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The Relationship Between Hope, Core Self-Evaluations, Emotional Well-Being, Sexual Risk Taking, Substance Use, and Academic Performance in Freshman University Students

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The relationship between hope, core self-evaluations, emotional well-being, sexual risk taking, substance use, and academic performance in freshman university students
A Dissertation Presented
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Abstract

Objective: To examine the relationship between hope, core self-evaluations, physical function, emotional well-being, health risk behaviors, and academic performance in freshman enrolled in their first year of college.

Participants: Freshman ($N = 495$) attending a large public university in the Northeast completed an online survey between February 1 to February 13, 2017.

Methods: Cross sectional descriptive survey. Linear regression, path analysis, and structural equation modeling procedures were performed.

Results: Core self-evaluations mediated the relationship between hope and emotional well-being and academic performance. Contrary to the hypotheses, higher hope predicted more sexual risk taking behaviors and alcohol use.

Conclusions: Core self-evaluations is an important component of hope theory. Hope Theory is useful for predicting emotional well-being, and academic performance, but not as useful for predicting drug use, alcohol use, and sexual risk taking. Hope and core self-evaluations interventions are needed to improve academic performance and emotional well-being in university freshman.

Keywords: hope, emotional well-being, college students, substance use, sexual risk taking behavior, core self-evaluations

Proposal Introduction

Approximately one third of young adults (ages 18-24) attend college in the United States (Snyder, Dillow, & Hoffman, 2008), which is representative of a critical mass of the young adult population. Many young adults experience psychological distress during their first year of college due to new pressures of independence in Academia (Davidson, Feldman, & Margalit, 2012). The distress from this transition can negatively affect physical health and mental well-being (Lovell, Nash, Sharman, & Lane, 2015). One in 5 young adults ages 18 to 25 have a mental illness (18.7%) and of that number 3.9% have a serious mental illness (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2014). Suicide is the 2nd leading cause of death among ages 15-24 (Centers for Disease Control and Prevention, National Center for Injury Prevention and Control., 2014).

Hope is a protective factor (C. R. Snyder, 2002) for young adults in the demanding academic environment (Davidson et al., 2012). According to Snyder's Hope Theory, hope is a combination of (a) motivation for pursuing goals (agency thought) and (b) an ability to identify workable routes to goal attainment (pathway thought) (C. R. Snyder, 2000a). C. R. Snyder (2002) operationalized hope as "the perceived capability to derive pathways to desired goals and motivate oneself via agency thinking to use those pathways" (p. 249). Agency thinking is the motivational component of hope theory where one channels the requisite energy to achieve or work towards a desired goal (C. R. Snyder, 2000a). The other component of hope theory is pathways thinking which involves thinking about routes and alternatives to achieving a goal (C. R. Snyder, 2000a).

C.R. Snyder (2002) describes individuals as being goal-oriented and motivated by their hope. Hope predicts goal attainment in college students (Feldman, Rand, & Kahle-Wrobleski, 2009). Examples of goals that were tested in college students longitudinally (3 month period of time)

include: paying off debt, getting a 3.0 Grade Point Average (GPA), winning a competition, expanding a social circle and dedicating more time to God (Feldman et al., 2009).

In a study of younger students (pre-college), Marques, Lopez, Fontaine, Coimbra, & Mitchell (2015) reported that those with higher levels of hope had higher mean scores in mental health and self-worth. Additionally, the students with high-hope were less likely to experience anxiety or engage in negative, self-deprecatory thinking in academia (Marques et al., 2015; C.R. Snyder, Shorey, & Cheavens, 2002). Higher hope was also related to life satisfaction ($r = .54$, $p < .01$), self-worth ($r = .52$, $p < .01$) and mental health ($r = .43$, $p < .01$) (Marques et al, 2015). When first year university students indicated high levels of hopefulness (agency & pathways) the likelihood of suicidal ideation was low(Stoyles, Chadwick, & Caputi, 2015). Stoyles et al. (2015) assert that when a person demonstrates hopefulness they are less inclined to consider suicide as an answer to their life challenges (Stoyles et al., 2015).

The purpose of this study is to test several tenets of hope theory by examining the relationship between hope, physical function, emotional well-being, health risk behaviors, and academic performance in freshman college students ages 18-24 enrolled in their first year of college. The specific aims of this study are to:

1. Determine if hope (agency and pathways) predicts physical function, emotional well-being, academic performance, and health risk behaviors (as measured with the adult dispositional hope scale, physical function and emotional well-being subscales, GPA, and health risk behaviors: alcohol use severity, drug use, sexual risk taking).

    Hypothesis 1. Higher levels of hope will predict more positive emotional well-being, physical function, and higher academic performance as well as fewer health risk behaviors.

2. Determine the role of core self-evaluation as a potential mediator in the relationship between hope and health risk behaviors, physical function, emotional well-being, and academic performance (as measured with the adult dispositional hope scale, health risk

behaviors: alcohol use severity, drug use, sexual risk taking, core self-evaluation scale, physical function and emotional well-being subscales, and GPA).

Hypothesis 2. Core self-evaluation will mediate the relationship between hope and risk behaviors, physical function, emotional well-being and academic performance.

3. Explore differences in hope, core self-evaluation, physical function, emotional well-being, and health risk behaviors by gender, age, race, and social desirability (Marlow-Crowne social desirability short form).

Hope

Hope is a strength-based construct that has emerged from the positive psychology field (C. R. Snyder & Lopez, 2002). Hope research has continued to develop over the past 2 decades; focusing on the positive effects of hope for promoting psychological and physical well-being (Chang, 1998; Marques, Lopez, Fontaine, Coimbra, & Mitchell, 2015; C. R. Snyder et al., 1991; C. R. Snyder, 2002). Hope includes a future orientation (Bauckham & Hart, 2000; Morse & Doberneck, 1995; Schrank, Stanghellini, & Slade, 2008; C. R. Snyder, 2002), the envisioning of alternatives and an active setting of goals (Morse & Doberneck, 1995; C. R. Snyder, 2002), the determination to persevere (Herth, 1992; Morse & Doberneck, 1995; C. R. Snyder, Lopez, Shorey, Rand, & Feldman, 2003; C. R. Snyder, 1995) (Herth, 1992; Morse & Doberneck, 1995; Snyder, 1995), a high likelihood of success (Schrank et al., 2008; C. R. Snyder, 1995), and interconnectedness (Herth, 1992; Schrank et al., 2008).

Marques, Lopez et al. (2015) investigated the characteristics of younger students (ages 11-17) who reported extremely high levels of hope (N=682). Students in the extremely high hope group differed from both the average hope and extremely low hope group on all measures (mental health, engagement, life satisfaction, self-worth, and academic achievement) (Marques et al., 2015). Students with high hope levels have better adaptive psychological and school related functioning (Abdel-Khalek, 2013; Marques et al., 2015). Higher hope is correlated with perceived competence and self-esteem and negatively correlated with symptoms of depression (C. R.

