (80%) and African-American (70%), all of whom had experienced a crisis, made a change as a result, and were currently in a formal mentoring program. The youth in the program reported that the connection to a caring adult helped them to better envision a positive future for themselves through increased feelings of competence and raising their own expectations (Aronowitz, 2005). However, the qualitative nature of the methodology does not allow for a direct comparison between other mentoring research and outcomes associated with having a mentor.

Cheng, McDonald and Elder (2009) examined the effect of a six-month mentoring program for adolescents who had been admitted to the emergency department as a result of a physical fight. Background information was not available on the youth but no differences existed between the control and intervention groups on age, gender, race, or family income. Mentors and youth met at least six times during the program. Their meetings focused on violence prevention through building skills to deal with conflict including conflict management, weapon safety, decision-making, and goal setting. Based on a wide range of violent and non-violent delinquent behaviours, the 56 youth and their families reported the mentoring program was effective at reducing aggressive and problem behaviour and increasing self-efficacy, compared to the 57 youth in the comparison group who received no intervention (Cheng et al., 2009). However, due to the violence prevention curriculum completed during the visits, it is unclear whether it was the relationship or the curriculum that led to the positive outcomes.

In order to directly study the mentor-mentee relationship, Zand et al. (2009) created a ten-item scale to assess the strength of the mentor-mentee bond and perceived mentor support. In the

first study, 219 disadvantaged American youth, primarily African-American, were assessed during their involvement in a community-based formal mentoring program. The youth and their mentors spent an average of 1.5 hours per week together during about five visits per month for an average of almost 11 months. The authors found that being involved with a mentor positively influenced the youth's relationship quality with adults, family and school bonding, and life skills (Zand et al., 2009). They also noted that females reported stronger relationships than males and stronger, higher quality mentoring relationships were associated with increased benefits (Zand et al., 2009). The authors believe that the males may not have had enough time to form as strong relationships as it may take them longer than females to create these bonds (Zand et al., 2009).

A second study also explored the mentor-mentee bond across a formal mentorship program. Two hundred and five at-risk youth, primarily African-American, were involved in a formal mentoring program where they spent an average of two hours a week with their mentor for nearly seven months. The youth were assessed on attachment to their parents and relational outcomes with other adults at eight and 16 months after beginning the program. The youth were also questioned on the quality of their relationship with their mentor based on the Mentoring-Youth Alliance Scale. Thomson and Zand (2009) reported that the strength of the youth-mentor relationship significantly predicted positive relational outcomes with adults at both follow-ups.

### *Natural Mentors*

In comparison to formal mentoring, natural mentorship occurs informally and while relationships are less structured, they are also typically longer lasting. However, perceived support through the mentor-mentee relationship is still an important mechanism of change in natural mentoring relationships.

Greenson and Bowen (2007) interviewed seven African-American adolescent females in

foster care during their transition to adulthood. For these individuals, having an informal mentor acted as a protective factor and the authors qualitatively found that the participants changed for the better (Greenson & Bowen, 2007). They reported that the wide range of support provided by their mentors included emotional, informational, appraisal, and instrumental support and the relationships were characterized by trust and a sense of caring (Greenson & Bowen, 2007). These important positive adult relationships helped these youth have more positive views of their future (Greenson & Bowen, 2007).

Similar results were reported by Munson, Smalling, Spencer, Scott and Tracy (2010), who interviewed 189 youth aging out of foster care who had a self-identified a mentor. The youth described the qualities of the mentor, their relationship, and the nature of the support they provided (Munson et al., 2010). Overall, the youth described their mentors as understanding and easy to talk to and their relationships were typically characterized by consistency, longevity, trust, authenticity, respect, and empathy (Munson et al., 2010). The mentors provided support that helped the youth stay on track, provided helpful advice, and emotional support (Munson et al., 2010). The authors expanded the understanding of the positive mentor-mentee bond by conceptualizing the support and characteristics that make these relationships beneficial (Munson et al., 2010).

In order to gain more quantitative information, Munson and McMillen (2008) asked 339 Missouri youth about the presence and characteristics of natural non-kin mentors. Overall, 62% of youth reported the presence of a mentor with several key findings (Munson & McMillen, 2008). Frequency of contact was positively related to quality of relationship (Munson & McMillen, 2008) and similar to previous findings (Zand et al., 2009), the authors found that females reported higher relationship quality than males (Munson & McMillen, 2008). The

authors believe that this gender difference may be explained by the fact that females may be more interested in close, confiding relationships than males (Munson & McMillen, 2008).

Natural mentoring relationships have also been examined longitudinally through the transition to adulthood. Hurd and Zimmerman (2010a) assessed 93 young African-American mothers with natural mentors over five years, during their transition to adulthood. Through self-reports and semi-structured interviews, the authors found depression and anxiety decreased slightly over time for those with a mentor but increased significantly for those without (Hurd & Zimmerman, 2010a). The authors also found that having a natural mentor had positive impacts on stress (Hurd & Zimmerman, 2010a). Overall, the authors believe having a natural mentor increased resilience in these youth through modeling effective coping mechanisms, and increasing the youth's abilities to handle stress, anxiety, and depression (Hurd & Zimmerman, 2010a).

The same was also true for a more general sample of African-American youth. Hurd and Zimmerman (2010b) examined 615 youth over five years during their transition to adulthood on a variety of physical and mental health measures. Those with mentors experienced more favourable outcomes during their transition to adulthood including less depressive symptoms and decreased sexual risk behaviour compared to those without a mentor. However, there were no differences between those with a mentor and those without on measures of substance use, alcohol or marijuana use. The authors believe the type of support provided by the mentors may not have influenced such areas (Hurd & Zimmerman, 2010b). Based on these studies, the authors note the importance of mentorship during the transitory period after high school for African-American youth related to sexual behaviour, depression, anxiety, and stress (Hurd & Zimmerman, 2010a; 2010b).



Although studies on mentorship in the general population have not been explored as extensively as mentorship on at-risk groups, many positive results are replicated. In a large US study, 7,840 youth from grades seven to 12 were asked about the presence of a natural nonparent mentor and were assessed on academic outcomes (Erikson et al., 2009). The authors also explored whether these effects were mediated by parental, school, peer or personal resources (Erikson et al., 2009). The authors found that the presence of a mentor had a positive impact on the educational outcomes of the youth, including educational attainment and academic performance, particularly for females (Erikson et al., 2009). Differences were also found related to the economic background of the youth, with disadvantaged youth reporting greater benefits from mentorship (Erikson et al., 2009). However, the authors did not assess relationship quality so it is unclear if this was a factor.

Zimmerman, Bingenheimer and Notaro (2002) also assessed mentorship within a large American study, but used a wider range of measures and a cross-sectional design. In this study, 770 youth, primarily African-American, were asked about a broad range of psychological, behavioural, educational and health outcomes, problem behaviours, and the presence and characteristics of a mentor. The authors found that youth with mentors had more positive school attitudes and displayed less problem behaviour, including fighting and marijuana use (Zimmerman et al., 2002). However, there were no differences found for anxiety and depression (Zimmerman et al., 2002). The authors believe this may be because the definition of mentor was too broad, leaving room to identify a person who may not have provided the same level of support as previous studies (Zimmerman et al., 2002).

A final study explored the outcomes associated with mentorship in a longitudinal study of 15,197 American youth transitioning to adulthood (Dubois & Silverthorn, 2005). The

participants were asked about the presence of a mentor and their relationship to him or her. They were also assessed on a range of educational, occupational, psychological, and physical health outcomes while concurrently measuring their personal and environmental risk factors. The authors found that those youth with a mentor were more likely to report positive outcomes related to current employment, educational achievement, life satisfaction, self-esteem, physical activity level, and safe sexual behaviour, as well as a reduction in violent and non-violent problem behaviours (Dubois & Silverthorn, 2005). There were no significant differences between those with a mentor and those without on alcohol or drug use, smoking, depression and suicidal ideation (Dubois & Silverthorn, 2005). Additionally, the benefit of having a natural mentor was not able to fully compensate for youth at increased environment or personal risk, (Dubois & Silverthorn, 2005). However, the authors note that formal mentors have been found to have greater impacts for at-risk youth and may be more beneficial than natural mentors for such individuals (Dubois & Silverthorn, 2005).

Dubois and Silverthorn (2005) also note that it may be more difficult to decrease negative outcomes than to increase positive effects, possibly because such normative behaviours are difficult to influence and lower levels of supervision are involved in the mentorship role (Dubois & Silverthorn, 2005). The length of the mentoring relationship was significantly related to positive outcomes, with greater positive outcomes associated with longer mentoring relationship (Dubois & Silverthorn, 2005). However, the study did not assess relational quality so it is unclear if this was also influencing the outcomes the youth experienced.

The natural mentoring literature includes longitudinal and cross-sectional studies, large-scale research and the exploration of the underlying mechanisms of change. While outcomes varied across studies, support was found for the benefit of mentorship in a range of areas. While

the mechanisms of change are still being explored, it appears to be related to characteristics of the mentoring relationship, including length, type, and perceived support provided. However, due to the mentor research being primarily conducted in the United States, it is not clear how the literature in this area generalizes to the Canadian population.

### *Mentoring Canadian Youth*

While the previously reviewed studies have been conducted in the United States, some studies have also explored the role of mentors on subsets of the Canadian population. Wright, John, Livingstone, Shepherd and Duku (2007) found benefits of a multi-component intervention program for youth at both low and high risk for antisocial behaviour. The three-part intervention included cooperative learning, classroom management, and peer tutoring and mentoring. Cooperative learning involved students with a range of abilities and behavioural problems working together in small groups. Classroom management centered on the teacher's creation of an environment conducive to learning and minimized disruptions. Finally, students were tutored and mentored by prosocial peers to model and learn appropriate behaviour in the classroom. The authors found benefits in school conduct and behaviour for both groups but the results were more pronounced in the low risk group (Wright et al., 2007). Despite the success of this program for at-risk Canadian youth, mentoring was only a portion of the intervention.

The effects of mentoring have also been explored on a more specific at-risk Canadian population: Aboriginal youth, who experience increased rates of higher rates of violence, substance abuse, poverty and school drop-out (Crooks, Chiodo, Thomas & Hughes, 2010). Aboriginal high school and university students volunteered to spend time mentoring Aboriginal elementary school children in a study conducted by Johnson and Halas (2011). Through such shared involvement as physical activity and educational games, the program promoted traditional

attributes of the community, including respect, responsibility, and reciprocal relationships (Johnson & Halas, 2011). While no formal measures were taken, both mentors and mentees reported positive experiences from the program including new skills and a sense of empowerment (Johnson & Halas, 2011).

Crooks et al. (2010) created, implemented, and evaluated a multi-component program, which included peer mentoring, to promote positive outcomes in Canadian Aboriginal youth. The researchers believe that the success of the program was evident through the indicators of engagement in the youth's behaviour, cognition, and attitudes. For example, youth in the program were more likely to attend class and perform better academically. While this program was met with success, similarly to Wright et al. (2007), mentoring was only a component of the intervention and not solely responsible for the positive outcomes associated with the program.

Overall, it is clear that the impact of formal and natural mentors increases positive and decreases negative outcomes, and the support and strength of the mentoring relationship is crucial to these changes. While previous research provides valuable information on the importance of the relationship and support provided by the mentor, generalizability is limited due to the focus on specific groups and the lack of formal measures and control groups.

#### *Critical Examination of Literature*

All five formal mentoring programs reviewed, involved youth who were from low SES backgrounds or at increased risk of violence. Studies that provided demographic information included participants who were primarily African-American. Because of the focus on at-risk groups, these samples are not representative of the American population and may have limited generalizability to both the general American population as well as to Canada.

Despite the limited range of participants, the impacts of formal mentorship were

supported across studies on a range of outcomes. Benefits related to formal mentorship included increased confidence in school and improved family relationships (Grossman & Tierney, 1998), increased feelings of competence and personal expectations (Aronowitz, 2005), reduced aggressive and problem behaviour, increased self-efficacy (Cheng et al., 2009), family and school bonding, improved life skills (Zand et al., 2009), and improved relationships with parents and other adults (Thomson & Zand, 2009; Zand et al., 2009). The mentor-mentee bond was explored as an underlying mechanism of change and it was found to predict outcomes over time (Thomson & Zand, 2009; Zand et al., 2009). However, despite the value of formal mentors across studies, research in this area may have limited extension.

Because measures differed across studies, comparison in some areas may be difficult. Additionally, no studies included a wide range of outcomes so it is unclear how extensive the value of formal mentorship is. Due to the populations used, generalizability may be limited beyond low SES groups and African-American populations. In comparison to formal mentors, natural mentors do not require any explicit training or skills and are not assigned as part of an organization or program, making the relationships inherently different. However, the more extensive natural mentoring literature provides a greater opportunity to further examine the role of mentors.