Snyder et al., 1997). Higher hope is also related to greater scholastic and social competence (Onwuegbuzie, 1998), and higher hope students have reported greater satisfaction with academics and life (Chang, 1998).

Hope among college students.

Research on hope among college students has demonstrated that those with greater hope have greater problem solving abilities (Chang, 1998), employ less disengagement strategies for coping with stressful situations (Chang, 1998; Ouweneel, Le Blanc, & Schaufeli, 2011), and report a greater purpose in life and well-being (Stoyles et al., 2015). High levels of hope also reduce the likelihood of suicidal ideation (Stoyles et al., 2015). Additionally, hope was found to be an important predictor of both academic and interpersonal life satisfaction among college students (N = 211) (Chang, 1998).

Interventions designed to promote hope, a sense of coherence, and self-efficacy among college students have included a single 90-minute session (Feldman & Dreher, 2012) and another short session (total time not specified) (Davidson et al., 2012). The single 90-minute session (N= 96) consisted of: (a) choosing a personal goal, (b) psycho-education about hope, (c) a hope-based goal mapping exercise, and (d) a hope visualization exercise (Feldman & Dreher, 2012). The other interventional session (N=43) consisted of (a) a short hope lecture, (b) a cognitive mapping exercise, and (c) a mental rehearsal of goal accomplishment (Davidson et al., 2012). Results of both of these studies showed significant improvements in hope immediately after the intervention but this effect was short lived (less than one month after the intervention) (Davidson et al., 2012; Feldman & Dreher, 2012). Thus it is unclear what factors might sustain hope over time.

Individuals with greater hope exhibit more positive emotions such as self-efficacy and self-esteem (C. Snyder, Sympson, Michael, & Cheavens, 2001). An emerging construct known as Core Self Evaluation (CSE) is said to contribute to the development of hope as well as predict life satisfaction (Smedema, Chan, & Phillips, 2014). Positive emotions are an important aspect of life satisfaction, for example in a study of individuals with spinal cord injuries (N= 247), CSE was

found to significantly predict life satisfaction (β = .63, p < .001) (Smedema, Chan, & Phillips,

2014).

Core self-evaluation

Core self-evaluation (CSE) is a higher order construct comprised of four lower order traits:

self-esteem, generalized self-efficacy, emotional stability (opposite of neuroticism), and locus of

control (Docherty & Sandelowski, 1999; Smedema et al., 2014). CSE can be considered a global

measure of positive self-concept (Judge, Erez, Bono, & Thorsen, 2003). Research supports that

core self-evaluation influences the perceived ability to successfully attain desired goals

(Smedema et al., 2014; Smedema, 2014; Smedema & Tansey, 2015). In three studies of

university students, core self-evaluation predicted subjective well-being and university

satisfaction when controlling for status in college, major, class satisfaction, life satisfaction, GPA,

and overall grade fairness (Miller & Nicols, 2011). CSE contributes to the fundamental

perception that individuals have about their worth as people (Smedema et al., 2014).

In a recent study by Smedema et al. (2015) examining a mediation model between CSE and

life satisfaction in college students with disabilities (*N*= 97), CSE was validated as a

unidimensional construct with the 4 traits successful loading on CSE. Smedema et al. (2015)

recommend exploring the development of interventions to increase CSE to reduce stress, improve

affect and build social support, which will improve psychosocial outcomes specifically for

students with disabilities. Although at this time, no intervention exists that directly addresses

CSE, it has been recommended by several authors (Judge & Kammeyer-Mueller, 2011; Smedema

et al., 2015; Smedema, 2014) to implement psychosocial interventions related to the four CSE

traits (e.g. addressing low self-esteem with augmented coping strategies, helping people pursue

realistic and attainable goals and learn life skills such as self-advocacy which would target self-

efficacy).

CSE appears to be an important component of satisfaction and well-being based on the

reviewed studies. Smedema et al. (2014) suggest that understanding CSE may contribute to our

understanding of well-being in persons with disabilities and it would be worthwhile to ascertain if the same is true in a young adult college sample. Additionally, Smedema et al. (2014) suggest that core self-evaluation is a foundational trait contributing to the development of hope. In a study of adults with spinal cord injuries (N=247, M age 41.6, SD 12.4), core self-evaluation was mediated by hope (β = .32, p < .001), perceived health (β =.11, p < .05), autonomy (β = .13, p < .05), and social support (β = .13, p < .05) (Smedema & Tansey, 2015). It is unclear whether hope will mediate similar relationships in college students.

Emotional well-being in college students

Mental health is a growing concern across college campuses with increasing rates of mental illness (T. D. Snyder, Dillow, & Hoffman, 2008; Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2014) and students seeking mental health treatment (American College Health Association, 2012). While depression and anxiety consistently rank as the most common mental disorders in college students (depression 12% and anxiety 14.3%), other serious issues facing students include eating disorders, substance abuse, and self-injury (American College Health Association, 2014). Suicide is the second leading cause of death in young people ages 15-24 (Centers for Disease Control and Prevention, National Center for Injury Prevention and Control., 2014).

In a national college health study, students *(N*=79,266) reported feeling (within the last 12 months): hopeless (20.8%), overwhelmed by all they had to do (18.4%), exhaustion (not from physical activity) (15.8%), very sad (23.7%), so depressed it was difficult to function (15.6%), overwhelming anxiety (19.8%), and having seriously considered suicide (5.2%), attempted suicide (0.9%), and intentionally caused self-injury (3.7%) (American College Health Association, 2014). In another national cross sectional study of ninety four-year colleges (*N*=14,804 students), 61.4% scored poor on mental health (measured using the SF-36), and

perceived stress scores (measured using the Cohen Perceived Stress Scale) and stress was found to be highly correlated with mental health (r= .71, p< .001) (Vankim & Nelson, 2013).

In a cross sectional study of Australian university students (N=751) 38.9% reported mental health symptoms including depression (21.8%), anxiety (28.5%), and stress (26.5%) (Lovell et al., 2015). In addition, this study found associations between depressive symptoms and health behaviors (e.g. nutrition, sleep, and exercise) that differed by gender (Lovell et al., 2015). For men, depressive symptoms were associated with skipping breakfast ($\chi2$= 8.96, p= 0.003), and poor sleeping quality ($\chi2$= 6.05, p= 0.014) and for women skipping breakfast ($\chi2$ = 3.94, p = 0.047), inadequate vigorous physical activity ($\chi2$= 4.05, p= 0.044), and short or long sleep hours ($\chi2$= 7.22, p= 0.007) (Lovell et al., 2015).