Naturally occurring mentors are reported by youth and emerging adults for between 52% (Zimmerman et al., 2002) and 73% of individuals (Dubois & Silverthorn, 2005), with the majority of studies reporting natural mentors for around 62% of participants (Hurd & Zimmerman, 2010a; Hurd & Zimmerman, 2010b; Munson & McMillen, 2008). However, definitions across studies differ. Some studies specify the mentor must be involved with the mentee from a set age (Dubois & Silverthorn, 2005; Erikson et al., 2009) or be above a certain

age (Hurd & Zimmerman, 2010a; Hurd & Zimmerman, 2010b; Zimmerman et al., 2002) or not related to the mentee (Dubois & Silverthorn, 2005; Munson et al., 2010). Mentorship is typically described as an adult who makes an importance positive difference in one's life (Dubois & Silverthorn, 2005) or an adult who an individual considers to be his or her mentor; someone to go to for support and guidance (Hurd & Zimmerman, 2010a; Hurd & Zimmerman, 2010b). However, differences in wording and criteria may influence results and limit the generalizability across studies.

Large-scale studies on nationally representative samples of the American population have been conducted related to natural mentors (Dubois & Silverthorn, 2005; Erikson et al., 2009). However, data was collected from 1994 to 1996 and in 2001, and has become outdated as a result (Dubois & Silverthorn, 2005; Erikson et al., 2009). Additionally, both large-scale studies utilized data from the National Longitudinal Study of Adolescent Health (Erikson et al., 2009; Zimmerman et al., 2002), limiting variability in the results. Similar to research on formal mentors, many studies focused on African-Americans (Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b, Zimmerman et al., 2002), with limited generalizability due to this ethnic group generally reporting lower GPAs, residing in urban settings, and having low SES (Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b).

Natural mentoring studies have been conducted both longitudinally (Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b) and cross-sectional (Dubois & Silverthorn, 2005; Erikson et al., 2009; Munson & McMillen, 2008; Zimmerman et al., 2002) as well as qualitatively (Greenson & Bowen, 2007; Munson et al., 2010). The benefit of longitudinal studies is the ability to examine mentorship over time, particularly through the transition to adulthood. Longitudinal studies on mentorship have uncovered effects that would have been

otherwise unrecognized in the areas of mental health (Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b). While the majority of studies were cross-sectional (Dubois & Silverthorn, 2005; Erikson et al., 2009; Munson & McMillen, 2008; Zimmerman et al., 2002), this design limits the ability for causal referencing (Zimmerman et al., 2002). While qualitative designs can provide rich personal detail, the lack of control groups and quantitative measures limits comparison to other mentoring studies (Greenon & Bowen, 2007; Munson et al., 2010).

While support for mentors was found for a range of outcomes, variables differed across studies. Many studies did not examine any characteristics of the mentoring relationship, including length or perceived support (Dubois & Silverthorn, 2005; Erikson et al., 2009; Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b; Zimmerman et al., 2002), which have been found to be important to predicting outcomes (Thomson & Zand, 2009; Zand et al., 2009). Additionally, research with adolescent mothers failed to examine the role of support from the father of the child, which is also a potentially important influence (Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b).

While data in this area is limited by its self-report nature (Erikson et al., 2009; Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b), the value of mentorship has been found after controlling for gender, age, SES, and parental support, suggesting that findings are robust (Hurd & Zimmerman, 2010a; Hurd & Zimmerman 2010b). Overall, mentors have been found to impact a range of areas including stress, anxiety (Hurd & Zimmerman, 2010a), depression (Hurd & Zimmerman, 2010a; Hurd & Zimmerman, 2010b), sexual risk behaviour (Dubois & Silverthorn, 2005; Hurd & Zimmerman, 2010b), educational attainment, academic performance (Dubois & Silverthorn, 2005; Erikson et al., 2009), school attitudes, problem behaviour including fighting and marijuana use (Zimmerman et al., 2002), violent and non-violent problem behaviours,

employment, life satisfaction, self-esteem, and physical activity level (Dubois & Silverthorn, 2005). However, mixed results have been found for some outcomes.

In the area of mental health, some studies have not found any effect of mentorship on anxiety (Zimmerman et al., 2002) or depression (Dubois & Silverthorn, 2005; Zimmerman et al., 2002). Other studies found no influence of mentors in the areas of substance use, alcohol (Dubois & Silverthorn, 2005; Hurd & Zimmerman, 2010b) smoking, depression or suicidal ideation (Dubois & Silverthorn, 2005). Erikson et al. (2009) reported differences across SES groups not previously found. Specifically, low SES individuals were less likely to have a natural mentor (Erikson et al., 2009), although this finding has not been replicated. As well, further exploration is needed due to a lack of results in problem behaviour and substance use and mixed results in the areas of anxiety, depression, and substance use.

Finally, the mentoring research has limited generalizability across studies. Specifically, results from natural mentoring studies may have limited application to formal mentoring programs because the relationships of youth in their daily lives are likely different from those they are assigned through formal programs (Zimmerman et al., 2002). Studies on mentoring Canadian youth are also limited, although success has been found for multicomponent programs that include peer or adult mentorship as well as qualitative studies on Aboriginal populations. However, due to the lack of studies that examine mentorship in isolation or provide any formal measures or control groups, it is difficult to critique or generalize results to the general Canadian population.

Overall, the benefits of mentorship have been found across formal and natural mentoring relationships in cross-sectional, longitudinal, and qualitative studies from subtests of the Canadian and American populations as well as from nationally representative American samples.



However, the literature is limited by outdated data, lack of generalizability, a reliance on self-reports, and mixed results in the areas of mental health, substance use, and problem behaviour. Despite the support for mentorship, the limitations in the current literature restrict applications to the general and current Canadian population.

### *The Current Study*

While youth transitioning to adulthood may be at an increased risk of a range of mental and physical health issues, the reviewed research provides a strong foundation of support for the positive effects of mentorship during this time. Despite the fact that Dubois and Silverthorn (2005), Erikson, McDonald and Elder (2009), and Zimmerman et al. (2002) all assessed the effects of mentoring using large samples, further research is needed for several reasons. Firstly, data for these studies ranges from 10 to 18 years old, leaving a gap in the literature. Additionally, because of the focus on specific groups such as at-risk youth, teen mothers and African-American youth, there is limited generalizability of these results to the general population. Finally, there are no known studies that exist exploring the effects of mentoring on a general Canadian sample.

The current study is needed due to the lack of updated research exploring mentorship for a Canadian sample on a range of outcomes. Erikson et al. (2009) focused on educational outcomes, however, the authors ignored behavioural, psychological, and physical health outcomes, which have found to be important (Dubois & Silverhorn, 2005; Hurd & Zimmerman 2010a; 2010b; Keller & Pryce, 2012; Pryce & Keller, 2012; Zimmerman et al., 2002). Although Dubois and Silverthorn (2005), Hurd and Zimmerman (2010b) and Zimmerman et al. (2002), used a wider range of measures than Erikson et al. (2009), all failed to consider the quality of the relationship, which has been found to be influential (Keller & Pryce, 2012; Munson &

McMillen, 2008; Munson, Smalling et al., 2010; Pryce & Keller, 2012; Thompson & Zand, 2009; Zand et al., 2009). The current study had participants respond to a wide variety of measures encompassing a range of outcomes while also considering the quality, length, and type of the mentoring relationship. Overall, no known studies have used a broad range of measure with a Canadian sample and also assessed the mentoring relationship.

Past research suggests that mentorship positively impacts a range of outcomes including stress, anxiety (Hurd & Zimmerman, 2010a), depression (Hurd & Zimmerman, 2010a; Hurd & Zimmerman, 2010b), sexual risk behaviour (Dubois & Silverthorn, 2005; Hurd & Zimmerman, 2010b), academic success (Dubois & Silverthorn, 2005; Erikson et al., 2009), school attitudes (Zimmerman et al., 2002), problem behaviour, (Dubois & Silverthorn, 2005; Zimmerman et al., 2002), life satisfaction, self-esteem, and physical activity level (Dubois & Silverthorn, 2005). While similar findings are expected in the current study, with increased positive and decreased negative outcomes for those with a mentor compared to those without, the current research is needed to provide updated research on a Canadian sample. Due to the increased vulnerability associated with the transition to adulthood, the focus is on mentorship during that transition.

The current research aims to answer four specific research questions:

1. What experiences do Canadian university students have regarding mentorship?
2. Is having a mentor associated with increased positive and decreased negative outcomes for Canadian undergraduate students transitioning to adulthood?
3. Can mentorship predict readiness for adulthood beyond support from family and friends?
4. Are there any differences in outcomes associated with various types of naturally occurring mentoring relationships?

## Chapter Three: Method

### 3.1 Introduction

Undergraduate university students completed a self-report questionnaire containing numerous scales assessing a wide range of outcomes. Participants were also asked about the presence of a mentor in their life and their relationship. Control variables included demographic variables as well as both peer and parental support.

### 3.2 Participants

The initial sample included 193 undergraduate students from the University of Calgary. However, data was not included from participants who did not fully complete the survey and did not complete the mentoring questions (20.2%,  $n=39$ ), completed the survey but did not complete the mentoring questions (1.0%,  $n=2$ ), completed the mentoring questions incorrectly (responded with general mentoring as opposed to a single mentor) (0.5%,  $n=1$ ), and those who were over the age of 29 (1.6%,  $n=3$ ). The final sample for analysis included 148 individuals, including 42 males and 106 females ranging in age from 17 to 28, with a median age of 19.0 and a mean age of 19.8. One hundred and twelve individuals self-reported belonging to a middle SES household (75.7%), 18 were from a low SES household (12.2 %) and 18 reported belonging to a high SES household (12.2%). Sixty-nine percent of individuals reported living at home with their parents ( $n=102$ ), followed by 17% living with roommates ( $n=25$ ), 7% were living with a romantic partner ( $n=10$ ), 3% living alone ( $n=5$ ), 3% living in university residence ( $n=5$ ), and one individual reported living with grandparents (0.5%).

Forty-eight percent of individuals were in the faculty of arts ( $n=72$ ), and 32% were in the faculty of science ( $n=48$ ). The remaining individuals belonged to the faculties of education

(*n*=4), business (*n*=9), kinesiology (*n*=3), medicine (*n*=3), nursing (*n*=5) and engineering (*n*=3). Thirty-five percent (*n*=51) were in their first year, 30% were in their second year (*n*=45), 17% were in their third year, 12% in their fourth year (*n*=18), and 4% reported being in their fifth year or greater (*n*=6).

Sixty-five percent of individuals described their ethnicity as Caucasian (*n*=97), followed by 16% Asian or Filipino (*n*=24) and 7% Middle Eastern (*n*=10). The remaining individuals were an even mix of East Indian, Aboriginal/Metis, European, African, Latino/Hispanic, and a combination of nationalities. Ninety-five percent of individuals reported a primarily language of English (*n*=140), with the remaining 5% reporting an even split of other first languages including Mandarin/Cantonese, Spanish, Korean and East Indian. Ninety-seven percent were full-time students (*n*=144) and 62% reported currently having a job while attending school (*n*=91).

Sixty-four percent of individuals reported having a natural mentor (*n*=95). Most mentors were female (*n*=58) and mentor's ages ranged from 18 to 80. Most individuals reported the ethnicity of their mentors as Caucasian of (*n*=62), followed by Asian/Filipino (*n*=11), with the remaining mentors being East Indian (*n*=11), Middle Eastern (*n*=6), European (*n*=6), Latino/Hispanic (*n*=3), Native/Metis (*n*=1), African (*n*=1) or a combination (*n*=1). Most individuals reported their relation to their mentor was a parent (*n*=47) or another family member (*n*=18) followed by a friend or family friend (*n*=16). Other mentors were typically community members including teacher/coach (*n*=7), pastor (*n*=4) or someone they met through work (*n*=3). Most individuals reported knowing their mentors for at least 10 years (*n*=51), and others had known him or her 5 to 10 years (*n*=14), 2 to 5 years (*n*=19), 1 to 2 years (*n*=2) or less than a year (*n*=8). Most individuals reported spending nearly every day with their mentor (*n*=34), followed by a few times a week (*n*=30) and less than once a month (*n*=20) or once or twice a month

( $n=10$ ).

### **3.3 Sampling Procedures**

Individuals were recruited from undergraduate classes at the University of Calgary in the fall of 2012.

### **3.4 Instruments**

#### *Sexual Health*

The measures of physical health include sexual risk behaviour as determined by age of first sexual encounter, frequency of sexual intercourse within the past year on a five-point scale from 0 to 12 or more times, (1-2 times, 3-5 times, 6-8 times, 9-11 times, 12+ times), number of sexual partners within past year, and frequency of condom use and/or birth control on a five-point scale from almost never to always (1 = almost never; 2 = not very often; 3 = 50% of the time; 4 = almost all of the time; 5 = always). Condom/birth control use is reverse coded and responses are tallied to get an overall sexual risk score, with higher results indicating more sexual risk taking behaviour. Those who report never having a sexual encounter are given the lowest risk score possible. Similar items have been successfully used to assess sexual risk behaviour in emerging adults (Fergus, Zimmerman & Caldwell, 2007).

#### *Physical Health*

In order to determine if individuals meet the Canadian standards of 2.5 hours of moderate to strenuous exercise a week (Public Health Agency of Canada, 2011), individuals are asked the duration and amount and their physical activity per week (not at all, 1-2 times, 3-4 times, 5-6 times, 7 or more times) and whether or not they currently play on any type of organized sports teams. Strenuous exercise is defined as any physical activity requiring moderate to strenuous

effort that is sustained long enough to cause one to sweat or breathe heavily, such as running/jogging, aerobics, heavy weight lifting, etc. Similar questions were asked by Downs & Ashton (2011) and used in the Vigorous Physical Activity and Sports Participation Questionnaire (Bray & Born, 2004).