Of 11,529 individuals (ages 18-25) from 8 American universities, 1,776 (15.3%) reported non-suicidal self-injury at some point in their lives and the prevalence rate for the previous 12 months for students was 6.8% (n=789) (Whitlock et al., 2011). Study findings suggested that females were more likely to self-injure when they were upset and men were 1.6 times more likely to report anger and 4 times more likely to report intoxication (Whitlock et al., 2011).

With the mental health concerns of young adults in the reviewed studies, it is useful to examine strategies and other variables that may influence mental health symptoms and outcomes. Assessing hope's role in promoting positive well-being will help to identify individual protective factors in this population.

Hope and emotional well-being.

There is considerable evidence that hope promotes positive mental well-being (Abdel-Khalek, 2013; Connell, O'Cathain, & Brazier, 2014; Demirli, Türkmen, & Arık, 2015; Marques, Pais-Ribeiro, & Lopez, 2011; Marques et al., 2015). For example, hope was the strongest predictor of mental health over a 2-year period in middle school students (N=367) (Marques et al., 2011). In another study, students (N= 682) with high levels of hope reported significantly

better life satisfaction ($r = .54$, p<.01), self-worth ($r= .52$, p<.01), and mental health ($r= .43$, p<.01) (Marques et al., 2015). In addition, hope has been shown to be highly correlated with well-being ($\beta = .78$), positive affect ($\beta = .62$), and flourishing ($\beta = .74$) among college students ($N=881$) (Demirli et al, 2015).

Hope is negatively correlated with depression (Sun, Tan, Fan, & Tsui, 2014; Visser, Loess, Jeglic, & Hirsch, 2013), negative life events (Monahan, Bracken-Minor, McCausland, McDevitt-Murphy, & Murphy, 2012; Visser et al., 2013), and rumination (Sun et al., 2014). In a sample of college students ($N=386$), trait hope was negatively associated with depressive symptoms ($r = -.51$, p<. 0001) (Visser et al., 2013). Additionally, hope was a moderator between depressive symptoms and negative life events (Visser et al., 2013); depressive symptoms and suicidal behavior (Hirsch, Visser, Chang, & Jeglic, 2012); and rumination and depression (Sun et al., 2014). For example, among college students ($N= 386$) the relationship between negative life events and depressive symptoms was weakened as trait hope increased across ethnicities (Visser et al., 2013). In another college sample ($N=372$), hope moderated the association between depressive symptoms and suicidal behavior, but only in whites (not blacks) suggesting a possible difference by race (Hirsch et al., 2012),

Hope is therefore an important predictor of overall mental well-being (including subjective well-being), and plays a role in protecting individuals from worsening mental health symptoms. It is still unclear if this relationship will apply to college students; particularly freshman students.

Physical functioning in college students

Functional health involves an individuals' ability to perform activities of daily living and functional health status can be measured with concepts of physical and role limitations, energy and fatigue; sleep, and pain (Hayes & Stewart, 1992). Many factors affect college students' functional health. Vigorous physical activity (Vankim & Nelson, 2013), limited exercise (Berg, Ritschel, Swan, An, & Ahluwalia, 2011; Lovell et al., 2015), substance abuse (Monahan et al.,

2012)), sleep quality (American College Health Association, 2014; Lovell et al., 2015), nutrition (Lovell et al., 2015) religiosity (Abdel-Khalek, 2013) and socialization (Vankim & Nelson, 2013) have been reported to affect functional health among college students.

Ninety-one percent of college students (*N*= 79,266) reported their health as being good, very good or excellent (American College Health Association, 2014). Studies have shown that college students are not meeting the guidelines of physical activity and nutrition (American College Health Association, 2014; Lovell et al., 2015; Vankim & Nelson, 2013), sleep hours or sleep quality (Lovell et al., 2015) as well as having a lack of energy (American College Health Association, 2014), have poor academic performance (role function) (American College Health Association, 2014), and weight concerns (in the American College Health Study, 2014: 4.5% were underweight, BMI<18.5; 22.5% overweight, BMI 25-29.9; 12.1% obese, class 1, 2, and 3 combined BMI 30-40 or higher) (American College Health Association, 2014). These reports demonstrate a negative impact on college students' functional health status and are likely factors in poorer health, which influences their everyday lives and ability to optimally function in their student role. Literature is limited on hope's role in functional health.

Health risk behaviors among college students

There is extensive research on health risk behaviors among college students (American College Health Association, 2014; Berg et al., 2011; Monahan et al., 2012; Substance Abuse and Mental Health Services Administration, 2012; Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2014; Visser et al., 2013; Wilkinson et al., 2014). The most commonly studied health risk behaviors include: alcohol use (American College Health Association, 2014; Berg et al., 2011; Lovell et al., 2015; Monahan et al., 2012; Okoro et al., 2004; Substance Abuse and Mental Health Services Administration, 2012), substance use (Mahon, Yarcheski, & Yarcheski, 2004), high risk sexual behaviors (American College Health Association, 2014), and cigarette smoking (American College Health Association, 2014; Berg et al., 2011; Lovell et al., 2015). The recent American College Health

Study (2014) reported the following risk behaviors by college students (*N*=79,266) in the past 30

days: using alcohol (66.8%), marijuana (18.3%), non-prescribed prescription drugs (14%),

smoking cigarettes (12.2%), and smoking tobacco from a water pipe (hookah) (8.6%). Health-

related behaviors including smoking and alcohol misuse have been correlated with alcohol related

health problems (e.g. injury, assault, rape) (Hingson, Zha, & Weitzman, 2009; Okoro et al.,

2004) and fewer physical healthy days (Monahan et al., 2012)

 Alcohol consumption is an important risk behavior on college campuses, as it is estimated

that 59.4% of young adult full time college students currently drink, 39% binge drink[1], and 12.7%

drink heavily[2] compared to same age peers not enrolled in college full time (e.g. part-time college

students and persons not enrolled in college) with drinking rates: 50.6, 33.4, and 9.3%

respectively (Substance Abuse and Mental Health Services Administration, 2014). In a study of

Australian university students (*N* =751), 42.9% of males and 31.6% of females reported binge

drinking (Lovell et al., 2015). In another study of university students (*N*=207), participants had

high mean levels of alcohol consumption (*M*= 16.45 drinks per week, *SD* 15.17) and alcohol

related consequences (*M*=12.64 problems; *SD* 8.55) and men in the study reported significantly

higher levels of alcohol consumption and alcohol related consequences compared with women in

the study (Monahan et al., 2012). Alcohol consumption particularly binge drinking is associated

with adverse health and social outcomes in college students and is associated with unintentional

injuries (Monahan et al., 2012) and sexual risk behavior (Benotsch, Snipes, Martin, & Bull, 2013)

 Several studies also report a positive correlation in young adults of higher risk sexual

behavior and alcohol (Benotsch et al., 2013; Snipes & Benotsch, 2013) or substance use

(Benotsch, Koester, Luckman, Martin, & Cejka, 2011; Benotsch et al., 2013; Snipes & Benotsch,

[1] Binge drinking is defined as having five or more drinks on the same occasion on at least 1 day in the

[2] Heavy drinking is defined as binge drinking on at least 5 days in the past 30 days.

2013). Young adults are at an increased risk of negative sexual outcomes (unwanted pregnancies, sexually transmitted infections etc.) (Centers for Disease Control and Prevention (CDC), 2012). High risk sexual behavior includes having more than 4 partners, lack of a condom or barrier during oral, vaginal or rectal sex, and lack of contraceptive use (oral, vaginal etc.) (American College Health Association, 2014). Incidence and prevalence estimates indicate that nearly 50% (9.8 million) of sexually transmitted infections were acquired by young adults ages 15-24 (Satterwhite et al., 2013).

Drug use issues in college students include use of: prescription drugs not prescribed (American College Health Association, 2014; Benotsch et al., 2011), opiates (Benotsch et al., 2011), marijuana, and other drugs (American College Health Association, 2014). In a study of 435 undergraduates, students reported using the following substances: pain medications 32.6%, sedatives 7.5%, anxiolytics 14.7%, and stimulants 14.7% (Benotsch et al., 2011). Comparatively in the American College Health study, students (N= 79,266) reported use of prescription drugs not prescribed 14%, marijuana 18.3%, and all other drugs 13.6%. Results of these studies indicate that a significant minority of young adults are using prescription drugs not prescribed and other drugs and are risking negative consequences (American College Health Association, 2014; Benotsch et al., 2011; Benotsch et al., 2013). The U.S. Office of National Drug Control Policy responded to the opiate epidemic with several recommendations and of particular importance to measure the extent of prescription use, misuse, and toxicity (Office of National Drug Control Policy & US Executive Office of the President, 2011).

Smoking rates have decreased over the past decade; rates in 2007 included 19.8% of adults (20% students) compared to 2013 17.8% adults (15.7% students) (Agaku, King, Dube, & Centers for Disease Control and Prevention (CDC), 2014; Kann et al., 2008; Kann et al., 2014). Despite the decreasing rates of cigarette smoking, smoking tobacco from a water pipe (Hookah) is increasing in youth and college students (US Department of Health and Human Services, 2012). Data on hookah prevalence have been limited, but small studies have reported the prevalence of

hookah use among college students to range from 6% to 8% within the past 30 days to 23% within the past year (Braun, Glassman, Wohlwend, Whewell, & Reindl, 2012; Dugas, Tremblay, Low, Cournoyer, & O'Loughlin, 2010; US Department of Health and Human Services, 2012). College students in a larger recent study (*N*= 79,266) reported using (within the last 30 days) cigarettes (12.2%) and tobacco from a water pipe (hookah) (8.6%) (American College Health Association, 2014). Water pipe use is higher in young adults (*N*=871) who concurrently smoke cigarettes, drink alcohol, engage in binge drinking, smoked marijuana, or have used illicit drugs in the previous year (Dugas et al., 2010)

In early adolescents, hope was correlated with positive health practices (r = .54) such as exercise, nutrition, relaxation, safety, and avoidance of substance use (Mahon et al., 2004). When examining hope in relation to healthy and unhealthy behaviors in undergraduate students (N=2265), higher hope was related to less frequent alcohol consumption (r= -0.043, p= .043), binge drinking (r= -0.073, p< .001), and smoking (r= -0.059, p= .005) and more frequent exercising (r= 0.168, p< .001) and dietary fat limitation (r= 0.130, p< .001) (Berg et al., 2011). Hope is therefore an important factor when promoting healthy behaviors and deterring unhealthy behaviors among young adult college students. This study will contribute to the body of knowledge of college student health-risk behaviors, and identify prevalence of reported high-risk sexual behaviors, drug use and dependence, and alcohol use and dependence in a freshman university sample in the Northeast.

Hope and academics

Hope is a predictor of success (Marques et al., 2015; C. R. Snyder, Shorey, & Cheavens, 2002; C. R. Snyder, 2000b), as well as resilience, and thriving (Consoli, Delucio, Noriega, & Llamas, 2015) in Academia. Snyder, Lopez, Shorey, Rand, and Feldman (2003) assert that high hope students do not let failures affect their self-worth in the long run. Hope predicts GPA(Curry, Snyder, Cook, Ruby, & Rehm, 1997; Heiman & Shemesh, 2012; Marques et al., 2015; C. R. Snyder et al., 2002), school engagement (Marques et al., 2015), academic achievement (Marques

et al., 2015), a higher likelihood of graduating, and a lower likelihood of dismissal (C. R. Snyder et al., 2002) among college students. For example, in a 6-year longitudinal study of 18-21 year old college students (*N*= 213) hope was a better predictor of higher overall GPA, a higher likelihood of graduating, and a lower likelihood of dismissal when controlling for entrance examination scores (C. R. Snyder et al., 2002). Hope has also been found to mediate the relationship between a learning disability and academic self-efficacy (Feldman, Davidson, Ben-Naim, Maza, & Margalit, 2016). College students in the American College Health Study (2014) reported that anxiety (21.8%), sleep difficulties (21%), and stress (30.3%) negatively affected their academic performance (American College Health Association, 2014).

The reviewed study findings demonstrate that academic success is based on more than intelligence and ability. The relationship between dispositional hope and GPA was established in college students (C. R. Snyder et al., 2002), providing an academic advantage in higher hope students as well as a higher likelihood of completing their academic degrees. This will extend C.R. Synder el al., 2002's work and further validate hope as a predictor in a current sample of college students. With the magnitude of reported mental symptoms, health concerns, and the fact that students are recognizing the negative impact on academic performance, hope is likely an important factor in mitigating health risks, decreasing mental health symptoms, improving health function, and increasing the chance of academic success in college.

Theoretical Framework

Conceptual framework/theory

C.R. Snyder's Hope Theory (2002) will be used to guide this study (Figure 1). According to C.R. Snyder (2002), hope is defined as "the perceived capability to derive pathways to desired goals, and to motivate oneself via agency thinking to use those pathways (p. 249). C.R. Snyder's Hope Theory assumes all individuals are goal oriented (C. R. Snyder, 2002). According to this theory, a person's pathways and agency thinking are learned over the course of childhood and

later (C. R. Snyder, 2002). It is believed that those with lower hope or "lacking hope" were taught to think that way in childhood or that such hopeful thought was destroyed during that early time (C. R. Snyder, 2002). As a person endures pathways and agency thinking, iterations of thought processes bring about different instances of goal pursuits (C. R. Snyder, 2002). The hopeful thinking is accompanied by trait-like emotional sets (e.g. moods or as we are proposing 'core self-evaluations'), which affect the goal pursuit process in general (C. R. Snyder, 2002). For example, high-hope persons exhibit friendliness, happiness, and confidence and low-hope persons exhibit negative, passive feelings during the goal pursuit process (C. R. Snyder, 2002).