In the current study, diet is assessed using six items (e.g., how important is healthy eating is to you; how often do you get your daily recommended serving of five fruits and vegetables a day) that participants rated on a five-point scale (1 = not important/almost never; 2 = slightly important/not very often; 3 = somewhat important/some of the time; 4 = fairly important/most of the time; 5 = very important/nearly all of the time). Similar questions were used to assess healthy eating habits by Downs and Ashton (2011).

#### *Problem Behaviour*

Cigarette, alcohol and drug use are assessed based on the scale used for the 'Monitoring the Future' study (Johnston, O'Malley, Bachman & Schulenberg, 2011), where participants self-reported if they have ever tried a variety of substance and report any current use. The survey is shortened for the current study and only asks participants to self-report how often they have used alcohol, marijuana and other illicit drugs within the past month and how many cigarettes they have smoked in the past seven days. Similarly modified items were used successfully by Hurd and Zimmerman (2010b).

Other problem behaviours are measured by asking participants to self-report occurrences within the last six months of various violent and non-violent delinquent activities (never, 1-2 times, 3-6 times, 7-12 times, 13 or more times) including theft, arson, vandalism, selling drugs, trouble with police, gang involvement, carrying a weapon and being in a physical fight or hitting someone. Responses are tallied to get a total problem behaviour score with higher numbers

indicating greater occurrences of problem behaviour. Similar measures were used by success to determine violent and non-violent delinquent behaviour by Cheng et al. (2008) and Zimmerman et al. (2002).

### *Mental Health*

Measures of psychological well-being include depression, anxiety, stress, self-esteem, and life satisfaction. Depressive and anxiety symptoms are each assessed by six items from the Brief Symptom Inventory (BSI) (Derogates & Spencer, 1982). The BSI asks participants how often in the last week they have been uncomfortable due to depressive symptoms (e.g., no interest in things) and anxiety symptoms (e.g., suddenly fearful for no reason) on a five-point scale (1 = not at all uncomfortable; 2 = a little uncomfortable; 3 = moderately uncomfortable; 4 = quite uncomfortable; 5 = very uncomfortable). The BSI has a long history of successful use with a range of populations and has high internal consistency and test-retest reliability (Derogatis, 1993).

The 10-item Perceived Stress Scale measures the participant's view of his or her stress level (e.g., in the last month, how often have you felt that you were unable to control the important things in your life?) on a five-point scale (1 = never; 2 = almost never; 3 = sometimes; 4 = fairly often; 5 = very often) (Cohen, Lamarck & Mermelstein, 1983). Items are summed, resulting in an overall stress score. This scale has been found to have good psychometrics including high test-rest reliability (.85) and good internal validity (Coefficient  $\alpha = .84$  to  $.86$ ) (Cohen et al., 1983).

Self-esteem is measured through the Rosenberg Scale of Self-esteem (R-SES) (Rosenberg, 1965), with participants responding to all 10 items (e.g., I feel that I have a number of good qualities) on a four-point scale (strongly agree, agree, disagree, strongly disagree).

Responses are summed to create a total score of global self-esteem. The R-SES is a widely used measure of self-esteem with high internal consistency (Coefficient  $\alpha = .80$ ) and test-retest reliability (.85) (Shahani, Dipboye & Phillips, 1990; Silber & Tippet, 1965).

Finally, the five item Satisfaction with Life Scale (SWLS) asks participants to rate their agreement with general statements about their life (e.g., in most ways my life is close to ideal) on a seven-point scale (1 = strongly agree; 2 = agree; 3 = slightly agree; 4 = neither agree nor disagree; 5 = slightly disagree; 6 = disagree; 7 = strongly disagree) in order to gauge subjective well-being (Deiner, Emmons, Larsen & Griffin, 1985). Items are summed to create an overall score of life satisfaction. This measure has been shown to have good internal consistency (Coefficient  $\alpha = .85$ ), test-retest reliability (.84) and positive correlations with other self-reported measures of well-being (.82) (Pavot et al., 1991).

#### *Academic Outcomes*

Measures of academic success include participant's self-reported grade 12 GPA if the participant is in his or her first year, or, if past first year, estimated university GPA. Five items assess school efficacy (e.g., even if the material is difficult, I can learn it) based on those used by Midgley et al. (2000) and four items measure school importance (e.g., even if I do well in school, I still won't be able to find a good job when I'm finished), which are based on those used by Roeser, Lord and Eccles (1994). Both scales are modified for use for the current study's university-age sample. Participants respond to all nine items on a five-point scale (1 = strongly disagree; 2 = disagree; 3 = somewhat agree/somewhat disagree; 4 = agree; 5 = strongly agree).

Finally, participants are asked an open-ended question about his or academic and/or career goals. Goals are then combined into three basic categories: no goals, some goals or clear goals. The first category includes those who noted no academic or career goals or very vague



goals, such as ‘figuring out what I want to do with my life’. The second category includes those who noted some academic or career goals but still were either short-term, nonspecific or had elements of uncertainty. Examples in this category include ‘be happy’, ‘get good grades’ or ‘have enough money to support myself’. The final category includes only very clear and specific academic or career goals, such as finishing a specific degree on time and then seeking employment in a noted field.

### *Social Support*

Parental support is assessed by the Perceived Social Support - Family (PSS-FA), where participants respond to the 20 items (e.g., I rely on my family for emotional support) with either yes, no or I don’t know. Each positive response is given a score of one point and the responses are tallied for a total social support score for family, with a maximum score of 20. This scale has good internal reliability with a university age sample (Coefficient  $\alpha = .89$ ) (Procidano & Heller, 1983).

The Perceived Social Support - Friends (PSS – FR) assesses social support from friends. Similar to the family version, participants respond to the 20 items (e.g., my friends are good at helping me solve problems) with yes, no or I don’t know, and the positive responses are tallied to determine an overall social support score for friends (Procidano & Heller, 1983).

### *Mentoring Variables*

All participants are asked to respond with either yes or no to the question: “Is there an adult in your life who you consider to be your mentor? That is, someone you can go to for support and guidance or if you need to make an important decision or who inspires you to do your best?” The definition is based on that used previously by Hurd and Zimmerman (2010a, 2010b) and Zimmerman et al. (2002). Students who identify a mentor are asked follow-up

questions on their relation to the mentor, time spent together on a monthly basis, length of the mentoring relationship and demographic variables of their mentor (age, gender, ethnicity and occupation). They are also given a 10-item measure of relationship strength, the Mentoring-Youth Alliance Scale (MYAS) (Zand et al., 2009). Participants respond to each item (e.g., my mentor is happy when good things happen to me; I look forward to time I spend with my mentor) on a four-point scale (1 = not at all true; 2 = somewhat true; 3 = mostly true; 4 = very true). This measure was chosen because of its use with this population in determining relationship quality between mentors and high internal consistency (Coefficient  $\alpha = .92$ ) (Zand et al., 2009). Finally, individuals were provided with the opportunity to comment on how their mentor has influenced them.

#### *Readiness to be an Adult*

Currently there is no appropriate scale for assessing how prepared an emerging adult is for adulthood. Therefore, a 14-item scale assessing readiness to be an adult was created specifically for this study based on the work of Arnett (1994, 1998) and Gurba (2008). Arnett (1994) had 346 college students report whether each of 40 items was or was not necessary for reaching adulthood. Areas included role transitions (e.g., supporting self financially, marry, move out of parent's house, etc.), cognition (e.g., having beliefs and values independent from parent or other influences), emotion (e.g., establish a relationship with parents as an equal adult, having good control over one's emotions, etc.), behaviour (e.g., avoiding drunk driving, avoiding using profanity, etc.), biology (e.g., capable of bearing or fathering children, etc.), legal (e.g., obtaining driver's licenses, reaching age 18, etc.), and responsibilities (e.g., capable of keeping a family safe, accepting responsibilities for the consequences of your actions, etc.). Despite role transitions, such as completing one's education, getting married, or becoming a parent, have

been historically essential markers for reaching adulthood (Hogan & Astone, 1986; Modell, 1989), less than 20% of participants rated these as essential (Arnett, 1994). Items that were more highly endorsed included supporting oneself financially, moving out of one's parent's house, accepting responsibility for the consequences of one's actions, deciding on beliefs and values independent of parents or other influences, and establishing a relationship with parents as equal adults (Arnett, 1994).

Two important follow-up studies found similar results. Arnett (1998) had 140 emerging adults complete a similar 38-item questionnaire. The most important item was accepting responsibility for one's actions followed by independent decision making and reaching financial independence (Arnett, 1998). Importantly, no differences were found across genders (Arnett, 1998), which supports the generalizability of markers for adulthood for both males and females. In a second follow-up study, Gurba (2008) had both adolescents and adults respond to a similar questionnaire, Attributes of Adulthood (Arnett, 1997), noting which were the most important and the least important attributes of adulthood. Regardless of age, several indicators emerged as the most essential including financial independence, accepting responsibility for the consequences of one's actions and having good control of one's emotions (Gurba, 2008).

Based on the items and areas rated as the most important for reaching adulthood in these studies (Arnett 1994, 1998; Gurba, 2008), three readiness for adulthood subscales were created for the current questionnaire in the areas of personal, relational, and financial. The relational subscale contains five items designed to measure positive adult relationships with parents and peers as well as dependability (e.g., others can count on me to do what I will say, I have a relationship with my parents as equal adults). Items in the personal subscale are based around emotional regulation, handing and accepting responsibility, independent decision-making and

personal values (e.g., I accept responsibility for my actions, I am capable of making independent decisions). Finally, four items assessing financial indicators include financial independence, living situation, bill payment, and responsible use of credit (e.g., I pay all my own bills, I have reached financial independence). The total scale included 14 items that can be examined via the subscale or totaled for an overall readiness for adulthood score. While items were primarily based on those noted to important in previous research (Arnett, 1994, 1998; Gurba, 2008), additional items were included not previously studied but related to areas of importance. Participants were asked to respond to each item on a seven-point scale from (1 = very untrue of me; 2 = untrue of me; 3 = somewhat untrue of me; 4 = neutral; 5 = true of me; 6 = true of me; 7 = very true of me). See Appendix for the Readiness for Adulthood scale.

### **3.5 Procedure**

Individuals who were interested in participating supplied their email addresses and were sent the link to the questionnaire on Survey Monkey to be completed at their convenience. Participants were offered to enter their name into a draw for a gift certificate for the campus bookstore as an incentive for their participation.

### **3.6 Data Analyses**

#### **3.6.1 Data Cleaning and Preparation.**

The number of missing cases ranges from 0 to 10 and includes the following across scales: physical activity: 2; health eating: 1; substance use: 5, delinquent behaviour: 3; depression: 2; anxiety: 0; stress: 5; self-esteem: 1; life satisfaction: 0; school efficacy: 1; school importance: 3; relational readiness for adulthood: 2; personal readiness for adulthood: 3; financial readiness for adulthood: 6; total readiness adulthood scale: 8; support from family: 10;

support from friends: 3; support from mentor: 0. All missing data were filled in SPSS using the linear interpolation algorithm.

Due to a low response rate (57.8%), sexual health is eliminated from further analysis. Due to an error in the questionnaire, it is unclear if the low response rate was due to participants not being sexually active, participants being uncomfortable responding to the personal nature of the questions or for alternative reasons.

Due to the low rates of those reporting any problem behaviour, delinquent behaviour was recoded from a categorical to a dichotomous variable (1 = any amount of the behaviour, 0 = no amount of the behaviour). Substance use was similarly recoded to some or none for cigarette, marijuana and other drug use. Alcohol use was recoded on a scale of 1 to 4 (1 = 0 drinks/month; 2 = 1-9 drinks/month; 3 = 10-29 drinks/month; 4 = 30+ drinks/month).

All variables are approximately normally distributed and an examination of the descriptive statistics shows that both skew and kurtosis are within acceptable ranges of +/- 2.00 (Field, 2009) except for strength of the mentoring relationship, which was negatively skewed; however, given that the skew value was just outside the acceptable range and the sample size was large, the decision was made to not transform the data. See Table 1 for the descriptive statistics. Univariate outliers were explored via z-scores. One outlier below -2.00 was found in the school importance variable (-4.06), which was Winsorized to a z-score of 3.25 (item value of 5.00 to 6.27) but no extreme outliers were identified. Mahalanobis distance was examined to explore multivariate outliers for the predictors of readiness for adulthood with social support from family and social support from friends. Eight values were determined to be over the critical value. There were no differences found for any analyses with or without the outliers so they were included in all analyses.

### **3.6.2 Psychometric Analyses.**

To determine the internal consistency of the scales used in the study, Coefficient alpha was calculated. Outcomes were examined for group differences across gender, SES and those who have a mentor and those who do not (mentor status).