High-hope persons generate more goals compared with low-hope persons (C. R. Snyder, 2002). Having more goals allows the person with high-hope to readily start a new goal pursuit process should the original goal be unreachable (C. R. Snyder, 2002). Prior to settling on one goal, a person will consider outcomes of goal pursuits (C. R. Snyder, 2002). Outcome appraisal (shown in figure 1) sometimes occurs at the pre-event analysis phase while at times "people cannot accurately appraise the value of a given goal pursuit until they have begun to pursue that goal" (C. R. Snyder, 2002, p. 253). Consistent with C.R. Synder's Hope theory: hope predicts better outcomes in academics (Marques et al., 2015; C. R. Snyder et al., 2002), physical health (C. R. Snyder, 2002), psychological adjustment (Marques et al., 2015; C. R. Snyder, 2002) and psychotherapy (C. R. Snyder, 2002). The hope model includes a trilogy of components: goals, pathways thinking, and agency (C. R. Snyder et al., 2002).

Goals.

There are two general types of desired goals in hope theory: Type 1 (positive goal outcome) and Type 2 (negative goal outcome) (C. R. Snyder, 2002). Type 1 (positive) goal outcomes include reaching for the first time, sustaining the present goal outcome, and increasing that which already has been initiated (C. R. Snyder, 2002). In the proposed study, we will consider type 1 goals to include better academic performance, emotional well-being, and physical function. Students in the proposed study are freshman and in college for the first time, so better academic

performance (e.g. GPA >3.0) would be an example of a type 1 positive goal outcome reached for the first time. Type 2 (negative) goal outcomes include: preventing it from happening or delaying it from occurring (C. R. Snyder, 2002). The proposed study will test a type 2 negative goal outcome with health risk behaviors (e.g. drug use, high-risk sexual activity, substance use). Those with higher hope according to this theory will demonstrate a deterrence of a negative goal outcome (e.g. lower health risk behaviors) compared to their lower hope counterparts.

Goals can be short-term or long-term (C. R. Snyder, 2002). According to hope theory, a goal can be a significant lifelong pursuit (e.g. developing a comprehensive theory of human motivation) or it can be focused and brief (e.g. getting a passing grade on a quiz) (C. R. Snyder et al., 2003). When goals are not met the failure feedback mechanism of hope theory has been shown to result in negative emotions (C. R. Snyder, 2000a). Depressive symptoms can occur or worsen in relation to goals in the following ways: an important goal is blocked, the choosing of unsatisfying goals, or a general expectancy of failure (C. R. Snyder, 2000a)

Pathways thinking.

Pathways thinking involves the way in which people can link the present to imagined futures (C. R. Snyder, 2002). Insufficient pathways can be the result of an inability to generate pathways or an inability to disengage from dead-end pathways (C. R. Snyder, 2000a). The pathways component includes the actual ability to generate routes as well as the perceived ability to generate routes to a goal (C. R. Snyder, 2000a). Higher pathways thinkers come up with solutions and anticipate problems ahead of time (C. R. Snyder, 2000a). Problems are seen as motivating challenges (e.g. high hope thinker) vs. a setback or roadblock (e.g. low hope thinker). People approach goal pursuits in terms of generating usable routes (pathways thinking) (C. R. Snyder, 2002). If a student, for example, is struggling in a class they may come up with another plan should they not be successful ahead of time (e.g. signing up for an intercession class). According to hope theory, people are constantly thinking about how to get from Point A to Point B (C. R. Snyder, 2002).

Agency thinking.

Agency thinking involves the perceived ability to reach a desired goal and involves using pathways towards that goal (C. R. Snyder, 2002, p. 251). High-hope people use self-talk agency phrases such as "I can do this" or "I am not going to be stopped" (C. R. Snyder, Lapointe, Crowson, & Early, 1998). Agency thinking is important during the goal thought process, but is especially significant when a person encounters a blockage (C. R. Snyder, 2002). A person channels the requisite motivation (agency) to the best alternate pathway should a blockage occur (C. R. Snyder, 2002).

Empirical Evidence for Hope Theory

Multiple studies could be found that used this theory to guide research on mental health (Anestis, Moberg, & Arnau, 2014; Demirli et al., 2015; Hirsch et al., 2012; Marques et al., 2011; Marques et al., 2015; Stoyles et al., 2015; Sun et al., 2014; Visser et al., 2013), goal attainment (Coduti & Schoen, 2014; Curry et al., 1997; Feldman et al., 2009; C. R. Snyder et al., 2002), academic success (Marques et al., 2015; C. R. Snyder et al., 2002), and self-efficacy (Feldman et al., 2016; Ouweneel et al., 2011; Smedema et al., 2014). Results of these studies suggest that hope is an important factor in the transition (Feldman et al., 2016) and thriving in college (Consoli et al., 2015). This study will further the understanding of hope as a predictor for health outcomes (emotional well-being, functional health, and health risk behaviors) in a young college sample providing a broader view of health as opposed to focusing on a single aspect of health (e.g. mental health).

Hope is positively correlated with greater problem solving ability (Chang, 1998), self-efficacy (Davidson et al., 2012; Feldman et al., 2016; Judge et al., 2003; Ouweneel et al., 2011), self-worth (Marques et al., 2011; Marques et al., 2015), well-being (including subjective well-being and spiritual well-being) (Demirli et al., 2015; Smedema et al., 2014), positive experiences (Demirli et al., 2015; Stoyles et al., 2015), coping (Chang, 1998; Stoyles et al., 2015), positive active and non-active emotions (Ouweneel et al., 2011), and life satisfaction (Marques et al.,

2011; Marques et al., 2015). An inverse relationship was found between hope and health risk

behaviors (Berg et al., 2011), disengagement strategies (Chang, 1998), negative experiences

(Demirli et al., 2015; Visser et al., 2013), and suicidal ideation (Anestis et al., 2014; Stoyles et al.,

2015). Hope has been found to moderate the relationship between depressive symptoms and

suicidal behavior (Hirsch et al., 2012); rumination and depression (Sun et al., 2014); negative life

events and depressive symptoms (Visser et al., 2013) as well as mediate the relationship between

core self-evaluation and life satisfaction (Smedema & Tansey, 2015).

This study will test the three components of hope theory (agency, pathways, and goals) in the

context of emotional well-being, physical functioning, and health risk behaviors among students

in their first year. Transitioning into college life can be a significant stressor, which may place

young adults more at risk for psychological distress. Hope involves the perception and ability to

derive multiple pathways and motivation to desired goals (Snyder, 2002). Assessing factors,

which contribute to academic and health goals, as well as health risks in young adults will

provide a contribution to the hope literature and increase the generalizability of prior study

findings. This study will test, as suggested by the theory, whether hope predicts emotional well-

being, physical function, academic performance, and health risk behaviors in freshman college

students.

Figure 1 Hope Theory Schematic

Snyder's Hope Theory (1991/1997/2002)
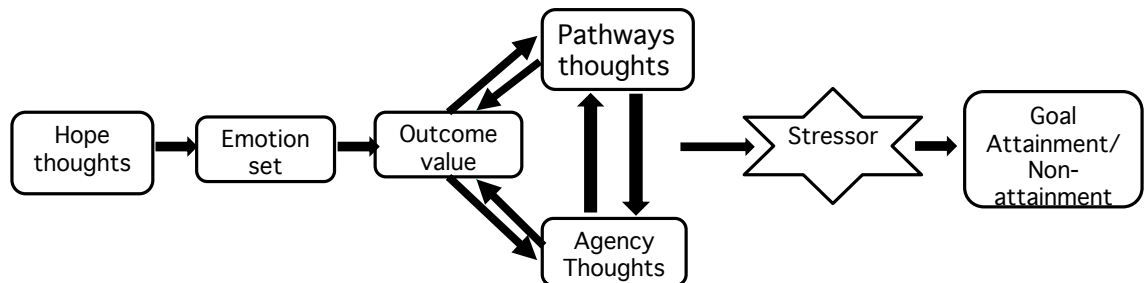
Hope is defined as "the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways" (Snyder, 2002, p. 249) .

Figure 2: Models to be tested

Model 1

_____
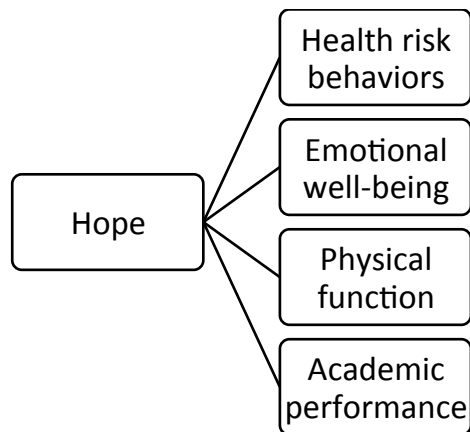
Model 2
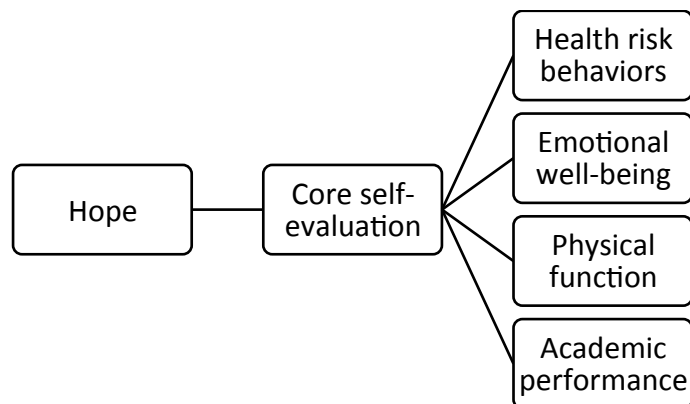
Methods

Design

    This study will use an online survey design with a cross-sectional sample of freshman

university students at a large public university.

Human subjects' approval will be obtained from the University of Massachusetts Medical

School's Institutional Review Board and an Institutional Authorization Agreement (IAA) will be

obtained from the participating institution prior to any communication or data collection.

Sample/Setting

The sample will be obtained from first year/freshman students at a large public university in

the northeast. All freshman students, with institutional emails (list obtained from registrar) will be

invited to participate in the study after the first semester GPA is available to students. Inclusion

criteria include: full-time freshman students between the ages of 18-24 at the participating

institution. Exclusion criteria include: students who are not freshman and students enrolled in less

than 12 credits or part-time status, unable to consent, prisoners, or those under the age of 18.

Procedures

An email list that contains the institutional email addresses of all freshmen enrolled in the

Fall of 2016 will be obtained from the registrar (permission granted 6/24/16). First a pilot study

will be conducted. Fifty email addresses will be randomly selected to participate in the pilot

study to examine any problems with the recruitment procedure, estimate response rate and

examine any problems with the survey questions. All data will be collected via an online

Research Electronic Data Capture (REDCap) survey. Once the pilot is completed and needed

refinements are made the execution of the main study will begin. Invitations will be sent out to

incoming freshman (excluding those selected for the pilot sample) with a link to the REDcap

survey. A second invitation will be sent out 7 to10 days following the first email. If the response

rate is less than 20% after the second email attempt, a third email will be sent out 7 to10 days

following the second email attempt. After the third email attempt no further recruitment will take

place. The email will contain an invitation to participate in the study, the study fact sheet, and a

direct link to the survey. Potential participants (in both the pilot phase and the main study) will

also be informed that once they complete the survey they can opt in to be entered into a drawing

for one of 30 $50 gift cards as a way to thank students for their participation in this study.

Data will be managed by the Principle Investigator on the REDCap site and will be uploaded into the Statistical Package for the Social Sciences (SPSS version 22.0 for analysis). The data set will be maintained on a secure research drive that is password protected and backed up nightly. No data will be stored on a private computer. All data will be anonymous. No identifiers linked with responses will be collected or stored. Given the sensitive nature of the data, participants will be asked to close their browser window when they have completed the survey. However, in order to execute the raffle for the $50 gift certificates – students will be asked to email the PI separately with their name and email address. Those winning the gift certificates will be sent the incentive via email. These data will be destroyed immediately after the raffle is completed. The names and email addresses will not be linked with the responses to the survey.

Measures

A survey will be developed, uploaded into REDCap, that includes the following measures. The survey in its entirety will take 10-15 minutes to complete.:

    Demographics. Age (continuous), gender (categorical: male/female/other), freshman status(dichotomous), student status (dichotomous), ethnicity (categorical), partner status (categorical), military status (categorical or dichotomous), living situation (categorical), SES (dichotomous), mental health care (dichotomous), current medication usage for mental health (dichotomous), treatment for substance use issue (dichotomous), physical disability (dichotomous).

    Academic Performance: The following data will be self-report: Semester one GPA (continuous), satisfaction with academic performance (continuous), SAT scores (continuous). Descriptive statistics will be used for all demographic variables.