#### ***3.6.2.1 Statistical analyses of research question one.***

To explore the different types of experiences that university students have, descriptive statistics were analyzed across mentor presence. ANOVAs with Sidak corrections for multiple tests were conducted for mentor presence across SES, gender, and ethnicity. Qualitative statements on mentoring relationships were also examined.

#### ***3.6.2.2 Statistical analyses of research question two.***

In order to determine if having a mentor was associated with increased positive and decreased negative outcomes, four types of analyses were utilized. Chi squared analyses were conducted to determine if differences were present across categorical variables (weekly activity level, playing on a sports team, substance use, and delinquent behaviour). A series of ANOVAs were conducted using Sidak corrections. Differences were examined across gender, SES, and mentor status for physical health (weekly activity level, playing on a sports team, diet), mental health (anxiety, depression, stress, self-esteem, life satisfaction), problem behaviour (substance use, delinquent behaviour), academic outcomes (school efficacy, school importance, GPA, academic/career goals) and support from family and friends. To further explore differences in the Readiness for Adulthood scale, the total score as well as the three subscales were explored across mentor status. Mentoring variables were also explored with respect to whether mentor-mentee ethnicities and genders were the same or different, the length of the mentoring relationship, the

amount of time spent together, the type of relationship and the strength of the mentoring relationship. Outcomes were also re-examined using ANCOVAs using Sidak corrections for multiple tests to control for support from family and friends for continuous variables (mental health, problem behaviour, academic outcomes), in order to determine if there were any differences in these variables while controlling for various types of social support.

### ***3.6.2.3 Statistical analyses of research question three.***

To answer the third research question, if mentorship can predict readiness for adulthood beyond support from family and friends, a hierarchical regression was conducted. Support from family and friends were entered into the model first, followed by mentor status.

### ***3.6.2.4 Statistical analyses of research question four.***

Finally, to determine if there were any differences in outcomes associated with various types of naturally occurring mentoring relationships, ANOVAs using Sidak corrections were conducted across mentoring variables for outcomes where significant differences were found, including only individuals with a mentor. The mentoring variables examined included whether mentor-mentee genders and ethnicities were the same or difference, the length of the mentoring relationship, type of relationship, and the amount of time spent together. To determine if there was any relationship between significant outcomes and strength of the mentoring relationship, Pearson's correlations were conducted.

## Chapter Four: Results

### 4.1 Psychometric Analyses

Internal reliability of the measures in the current study was assessed. Although similar items to assess healthy eating habits were used by Downs & Ashton (2011), the internal reliability of the items in the current study is questionable (George & Mallery, 2003) (Coefficient  $\alpha = .69$ ). For problem behaviour, internal reliability is poor (George & Mallery, 2003) (Coefficient  $\alpha = .56$ ) and substance use is questionable (George & Mallery, 2003) (Coefficient  $\alpha = .64$ ).

In the area of mental health, high internal reliability is replicated in the current study across all areas including anxiety (Coefficient  $\alpha = .89$ ), depression (Coefficient  $\alpha = .88$ ), stress (Coefficient  $\alpha = .87$ ), self-esteem (Coefficient  $\alpha = .93$ ), and life satisfaction (Coefficient  $\alpha = .88$ ). However, internal reliability ranges in the area of academics. Specifically, the internal reliability for school efficacy is high (Coefficient  $\alpha = .90$ ) but the school importance items are unacceptably low (Coefficient  $\alpha = .34$ ), primarily due to the item ‘even if I do well in school, I still won’t be able to find a good job when I’m finished’. Internal reliability of the Readiness for Adulthood scale was acceptable for research purposes (George & Mallery, 2003) (Coefficient  $\alpha = .717$ ).

Finally, high internal reliability on the scale assessing support for family is replicated (Coefficient  $\alpha = .94$ ) and acceptable internal reliability is also found for support from friends (Coefficient  $\alpha = .90$ ). Lastly, high internal consistency is replicated assessing the strength of the mentor-mentee relationship (Coefficient  $\alpha = .96$ ).

### 4.2 Statistical Analyses of Research Question One

Sixty-four percent of individuals reported having a natural mentor. There were no group



differences found for those with a mentor and those without across gender, ethnicity or SES groups. As well, for those with a mentor, there were no differences across same or different mentor-mentee ethnicities and genders, the length of the mentoring relationship, amount of time spent together or the type of relationship. However, a main effect of participant gender was significant for mentoring relationship strength,  $F(1, 93) = 9.42, p = .003, \eta_p^2 = .092$  with females reporting stronger relationships with their mentors ( $M=38.88$ ) than males ( $M=37.05$ ).

In order to further explore differences between types of mentors, individuals were divided into either kin or non-kin. Length of mentoring relationship was longer for kin mentors ( $M=5.64$ ) than non-kin mentors ( $M=3.70$ ),  $F(4, 89) = 24.85, p < .001, \eta_p^2 = .528$ . Tukey HSD post-hoc analyses confirmed that kin mentors were more likely to have mentoring relationships in the range of 10 years to lifelong. Individuals with non-kin mentors were more likely to have mentors that were different ethnicities ( $M=1.80$ ) and those with kin mentors were more likely to have mentors of the same ethnicity ( $M=1.28$ ),  $F(1, 93) = 17.65, p < .001, \eta_p^2 = .159$ . Individuals with non-kin mentors also tended to have mentors of different gender ( $M=1.28$ ) and those with kin mentors tended to be the same gender ( $M=1.48$ ), but this effect was only approaching significance,  $F(1, 91) = 3.69, p = .058, \eta_p^2 = 0.39$ . Strength of relationship and time spent together were not different across kin and non-kin mentors.

Many individuals with mentors noted the important role this individual played in his or her life:

She's always there to listen so that I can solve my problems on my own but she knows sometimes I need to say it out loud to work out the puzzle. She never shoves advice down my throat.

My mentor has helped me in preparing for exams and has helped me when I have had a bad day whether it was dealing with a bad grade or dealing with stress or anything else.

She helps me take a step back and rationalize everything. She helps me prioritize. I used to "turtle" when I got too stressed and gave up. She constantly reminds me to relax and know that if something goes south that it is not the end of the world and just think about how you can avoid it in the future.

My mentor constantly challenges me to be the best I can be...He continued to support and challenge me after high school and into university.

Other individuals noted the importance of the practical aspects of their relationship:

When I was applying to summer jobs, both for 2011 and 2012, my mentor sat with me and helped me with my resume and cover letter to send out to prospective employers. She probably spent over 30 hours looking at and helping me tweak these documents so that they would be presentable, and I really appreciate this effort that she gave to me to help me.

Others noted their mentors aided with their transition after high school:

Pretty much taught me all about what I should expect and know transitioning from high school to university

She helped push me to study harder in high school, so that I can develop better habits in university.

Finally, some individuals also noted their mentors were influential in particular difficult situations:

Helping me gain back my worth after several incidents' of sexual abuse.

Helped prevent me from suicide, encouraged me to get a post-secondary education.

He has helped take the needed steps to ensure lasting sobriety.

## **4.3 Statistical Analyses of Research Question Two**

### **4.3.1 Chi-squared Analyses.**

Chi-squared analyses revealed that having a mentor was significantly associated with differences in academic and career goals,  $\chi^2(2) = 7.94, p = .019$ . Specifically, those who reported no goals were similar across mentor status (no mentor  $n=16$ ; mentor  $n=20$ ), but individuals with

some goals were more likely to have a mentor (n=21) than those without (n=8), and those with clear academic/career goals, were also more likely to report having a mentor (n=57) than not (n=25).

No significant effects were found related to any other categorical variables using chi-squared analyses. Specifically, there were no differences found between those individuals with a mentor and those without on weekly activity level, sport team involvement, substance use or delinquent behaviour.

#### **4.3.2 ANOVA Analyses.**

##### *Physical Health*

There were no group differences found on healthy eating habits or playing on a sports team across gender, SES or mentor status. Weekly activity level differed significantly across gender, with males reporting more weekly physical activity ( $M=1.85$ ) than females ( $M=1.56$ ),  $F(1, 136) = 4.03, p = .047, \eta_p^2 = .029$ . No other differences were found across SES or mentor status for weekly activity level.

##### *Mental Health*

There were no group differences found across gender or SES or mentor status on depression or stress. However, a three way interaction was significantly different related to anxiety,  $F(2, 136) = 3.28, p = .040, \eta_p^2 = .046$ . Low SES males with a mentor reported less anxiety ( $M=2.0$ ) compared to low SES males without a mentor ( $M=11.5$ ) and low SES females with a mentor reported more anxiety ( $M=10.0$ ) than low SES females without ( $M=4.0$ ). No other group differences across SES, gender or mentor status were significant in the area of anxiety.

Self-esteem differed significantly by gender,  $F(1, 136) = 3.95, p = .049, \eta_p^2 = .028$ , with males reporting higher self-esteem ( $M=33.00$ ) than females ( $M=29.32$ ). Life satisfaction differed

significantly between SES groups,  $F(2, 136) = 3.73, p = .026, \eta_p^2 = .052$ . Tukey HSD post-hoc analyses confirmed that those from low SES groups reported lower life satisfaction ( $M=19.44$ ) than both middle ( $M=24.79$ ) and high SES individuals ( $M=27.11$ ). No other significant differences were found across SES, gender or mentor status in the area of mental health.

### *Problem Behaviour*

There were no group differences found on substance use across gender, SES or mentor status. Delinquent behaviours were significantly different for males and females,  $F(1, 133) = 4.75, p = .031, \eta_p^2 = .034$ , with males reporting more delinquent behaviour ( $M=1.44$ ) than females ( $M=1.19$ ). There were no other significant group difference, but a main effect of SES was approaching significance,  $F(2, 133) = 2.96, p = .055, \eta_p^2 = .043$ , with high SES individuals reporting more delinquency behaviours ( $M=1.55$ ) than low ( $M=1.16$ ) and mid SES individuals ( $M=1.25$ ).

### *Academic Outcomes*

There were no group differences found on GPA across gender or mentor status, but a difference across SES groups was approaching significance,  $F(2, 136) = 2.82, p = .063, \eta_p^2 = .040$ , with low SES individuals reporting lower GPAs ( $M=74.54$ ) than middle ( $M=79.51$ ) and high SES individuals ( $M=84.12$ ). Academic and career goals were also significantly different across SES,  $F(2, 135) = 6.10, p = .003, \eta_p^2 = .083$ . A post-hoc Tukey HSD confirmed that those from low SES households were more likely to report no goals ( $M=1.63$ ) than some goals or very specific goals compared to both mid SES ( $M=2.26$ ) and high SES individuals ( $M=2.78$ ). A three way interaction was also significant across SES, mentor status, and gender,  $F(2, 135) = 3.71, p = .027, \eta_p^2 = .052$ . Males from low SES households with a mentor reported higher level goals ( $M=2.33$ ) than males from low SES households without a mentor ( $M=1.00$ ) compared to low

SES females with a mentor who reported lower level goals ( $M=1.20$ ) than those without a mentor ( $M=2.00$ ).

No significant differences were found across gender for school importance. However, there was a significant interaction between mentor status and SES,  $F(1, 136) = 4.74, p = .010, \eta_p^2 = .065$ , with those from low SES groups with a mentor reporting lower school importance ( $M=14.07$ ) than those with a mentor ( $M=12.25$ ). School efficacy was significantly different across gender,  $F(1, 136) = 11.07, p = .001, \eta_p^2 = .031$ , with females reporting greater school efficacy ( $M=10.42$ ) than males ( $M=7.39$ ). The effect of genders also differed across SES,  $F(2, 136) = 5.92, p = .003, \eta_p^2 = .080$ , with males from both low and high SES groups reporting lower school efficacy (low SES,  $M=6.83$ ; high SES,  $M=5.50$ ) than females from the same SES groups (low SES,  $M=12.10$ ; high SES,  $M=9.49$ ), and no differences between middle SES males ( $M=9.83$ ) and females ( $M=9.67$ ).

### *Social support*

There were no group differences found for perceived social support from family across genders, SES groups or mentor status. No differences were present for support from friends across mentor status but an interaction between SES and gender was significant,  $F(2, 136) = 3.21, p = .043, \eta_p^2 = .045$ , with low SES males reported higher levels of perceived support from friends ( $M=17.33$ ) than females ( $M=13.23$ ).

### *Readiness to be an Adult*

Readiness for adulthood was significantly different across mentor status,  $F(1, 146) = 8.28, p = .005, \eta_p^2 = .054$ , with those with a mentor reporting increased readiness ( $M=74.70$ ) than those without a mentor ( $M=69.91$ ). See Table 2 for a graphical representation of readiness for adulthood by mentor status.

Group differences were also found for all three Readiness for Adulthood subscales. Individuals with a mentor were found to be more prepared for the relational aspects of adulthood, ( $M=29.20$ ),  $F(1, 146) = 4.56, p = .034, \eta_p^2 = .030$ , than those without a mentor ( $M=27.74$ ). See Table 3 for a graphical representation of relational readiness for adulthood by mentor status. Significant differences were found for personal readiness for adulthood,  $F(1, 146) = 4.14, p = .044, \eta_p^2 = .028$  with individuals with mentors reporting greater relational readiness for adulthood ( $M=29.52$ ) than those without a mentor ( $M=28.16$ ). See Table 4 for a graphical representation of personal readiness for adulthood by mentor status. Finally, mentorship was also found to be significantly different across financial readiness for adulthood,  $F(1, 146) = 4.84, p = .029, \eta_p^2 = .032$  with those with a mentor more prepared for the financial aspects of adulthood ( $M=15.95$ ) than those without ( $M=13.98$ ). See Table 5 for a graphical representation of financial readiness for adulthood by mentor status.