    Health Risk Behaviors Scale. Three scales will be used to measure health risk: (a) Alcohol Use Disorders Identification Test (AUDIT-C), (b) Drug Abuse Screening Test (DAST) and, (c)

the Sexual Risk Taking with Uncommitted Partners (SRT) subscale of the Sexual Risk Survey (SRS).

AUDIT-C is a 3-item alcohol screening scale that helps to identify hazardous drinking or active alcohol use disorders (including alcohol abuse and dependence) using a 5-point Likert scale (never, monthly or less, 2-4 times per month, 2-3 times per week, 4 or more times per week) (Reinert & Allen, 2007). Sensitivity/specificity scores in men are 0.95/0.65 for hazardous drinking and .90/0.45 for active alcohol abuse or dependence (for scores ≥ 3) (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998). In women sensitivity/specificity scores are 0.66/0.94 respectively (Bush et al., 1998).

The DAST-10 is a 10-item dichotomous (Y/N) measure of a respondent's drug use, not including alcohol or tobacco (Cocco & Carey, 1998). The DAST-10 is an abbreviated version of the original 28-item scale (Skinner, 1982). Using skip logic, any respondents who identify drug use within the past year will receive the 10 items. The DAST-10 has been shown to have good internal consistency (Cronbach's α = .86), and temporal stability (test–retest intraclass correlation coefficient = .71) (Cocco & Carey, 1998). The DAST was used in a college sample, and the internal consistency (α = .69) (McCabe, 2008) was minimally acceptable (DeVellis, 2012).

The SRT is an 8-item measure of a respondent's sexual risk taking with uncommitted partners over the past 6-months (Turchik & Garske, 2009). The scale will be adapted for this study from an open response format to a 5-point Likert scale for each question (0, 1, 2, 3, 4 or more). Examples of questions include number of sex partners, sex with uncommitted partners, sex with someone not known well, sex before discussing risk factors etc. (Turchik & Garske, 2009). Internal consistency alphas in a college sample ranged from .88-.90 (Turckik & Garske, 2009).

Scoring will be as follows: (a) AUDIT-C: 0-2=low risk, 3-4=moderate risk, 5-12=high risk, (b) DAST-10: 0-2=low risk, 3-4=moderate risk, >5 is high risk, (c) SRT: 0-2=low risk, 3-5=moderate risk, 6-40=high risk. The totals of the subscales will be added together to determine

overall low (0-6), moderate (7-18), and high (19-40) risk health behavior scores (inclusive of alcohol and drug use and dependence and sexual risks). Higher scores indicate higher risk.

Adult Dispositional Hope Scale. This is a 12-item measure of a respondent's level of hope (C. R. Snyder et al., 1991). The 12 items include: a 4-question agency subscale, a 4-question pathways subscale, and 4-distractor items (not scored). Each item is answered using an 8-point Likert scale ranging from definitely false to definitely true. For the total scale, Cronbach's alphas range from .74 to .84 (C.R. Snyder et al., 1991). The total hope scale score will be used in the analysis. Higher scores equal greater hope.

Core self-evaluation. It is a 12-item (e.g. "I am confident I get the success I deserve in life") rated on a 5-point Likert scale (strongly disagree to strongly agree). Core self-evaluation (CSE) is a construct comprised of four traits: self-esteem, generalized self-efficacy, emotional stability (opposite of neuroticism), and locus of control (Docherty & Sandelowski, 1999). These four traits reflect the overall judgment that individuals have about their value and competency as people (Smedema et al., 2014). It is both cognitive and affective in nature, as it encompasses both individuals' global thoughts and feelings about themselves (Smedema et al., 2014). Cronbach's Alphas range from .81 to .87 (Docherty & Sandelowski, 1999; Smedema et al., 2014). The total scale score will be used in the analysis. Scores range from 12-70 with higher scores being indicative of greater levels of CSE (Smedema et al., 2014).

RAND 36-item health survey (version 1.0). Two subscales and a general health perception question from the health survey will be used: the physical functioning and emotional well-being (also referred to as the MHI-5) subscales, and general health perception (excellent, very good, good, fair, poor). The physical functioning subscale is a 10-item scale measuring limitations of activities (on a 3-point Likert scale): vigorous, moderate, lifting, climbing stairs, bending, walking, bathing/dressing (Ware & Sherbourne, 1992). The alpha for the physical functioning subscale is 0.92 (Ware & Sherbourne, 1992). Higher scores reflect better physical functional health.

The emotional well-being subscale is a 5-item measure that is a short version of the

Mental Health Inventory-38 developed in 1975 for the Rand Health Insurance Experiment (Ware,

Kosinski, & Keller, 1998). The five questions (e.g., how much of the time, during the last month,

have you been a happy person?) measure anxiety, depression, loss of behavioral or emotional

control, and psychological well-being (Ware et al., 1998) on a 6-point rating scale (1 = all of the

time to 6 = none of the time). The MHI has been shown to effectively predict use of outpatient

mental health services, diagnose, and distinguish patients with a psychiatric condition from those

without a psychiatric condition (Ware & Sherbourne, 1992). Internal consistency coefficients

range from .67 to .95 (Ware et al., 1993). The total MHI scale score will be used in the analysis.

The scoring system for the MHI generates a total score with higher scores equaling better

emotional well-being.

*Physical functioning (10-items) are 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 of the RAND-36 scale.

 *Emotional well-being (5-items) are 24, 25, 26, 28, 30 of the RAND-36 scale.

*General health perception (1-item) as 1 of the RAND-36 scale.

Marlowe-Crowne Social Desirability Scale. This is a 13-item short form version of the

original 33-item scale measuring a respondent's social desirability bias using a true/false

format(Reynolds, 1982). The 13-item short form has demonstrated an acceptable level of

reliability (rKR-20 = .76) in undergraduates (Reynolds, 1982).

Data Analysis

Descriptive statistics will be computed for all demographic, health risk behavior, academic

performance and scale variables. These variables will be used to describe the sample. Study

variables will be examined for marked skewness, outliers and systematic missing data.

Cronbach's alphas will be computed for the Adult Dispositional Hope Scale, Core Self-

Evaluation Scale, physical functioning and emotional well-being subscales of the RAND-36,

AUDIT-C, DAST, and SRT for the full sample and separately by gender, race/ethnicity and age.

Aim 1. Determine if hope (agency and pathways) predicts physical function, emotional well-being, academic performance, and health risk behaviors (as measured with the adult dispositional hope scale, physical function and emotional well-being subscales, GPA, and health risk behaviors: alcohol use severity, drug use, sexual risk taking).

Hypothesis 1. Higher levels of hope will predict more positive emotional well-being, physical function, and higher academic performance as well as fewer health risk behaviors.

Steps in Analysis of Aim1.