### **4.3.3 ANCOVA Analyses.**

In order to determine if differences existed between those with a mentor and those without, controlling for support from family and friends, a series of ANCOVA's were conducted.

Having a mentor was found to be significantly related to life satisfaction,  $F(1, 144) = 5.71, p = .018, \eta_p^2 = .038$ , with those with a mentor reporting greater life satisfaction ( $M=25.67$ ) than those without ( $M=22.17$ ), after accounting for support from friends and family. See Table 6 for a representation of life satisfaction by mentor status.

Mentor status was also significantly related to school importance, after taking into account support from family and friends,  $F(1, 144) = 10.36, p = .002, \eta_p^2 = .067$ , with those with a mentor reporting higher levels of school importance ( $M=13.66$ ) than those without a mentor ( $M=12.61$ ). See Table 7 for a representation of school importance by mentor status.

Mentorship was also found to significantly influence academic/career goals, after accounting for support from family and friends,  $F(1, 143) = 4.72, p = .031, \eta_p^2 = .032$ . Those with a mentor reported higher-level goals ( $M=2.44$ ) than those without ( $M=2.09$ ). See Table 8 for a representation of academic/career goals by mentor status.

Those with a mentor were also more prepared for adulthood compared to those without a mentor, taking into account support from family and friends,  $F(1, 144) = 5.77, p = .018, \eta_p^2 = .039$ . Individuals without a mentor reported significantly lower readiness for adulthood ( $M=69.91$ ) than those with a mentor ( $M=74.68$ ).

When controlling for support from friends and family, there were no significant differences were found between those with a mentor and those without, in the areas of healthy eating, depression, anxiety, stress, self-esteem, school efficacy or GPA.

#### **4.4 Statistical Analyses of Research Question Three**

A sequential multiple regression was conducted to explore if mentor status, beyond support from family and friends, predicted readiness for adulthood. The correlation matrix was examined, and it was determined that no variables are too highly correlated through tolerance values, all of which were above .8 (Tabachnick & Fidell, 2007). See Table 9 for the correlation matrix. The overall regression model significantly predicted readiness for adulthood,  $F(3, 144) = 4.83, p = .003, R^2 = .091$ . The adjusted  $R^2$  value indicates that 7.2% of the variance in readiness for adulthood is significantly accounted for by mentor status ( $\beta = .195, p = .018$ ) and support from family ( $\beta = .170, p = .041$ ). Support from friends did not significantly contribute ( $\beta = .070, p = .395$ ) to predicting readiness to adulthood.

Without support from friends, the model significantly predicted readiness for adulthood,  $r = .295, F(2, 144) = 6.89, p = .001, R^2 = .087$ . The adjusted  $R^2$  value indicates that 7.4% of the

variance in readiness for adulthood is significantly accounted for by mentor status ( $\beta = .202, p = .013$ ) and support from family ( $\beta = .185, p = .023$ ).

#### **4.4 Statistical Analyses of Research Question Four**

In order to determine if differences across types of mentoring relationships were associated with different outcomes, a series of one-way ANOVAs with Sidak corrections as well as correlations were conducted for outcomes where mentorship was found to have a significant effect. The mentoring variables for which ANOVAs were conducted across significant outcomes included whether mentor-mentee genders and ethnicities were the same or difference, the length of the mentoring relationship, type of relationship, and amount of time spent together. Pearson's correlations were conducted between significant outcomes and the strength of the mentoring relationship.

For those with a mentor, no differences were found across the personal or financial subscales or total readiness for adulthood, depending on the match of mentor-mentee genders and ethnicities, length of relationship, type of relationship, amount of time spent together or strength of relationship. For the relational subscale, no differences were found across the match of mentor-mentee gender or ethnicity, type of relationship, length of relationship or amount of time spent together. However, a correlation revealed a significant positive relationship between strength of the mentoring relationship and relational readiness for adulthood,  $r = .216, n = 95, p = .035$ .

Across life satisfaction, those with a mentor of the same ethnicity reported significantly higher life satisfaction ( $M=26.38$ ) than those with a mentor of a different ethnicity ( $M=21.93$ ),  $F(1, 93) = 5.88, p = .017$ . No other effects were found across the match of mentor-mentee gender, type of relationship, length or relationship, amount of time spent together or strength of the



mentoring relationship.

Those with a mentor of the same ethnicity reported higher-level goals ( $M=2.54$ ) than those with a mentor of a different ethnicity ( $M=1.87$ ),  $F(1, 92) = 10.80$ ,  $p = .001$ . No other effects were found across the match of mentor-mentee gender, type of relationship, length or relationship, amount of time spent together or strength of relationship.

No group differences were found for school importance across the match of mentor-mentee gender or ethnicity, type of relationship, length or relationship, amount of time spent together or strength of the mentoring relationship.

## Chapter Five: Discussion

### 5.1 Summary of Results

Related to the first research question exploring the types of mentoring experiences university students have, natural mentors were reported at the same rate across gender, ethnicity and SES. However, females reported stronger relationships with their mentor relationships than males. When dividing mentors into kin and non-kin mentors, kin mentors were more likely to have been a mentor for more than 10 years, be the same ethnicity and a trend toward being the same gender. No other differences were found across characteristics of the mentor-mentee relationships, including strength of mentoring relationship and time spent together.

Several significant results were found related to the second research question exploring group differences across mentor status as well as across gender and SES. In particular, those without a mentor were more likely to report no academic or career goals, compared to those with a mentor who were more likely to report either some simple goals or clear goals. Individuals with mentors were also more prepared for adulthood than those without a mentor across total readiness for adulthood and all three subscales: relational, personal, and financial. Those with a mentor also reported greater life satisfaction, higher levels of goals, and increased school importance compared to those without a mentor, taking into account support from family and friends. However, no differences were found for those with a mentor or those without on physical activity level, sports team involvement, healthy eating habits, substance use, delinquency, depression, anxiety, stress, self-esteem, school efficacy or GPA.

Significant results were also found related to the third research question, which was interested in whether mentorship would predict readiness for adulthood, after taking into account support from family and friends. The model significantly predicted readiness for adulthood with

7.2% of the variance being accounted for by mentor status and support from family. Support from friends did not significantly contribute to the model.

Finally, in response to the fourth research question, mentoring differences were found across some areas where mentor status was significant. Strength of the mentoring relationship was found to be important for the relational subscale of readiness for adulthood, with stronger relationships associated with higher levels of preparedness for the relational aspects of adulthood than those with a less strong mentoring relationship. Those with a mentor of the same ethnicity reported greater life satisfaction and higher level academic/career goals than those with a mentor of a different ethnicity. No effects of kin or non-kin mentors were found across academic/career goals, life satisfaction, school importance or readiness for adulthood (subscales and total).

## **5.2 Discussion of Research Question One**

The first research question was interested in exploring the types of experiences that university students have with mentorship. Sixty-four percent of individuals reported the presence of a natural mentor, which is similar to those in previous studies (Hurd & Zimmerman, 2010b; Munson & McMillen, 2008). There were no significant differences in the presence of natural mentors reported across SES, ethnicity or gender.

When dividing mentors into only kin and non-kin mentors, some expected differences were found. Specifically, kin mentors were more likely to have been a mentor for more than 10 years, be the same ethnicity, and there was a trend toward being the same gender. These factors are likely due to the mentors being family members.

Additionally, many participants described how their mentor has influenced them. Individuals noted that the guidance and support of their mentors had significantly impacted their lives. Others commented on the specific influence of additional support during their transition

after high school and through other difficult situations. Overall, regardless of their relationship to their mentor, individuals noted the importance of their relationship and the support their mentor provided in their lives.

### **5.3 Discussion of Research Question Two**

The second research question asked if having a mentor was associated with increased positive and decreased negative outcomes for Canadian undergraduate students transitioning to adulthood.

Group differences were found across some outcomes but not others. Specifically, after taking into account support from family and friends, individuals with a mentor had increased school importance, higher-level academic and career goals, increased life satisfaction, and increased readiness for adulthood. Individuals with a mentor were more prepared for adulthood based on the overall scale as well as the relational, personal, and financial subscales. However, no differences were found for outcomes related to physical activity level, healthy eating habits, substance use, delinquent behaviour, anxiety, depression, stress, self-esteem, or school efficacy or GPA.

Several findings in the current study are replications of past research. The benefit of mentorship on life satisfaction was previously found by Dubois and Silverthorn (2005), although the study was examining only non-parental mentors. This replication suggests generalizability from American non-kin mentors to both a Canadian sample and to kin mentors as well. While academic and career goals have not been explored in previous studies, Erikson et al. (2009) found mentoring had a positive impact on a range of academic measures, including educational attainment and academic performance. Similarly, Greenson and Bowen (2007) also found that youth with mentors found were able to envision more positive futures for themselves. Finally,

because the Readiness for Adulthood scale was created for the current research, it has not yet been explored, but the results support the positive outcomes associated with mentorship.

No effects of mentorship were found related to delinquent behaviour in the current study. This may be because previous research that found a positive impact of mentors on delinquency behaviour was part of a formal mentor program for higher risk youth (Cheng et al., 2009; Grossman & Tierney, 1998). These findings may also be indicative of underlying differences between the current Canadian sample and previous research on American youth. Therefore, while generalizability between types of natural mentors has been supported in the current research, different types of support may be provided by formal compared to natural mentors.

Non-significant group differences in the areas of mental health and substance use are congruent with the mixed results present in the mentoring literature. Specifically, in Hurd and Zimmerman's (2010a) longitudinal study, those without a mentor had increased anxiety and depression over a five year transition to adulthood but those with a mentor had no increases in anxiety or depression. No differences in the current study may be due to the single time sampling; if these participants had been followed over time, additional protective factors of mentorship may have emerged. Additionally, no effects of anxiety or depression were found by Zimmerman et al. (2002), no differences in depression or substance use were found in Dubois and Silverthorn (2005) and no effects on substance use were found in Hurd and Zimmerman (2010b).

In the area of mental health, some findings were not replicated. Hurd and Zimmerman (2010a) found positive effects of having a mentor on stress not replicated in the current study. However, Hurd and Zimmerman's (2010a) sample was African-American adolescent mothers. Increased self-esteem for those with a mentor found in previous research on a nationally

representative American sample was not replicated in the current study (Dubois & Silverthorn, 2005). This provides important information on the differences between the current study on Canadian undergraduates and previous mentoring research.

Non-significant effects were also found in other areas including physical health (physical activity, healthy eating), and other academic outcomes (school efficacy, GPA). While Dubois and Silverthorn (2005) found significance in physical activity, this may be due to the relatively small effect size ( $\eta_p^2 = .017$ ). Different academic outcomes may be due to the sampling procedure in the current study. Specifically, because of how participants were recruited, they were all individuals who attended their university classes. University students who attend class have been shown to have an average GPA of one letter grade higher than those who do not attend class (Romer, 1993). Therefore, participants may have been higher achieving academically, obscuring results related to academic outcomes.

Although school importance was impacted by mentor status, there was inverse relationship for low SES individuals. However, it was not clear why low SES individuals with a mentor reported lower school importance than those without a mentor, although previous research found mentors were unable to fully compensate for individuals at increased risk (Dubois & Silverthorn, 2005). This finding may also be due to another factor not explored in the current study, such as the influence a mentor who did not attend post-secondary. However, the reliability of the school importance items was low, which may have also impacted the results. Further exploration in this area is needed to clarify the relationship between mentorship and school importance for low SES individuals.

Zand et al., (2009) and Munson and McMillen (2008) both found that females reported higher quality mentoring relationships, which was replicated in the current study, despite the fact

that Zand et al.'s (2009) research involved formal mentors and Munson and McMillen's (2008) study was with natural non-kin mentors. This gender difference has been attributed to and the idea that females may be more invested in close, confiding relationships than males, (Pollack, 1998) which may also be true for the current study. This finding also supports the generalizability of the importance of mentoring relationship strength across kin and non-kin mentors as well as formal mentors. However, because this variable was skewed in the current study, this result should be interpreted with caution.

Individuals with a mentor were more prepared for adulthood on the personal, relational, and financial subscales of Readiness for Adulthood. Across these subscales, mentoring variables differed. In particular, the strength of the mentoring relationship was influential in the relational subscale of Readiness for Adulthood. Specifically, those with less strong relationships reported lower relational readiness for adulthood compared to those with stronger relationships. This is congruent with past research that found significant positive effects of mentor support, which may be underlying the impact of the mentorship (Thomas & Zand, 2009). While no differences were found across other outcomes related to relationship strength, this may have been because most people rated very strong relationships with their mentor. Previous research that found differential effects associated with the strength of the mentoring relationship involved higher risk youth (Munson & McMillen, 2008; Zand et al., 2009), which may not be generalizable to Canadian undergraduate students. The slightly negative skew of relationship strength may have also influenced results in this area.

The current research found no increased benefit of mentorship for low SES individuals found in previous studies (Erikson et al., 2009). However, the lack of findings may be due to the currently sample containing only relatively small amount of individuals from low SES

backgrounds ( $n=18$ ) and individuals were also asked to self-report their SES, which can be very subjective (Erikson et al., 2009). Overall, the current research provides information on the generalizability of past research and extends past findings because of the range of measures on a single sample.

#### **5.4 Discussion of Research Question Three**

Significant results were found related to the third research question, demonstrating that beyond the support for family and friends, those with a mentor were more prepared for adulthood. Although the importance of friends during adolescence and emerging adulthood has been demonstrated (Arnett, 2010), the current research found no influence of friend's support related to readiness for adulthood. Furthermore, family support was associated with readiness for adulthood, which is a replication of previous research noting the importance of family support (Masten, 2009). However, family support did not contribute as strongly to readiness for adulthood as mentorship.

The current findings continue to substantiate the importance of mentors as a form of social support for youth and emerging adults found in previous studies (e.g., Hurd & Zimmerman, 2010b). Despite the inclusion of parental and kin mentors, having a mentor a kin or non-kin mentor provided a different type of support. The type of support provided through mentorship uniquely contributed to readiness for adulthood and may be different from the support of friends and family. This finding replicates previous studies noting the importance of the mentorship role in providing guidance and support to contribute to positive outcomes in youth and emerging adults (DuBois & Silverthorn, 2005; Hurd & Zimmerman, 2010b; Zimmerman et al., 2002). However, the current study extends these findings into readiness for adulthood.



While mentorship in the current study was influential in preparing students for adulthood, there was no significant impact of friend support. This may be due to the particular outcome of interest. Because participants were in the younger range of emerging adults ( $M=19.8$ ), readiness for adulthood may not be of particular importance yet. If the mean age of participants was in the mid to older range of emerging adulthood, it may be that the role of friend support related to adulthood would be different. Additionally, the changing nature of friendships upon entering university may also play a role in the lack of influence in this area. Many individuals move away from home or lose touch with friends after high school. Lack of contact with childhood friends combined with new emerging friendships in university may be related to lack of influence of friend support. Additional research is needed to support such hypotheses and explore additional influences in preparing students for adulthood.

These findings also demonstrate the viability of the Readiness for Adulthood scale for exploring the preparedness for adult responsibilities. Overall, the current research replicates the importance of a mentor's support, and extends past findings to demonstrate the influence provided by mentors is beneficial in preparing students for adulthood above the support from family or friends.

#### **5.5 Discussion of Research Question Four**

Some differential effects of the various types of natural occurring mentoring relationships were found in relation to the fourth research question. Specifically, individuals with mentors of the same ethnicity reported higher level academic/career goals and life satisfaction. This may be due to the increased benefit of having a mentor of the same ethnicity for individuals in minority groups. However, future research is needed to investigate this relationship.

Additionally, length of relationship, amount of time spent together and strength of

relationship were not different across kin and non-kin mentors, which have been found to be important predictors in past studies (Dubois & Silverthorn, 2005; Munson & McMillen, 2008; Thomson & Zand, 2009; Zand et al., 2009). No differences of kin or non-kin mentors were found across academic/career goals, school importance, life satisfaction or any areas of readiness for adulthood. The lack of significant differences for between kin and non-kin mentors supports the generalizability of findings across types of natural mentors.

## **5.6 Implications**

First, the current results extend previous findings and inform the generalizability of past mentoring research to the Canadian sample and to undergraduate students. However, further research needs to explore whether the findings that were non-significant were due to factors other than the sample, including measures and sampling procedures. Additionally, because no differences were found between kin and non-kin mentors, justification is provided for future research to combine mentoring types.

Having a relationship with a natural mentor has important implications for preparing students for adulthood. High schools and universities should consider programs and methods for emerging adults to interact positively with kin and non-kin adults in order to encourage natural mentorship. The current research suggests that such relationships can benefit a student's preparedness for adulthood, life satisfaction and academic outcomes including goal setting and school importance.

Finally, the current findings are important for resilience research, exploring why some individuals are able to overcome adversity and not only survive, but flourish. A range of internal and external factors are related to resilience in at-risk youth through decreasing risk factors and increasing protective factors, which reduces negative and increases positive outcomes (Fergus &

Zimmerman, 2005). Some internal factors related to resilience include positive self-perceptions, self-efficacy, a sense of meaning in life, self-regulation skills, intellect and external factors such as positive attachments with family, positive relationships with other nurturing and competent adults, and bonds to effective schools and other prosocial organizations (Masten, 2009). Because the transition after high school has been found to be a time when many emerging adults are at-risk of a range of negative outcomes, success during this time can be seen as a form of resilience and the current research suggests that mentors may increase resilience during this time.

### **5.7 Strengths and Limitations**

There are limitations to the current research, despite the important applications in the areas of emerging adulthood, mentoring, and resilience. The sample is not representative of the Canadian population and only contains data from one university. Additionally, the sample was particularly homogeneous in nature. Specifically, while there were both male and female participants from three SES groups, the majority of participants were middle class females. The lack of heterogeneity was particularly apparent in some areas, including delinquency behaviours and substance use, which may have been related to the lack of findings in these areas. As well, because participants were individuals who came to class, demonstrated an interest in participating and took the initiative to complete the entire questionnaire on their own time, they may be different than those who did not come to class or who did not take an interest. These differences may have influenced the results, particularly in the area of academics.

Mentorship may not have had as strong an influence across outcomes due to the small effect sizes in the current study. For example, while mentorship predicted readiness for adulthood beyond support from family and friends, the overall model only accounted for about 7% of the variability. Additional factors not examined in the current study are also likely

impacting readiness for adulthood and other outcomes in university students and will need to be explored further.

The small effect sizes may also have been related to the measures in the current study, which may be another reason that mentorship was not found to be beneficial across all outcomes. Like most mentoring studies, the results are dependent on self-reports by the youth, including SES, which may have been affected by differing views of class statuses. Due to the length of the questionnaire, validity of the self-ratings may have been impacted due to fatigue or boredom. However, because individuals could stop at any time and those that did were excluded from analyses, this likely did not affect the results. Some measures did have unacceptably low internal reliability, including diet, substance use, and school importance, which may have influenced the results. The sexual health questions were not formulated properly, which did not enable this area to be explored. Finally, because the study was not longitudinal, it was not possible to measure changes over time, which have previously found to be important (Hurd & Zimmerman, 2010a).

The new scale, Readiness for Adulthood, had acceptable internal reliability but could be improved. Specifically, some items could benefit from clearer wording, including item five (I have a relationship with my parents as equal adults), and item eight (I have established beliefs and values independent of my parents or other influences) as well as the financial subscale. Future research should continue to explore various wording on these items to strength the overall scale.

Strengths of the current study include the Canadian perspective, which had yet to be examined on a large scale. This provides valuable information on the generalizability of past mentoring literature for the Canadian population. In contrast to much of the previous mentoring research focused on more typical ‘at-risk’ samples such as youth exiting foster care, and minority

groups, the current sample explored a different group, which may still be considered ‘at-risk’ due to the difficulties many individuals have during the transition after high school (Blanco et al., 2008; Bray & Born, 2004; Cullen et al., 1999; De Wit et al., 2011; Downs & Ashton, 2011; Haas & Fosee, 2008; Usher et al., 2005). As well, a range of natural mentor types were analyzed in the current study including both kin and non-kin mentors, which furthers the generalizability to include a range of types of natural mentors.

Another strength of this study is in the wide range of outcomes explored, including some not previously examined, such as academic/career goals and readiness for adulthood.

Additionally, many outcomes have not been explored in a single sample. Although the internal reliability of the Readiness for Adulthood scale could be improved, significant effects were found for all subscales as well as the total scale. These results support further exploration of this scale as well as the inclusion of goal setting in the emerging adulthood literature.

## **5.8 Future Studies**

This study is an important first step in exploring mentoring for the general Canadian population. Future research should continue to examine mentorship on the Canadian population to determine what other factors are influential for Canadian students. The effects of mentoring should also be explored outside of a university population on a more heterogeneous sample. It will be important to determine if mentorship is beneficial for other groups, such as individuals experiencing other transitions after high school, such as into the workforce or apprenticeship programs. Additional research should also explore the impact of mentors during the transition after high school for those with transitional difficulties or additional needs, such as individuals with learning disabilities, attention deficit hyperactivity disorder and other special populations.

A long-term study following individuals across the transition into university through his

or her degree and into the workforce or graduate school would provide indispensable information on the long-term effects of having a mentor throughout the transition to adulthood. Essential information could be related to the success and failures associated with pursuing one's goals, comparing those who completed their degrees and those who did not as well as other academic measures (scholarships, final GPA, etc.), to inform additional effects of mentorship related to graduate school admission or job acquisition.

Future research should continue to explore the mechanisms behind the positive impact of mentorship and should also include partner support, which was not included in the current study. This will add information on the types of social support available to universities students and the impacts of those relationships.

Finally, to provide further support for schools and universities encouraging mentorship, addition research should explore outcomes for programs that promote relationships between an adult or older peer mentor for post-secondary, trade students, and those entering the workforce across Canada. Although no differences were found in the current study comparing kin and non-kin mentors, it will be important to explore generalizability across outcomes for formal and natural mentors. As these relationships are inherently different due to important factors including choice, training, and relationship length, these distinctions may be important to explore for universities or schools wanting to provide mentors across transitions or for students of increased risk.

## **5.9 Conclusions**

Individuals with mentors were able to overcome difficulties associated with the transition after high school and reported increased positive outcomes related to life satisfaction, self-esteem, readiness for adulthood, and academic/career goals. Furthermore, the presence of a

mentor predicted readiness for adulthood, beyond support from family and friends. The current research demonstrates the value of mentoring for Canadian university students transitioning to adulthood, the applications of the Readiness for Adulthood scale, and the importance of mentoring support beyond the support from family and friends. Although future research is needed to continue examining formal and natural mentorship for emerging adults in Canada, the current research supports mentorship as a form of positive social support to promote an increased academic focus, mental well-being and prepare undergraduate students for the responsibilities of adulthood.

## Appendix

### Readiness for Adulthood

The following questions ask you to think about how you currently view yourself on a 7-point scale from 'very untrue of me' to 'very true of me'. Please answer all questions honestly and do not skip any.

1. I am dependable
2. Other can count on me to do what I say I will do
3. I am polite with people I don't like
4. I have meaningful friendships/relationships with my peers
5. I have a relationship with my parents as equal adults
6. I have good control over my emotions
7. I accept responsibility for my actions
8. I have established beliefs and values independent of my parents or other influences
9. I am comfortable with responsibilities, such as doing the laundry and preparing meals
10. I am capable of making independent decisions
11. I pay all my own bills
12. I have reached financial independence from my parents or guardians (Financial independents would include loans or other forms of financial assistance under your name)
13. I no longer live in my parent/guardian's house
14. I use my credit card responsibly



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## Tables

*Table 1: Descriptive statistics*

Variable	<i>M</i>	<i>SD</i>	Min	Max	Skew	Kurtosis
Health eating habits	23.01	4.00	14.00	30.00	-.31	-.48
Depression	6.34	5.43	.00	20.00	.92	-.30
Anxiety	5.17	5.29	.00	23.00	1.53	1.72
Stress	17.42	6.40	4.00	31.00	0.18	-.83
Self-esteem	30.39	6.31	10.00	40.00	-.55	-.20
Life satisfaction	24.42	6.83	5.00	35.00	-.72	-.22
GPA	79.32	9.63	50.00	95.00	-.89	.65
School efficacy	9.76	3.19	5.00	20.43	.46	.28
School importance	13.28	2.02	5.67	18.00	-.31	.05
Perceived social support (family)	13.44	6.19	.00	20.00	-.71	-.77
Perceived social support (friends)	14.94	4.94	.00	20.00	-1.16	.73
Mentor status	1.64	.48	.00	1.00	-.60	-1.67
Strength of mentoring relationship	38.38	2.75	27.00	40.00	-2.28	5.48
Readiness to be an adult (Total)	72.97	9.91	46.00	95.00	-.33	.16
Readiness to be an adult (Relational)	28.68	4.05	14.00	35.00	-1.10	1.47
Readiness to be an adult (Personal)	29.03	3.94	15.00	35.00	-.83	.73
Readiness to be an adult (Financial)	15.25	5.30	5.00	28.00	.33	-.47

*Note:* *M*=Mean. *SD*=Standard Deviation.

Table 2: Readiness for adulthood by mentor status

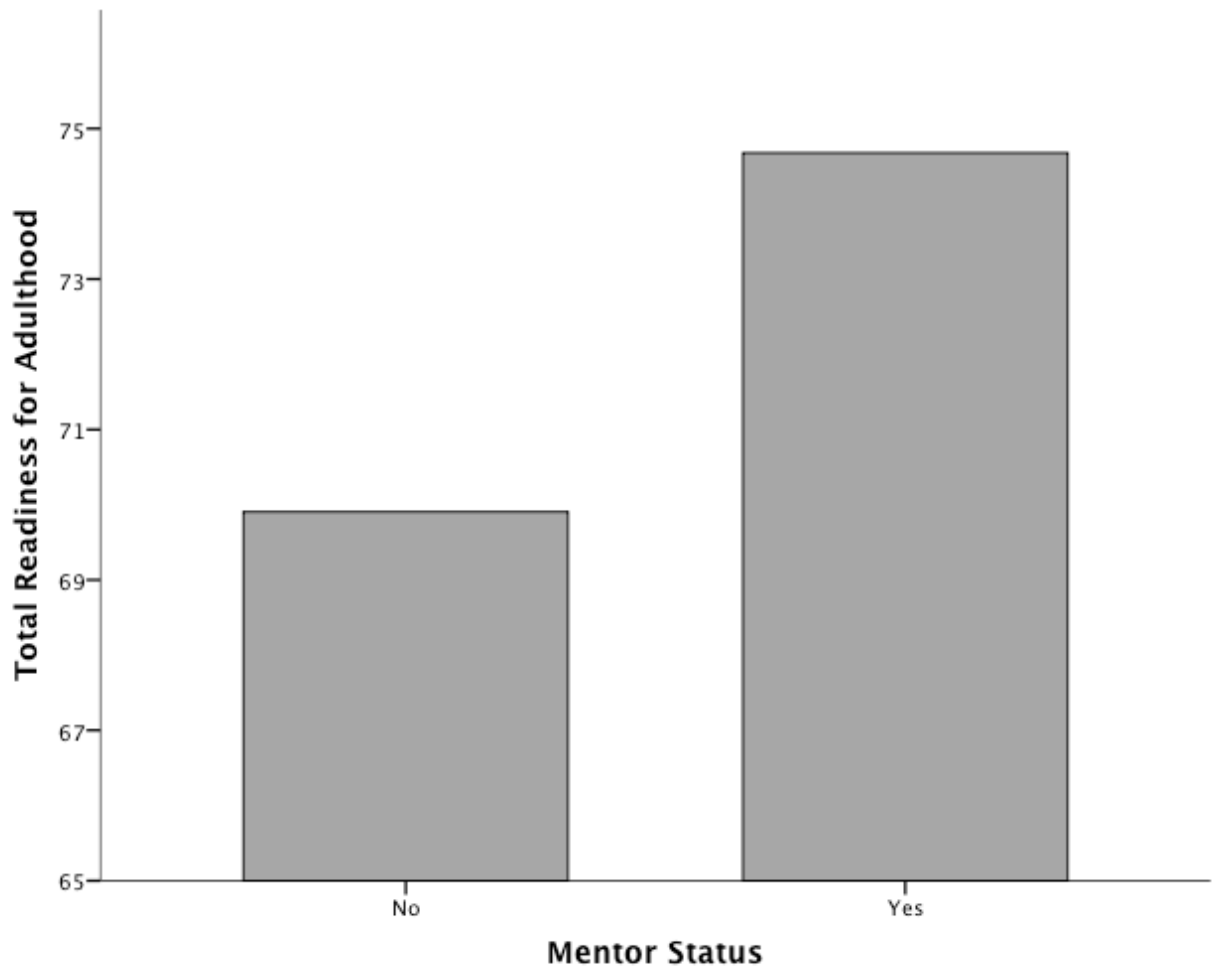


Table 3: Relational readiness for adulthood by mentor status

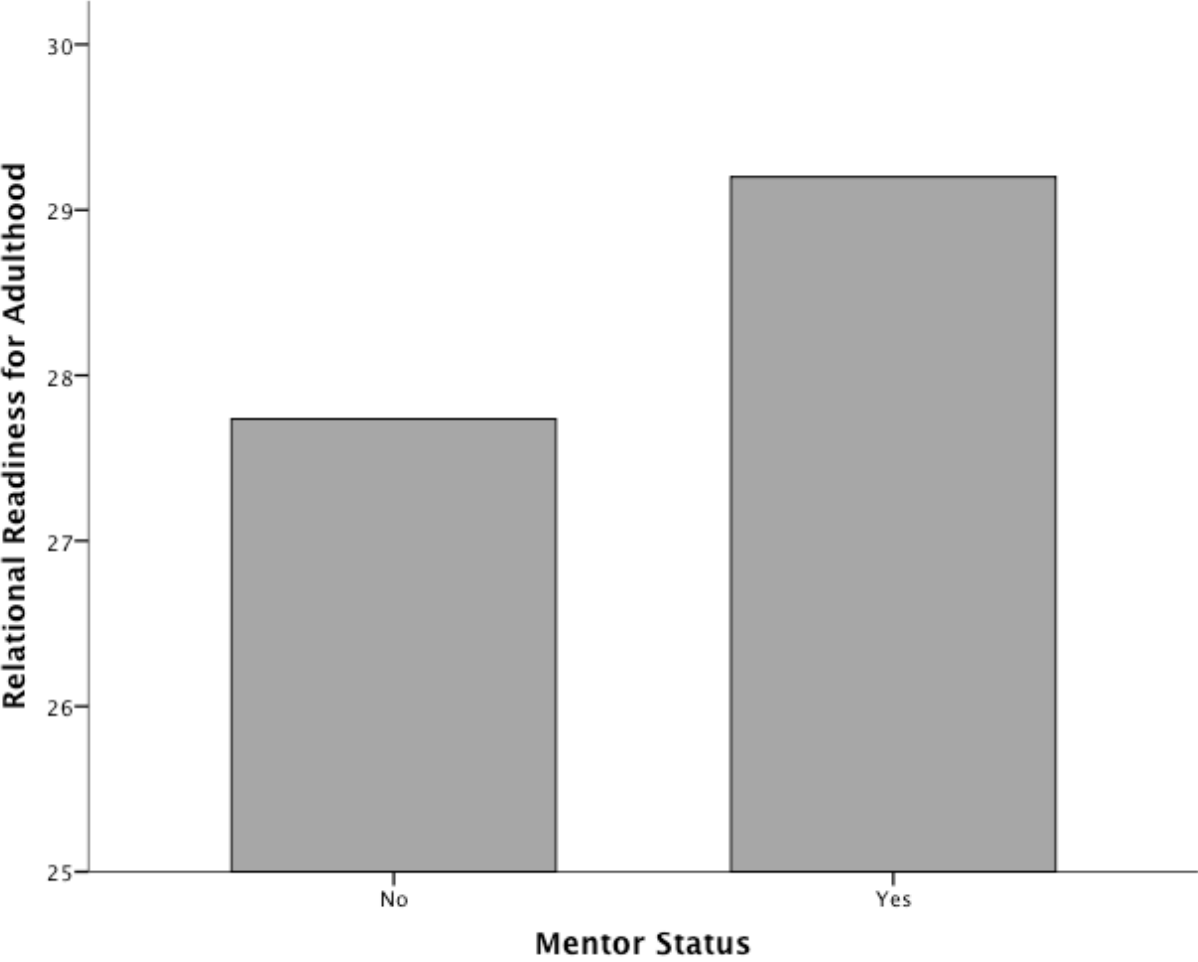


Table 4: Personal readiness for adulthood by mentor status

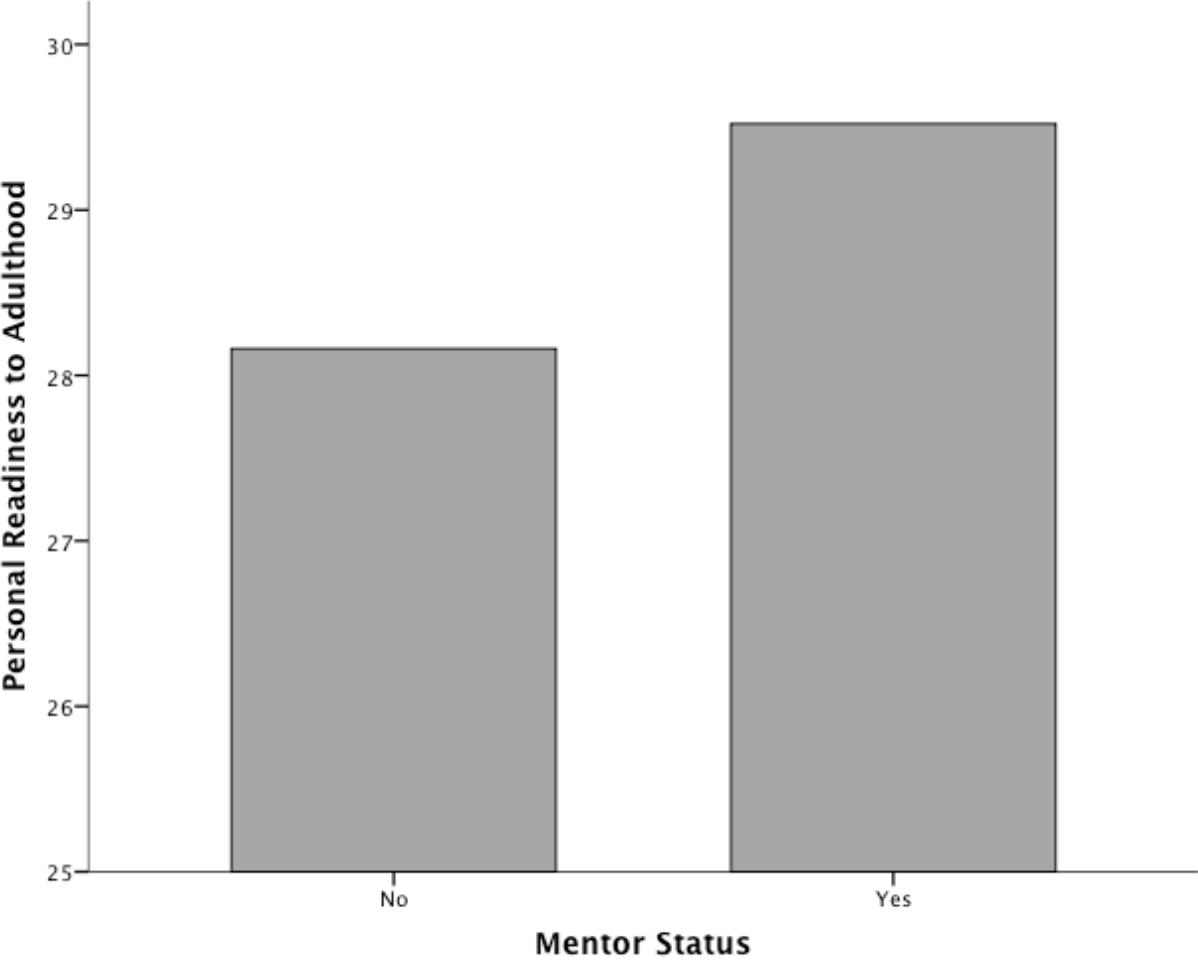


Table 5: Financial readiness of adulthood by mentor status

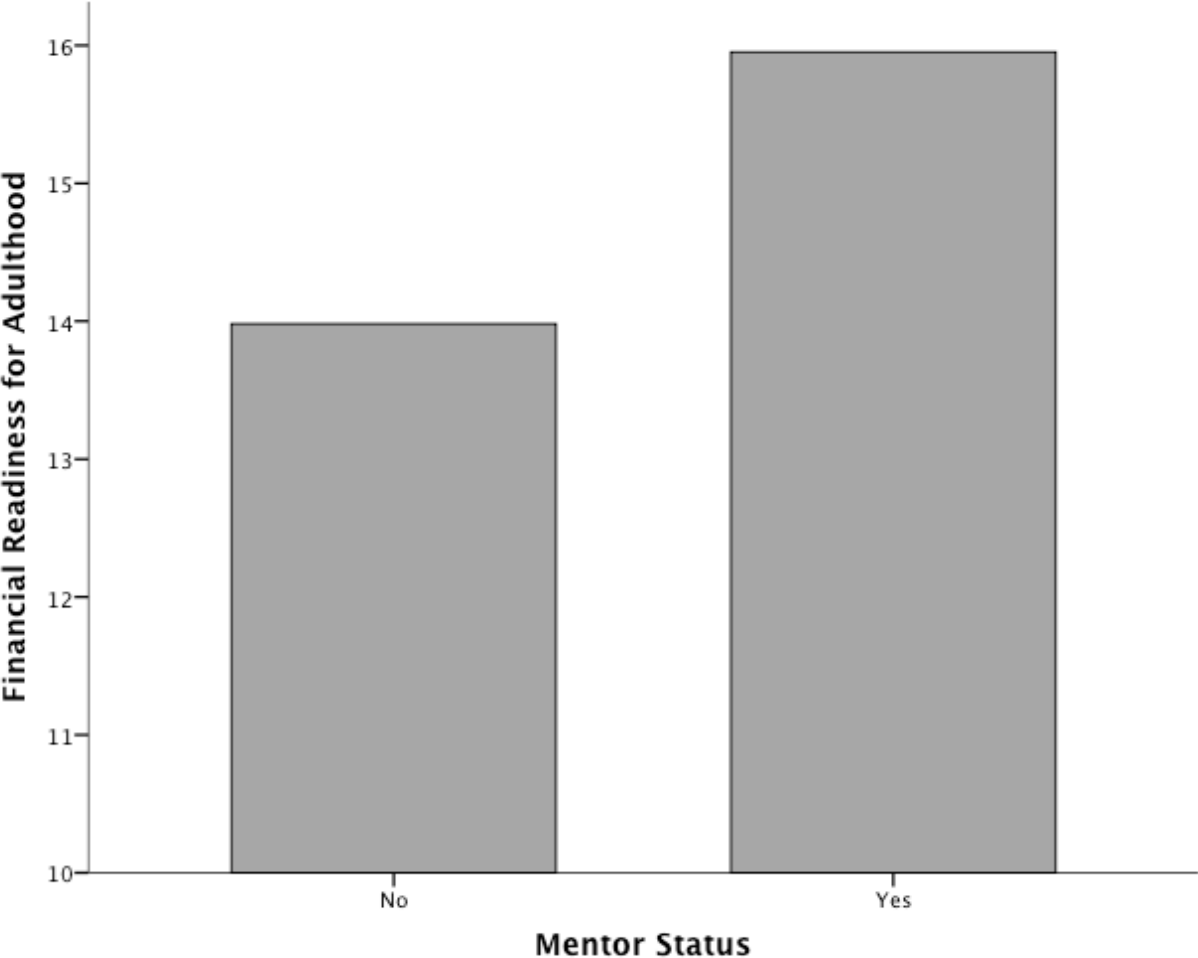


Table 6: Life satisfaction across mentor status

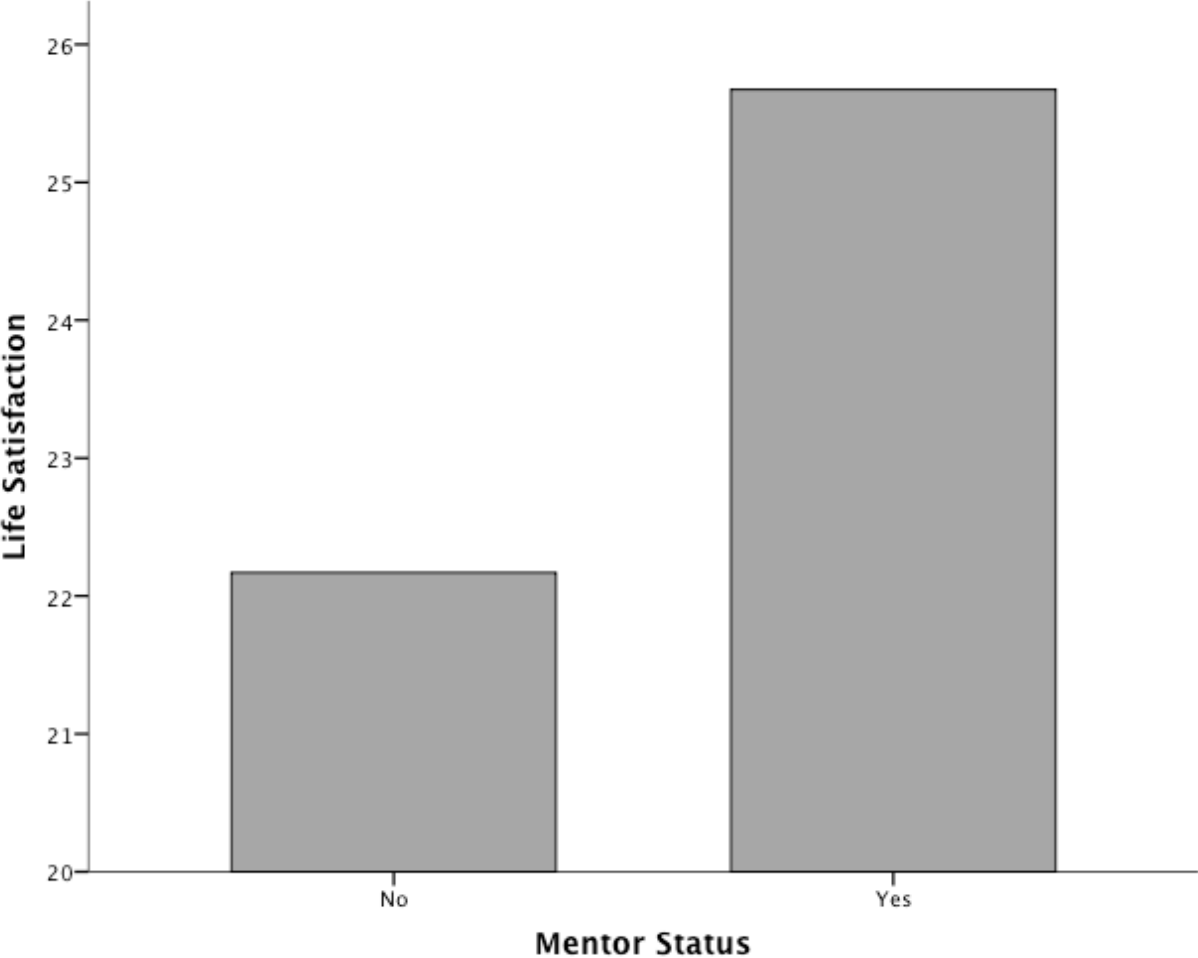


Table 7: School importance by mentor status

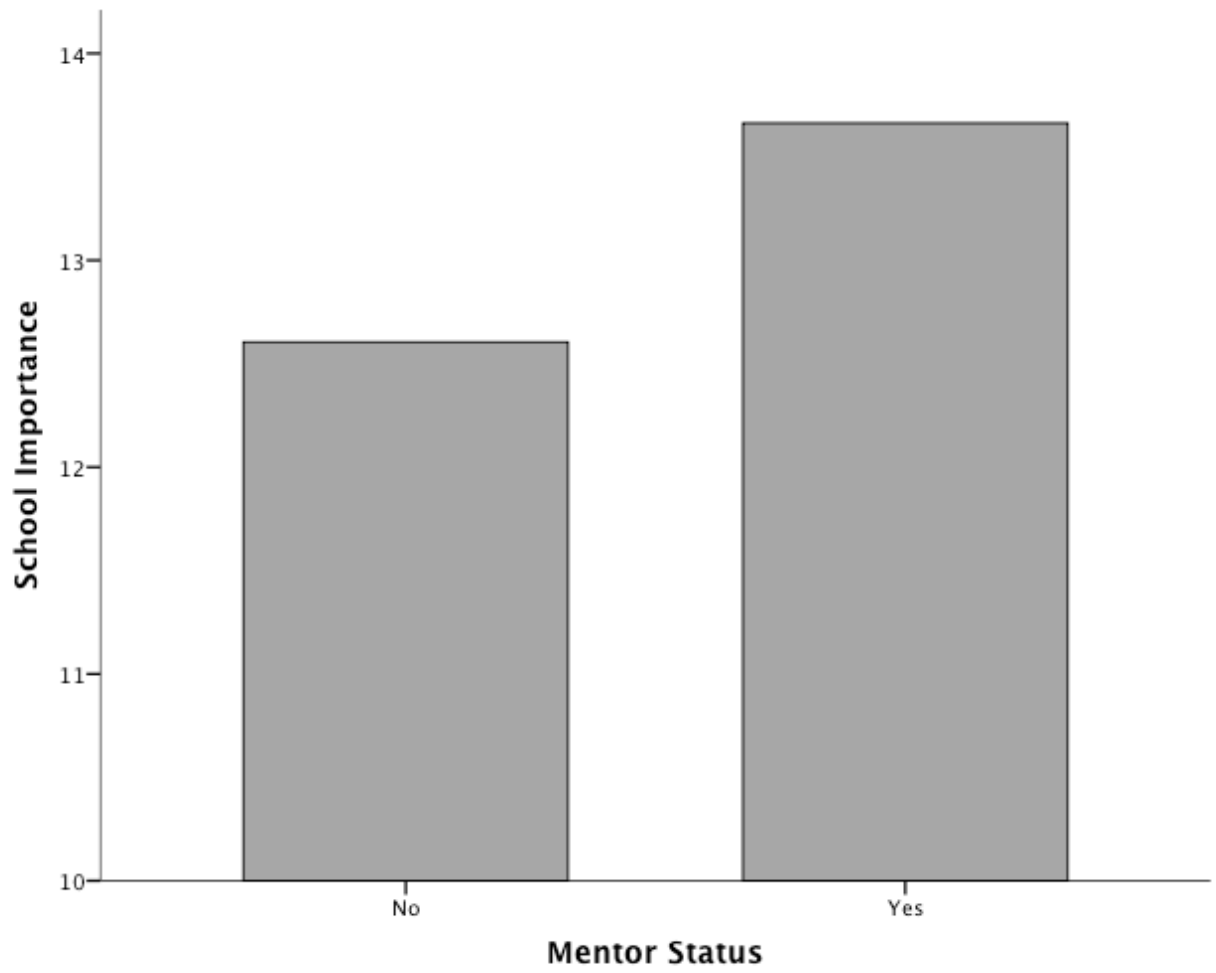
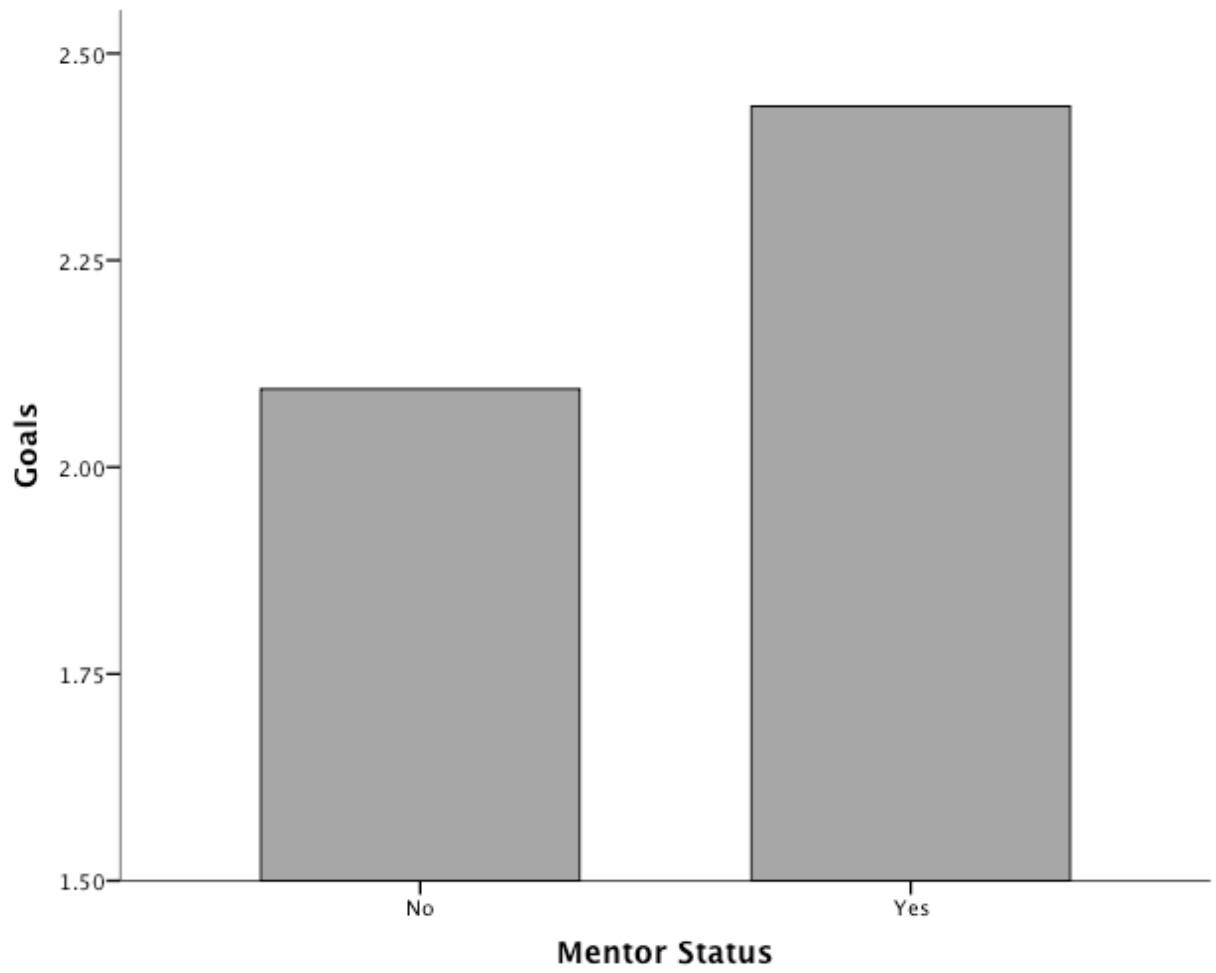


Table 8: Academic/career goals by mentor status





*Table 9: Correlation matrix*

	Readiness for Adulthood	Perceived Social Support (Family)	Perceived Social Support (Friends)	Mentor Status	Tolerance Values
Readiness for Adulthood	1.00	.217	.136	.232	-
Perceived Social Support (Family)	.217	1.00	.227	.159	.932
Perceived Social Support (Friends)	.136	.227	1.00	.143	.937
Mentor Status	.232	.159	.143	1.00	.963