(1) Correlations between hope, substance use, emotional well-being, physical function, health-risk behaviors, and academic performance will be assessed. Variables with a modest relationship ($r \geq .3$) will be included in a linear regression analysis.

(2) A Linear regression will be run where the IV is hope, and the DVs are emotional well-being (MHI-5), physical function, academic performance (GPA: good GPA = ≥ 3.0), health risk behaviors: alcohol use severity, drug use, sexual risk taking. Possible covariates: gender, race, age, and social desirability will be determined.

Aim 2. Determine the role of core self-evaluation as a potential mediator in the relationship between hope and health risk behaviors, physical function, emotional well-being, and academic performance (as measured with the adult dispositional hope scale, health risk behaviors: alcohol use severity, drug use, sexual risk taking, core self-evaluation scale, physical function and emotional well-being subscales, and GPA).

Hypothesis 2. Core self-evaluation will mediate the relationship between hope and risk behaviors, physical function, and emotional well-being, and academic performance.

Steps in analysis of Aim 2.

Path analysis (see table 1) will be done to test the mediational hypothesis (core self-evaluation will mediate the effect of hope on risk behaviors, physical function, emotional health and academic performance) the following 3 regression equations will be run (Baron & Kenny, 1986):

Table 1 Path Analysis

Dependent variable	Independent variable	Path
Core self-evaluation	Hope	(a) regress mediator on IV
Risk behavior, physical function, emotional well-being, academic performance	Hope	(b) regress DVs on IV
Risk behaviors, physical function, emotional well-being, academic performance	Hope, Core self-evaluation	(c) regress DVs on IV and mediator

To test the mediation model, the independent variable (hope) must affect the mediator (core self-evaluation) in the first equation; next, the independent variable (hope) must affect the dependent variables (risk behavior, physical function, emotional well-being and academic performance) in the second equation; and lastly the mediator (Core Self-Evaluation) must affect the dependent variables in the third equation (see figure 3). Mediation is present if the independent variable (hope) has no effect when the mediator (core self-evaluation) is controlled (Baron & Kenny, 1986).

Figure 3: Mediation Model
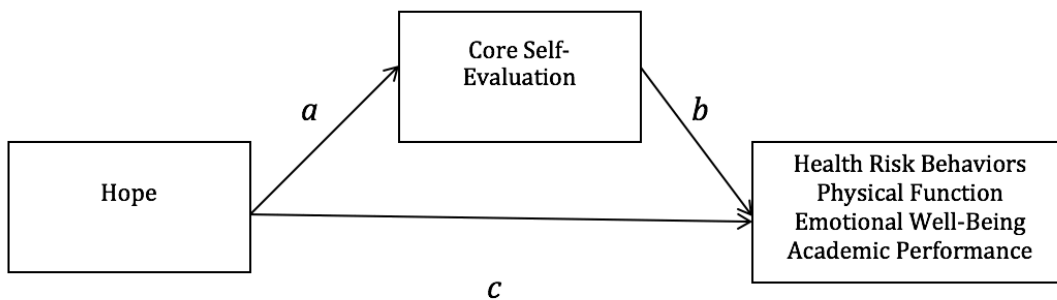
A power analysis was done for the third regression analysis; since it involves the greatest number of independent variables to be tested in the study. Assuming a conservative small effect size of 0.02, power of 0.80 and an alpha level of 0.05 the analysis for two predictors requires a minimum of 478 cases. However, if the effect is moderate (0.13) the same analysis would only require a sample size of 77 subjects. Therefore, even if only 10% ($N = 4650$) of the available population responds to the survey we will have an adequate sample to complete the analyses.

Aim 3. Explore differences in hope, core self-evaluation, emotional well-being, physical function, and health risk behaviors by gender, age, race, and social desirability.

Steps of analysis for Aim 3.

Differences by gender, self-reported race, age, and social desirability will be evaluated.

(1) **Gender:** Independent t-tests will be used to assess differences in hope, CSE, emotional well-being, physical function, and health risk behaviors by gender

(2) **Race:** Assuming normality for the dependent variables, Analysis of Variance will be used to examine differences in the DV's by race (assuming adequate cell counts in 3 or more racial groups).

(3) **Age:** A linear regression will be used to evaluate the effect of age on the DV's.

(4) **Social Desirability:** Assuming normality for the dependent variables, Analysis of Variance will be used will to examine differences in the DV's in social desirability.

Human subjects' considerations

This is a minimal risk survey study, which will collect anonymous data. There are no anticipated physical risks associated with this study. However, this risk of a data breech is always present. No identifiers will be linked with survey responses. All data will be maintained on a secure password protected research drive. There is the rare potential for psychological distress related to some of the questions asked in the survey (drug, alcohol and sexual behaviors questions). Information about how to access university support services related to substance use and sexual risks will be provided on the fact sheet. Only the members of the research staff will have access to the research data.

Conclusion

Hope, emotional well-being, and physical function are indicators of success in overall health and well-being and are meaningful to explore in young college students who experience significant stressors and have a 18.7% mental health condition rate (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2014). This study will extend the findings of Marques, Pais-Ribeiro, & Lopez (2011) where hope was the strongest predictor of mental health and a predictor of academic achievement in middle school students in Portugal over a 2-year time

period. Secondly, this study will examine physical function, and health risk behaviors as other important outcomes in a young adult population attending college for the first time. Lastly, this study also seeks to explore core self-evaluation as a mediator that has not yet been studied in a young college population. Additional samples and studying these relationships across the developmental spectrum are necessary to increase the generalizability of hope theory as well as determining hope's role in predicting health and academic outcomes. Hope, a sense of coherence, and self-efficacy have all been responsive immediately to hope interventions, but the underlying mechanism to maintain these constructs over time is unknown (Davidson et al., 2012; Feldman & Dreher, 2012). If findings are significant, determining ways to intervene to increase hope would be a meaningful next step to potentially improve emotional well-being, physical function, and academic success and decrease health risk behaviors in a young college sample.

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APPENDIX A: EXAMINING HOPE THEORY SURVEY

1. Age in years ☐18 ☐19 ☐20☐21☐22☐23☐24

2. Gender (male, female, other_____)

3. In general, would you say your health is: (excellent, very good, good, fair, poor)

4. Are you a freshman? **Yes/ No**

5. Are you a full time student (e.g. enrolled in 12 credits or more) **Yes/ No**

6. What year did you graduate from high school or complete a G.E.D.? _____

7. How would you describe yourself? (White, Hispanic or Latino, Black or African American, Asian, American Indian or Alaska Native, Native Hawaiin or Other Pacific Islander, Other)

8. What is your partner status? (never been married, married, separated, divorced, widowed, living with partner)

9. What is your military status? (non-military, reserves, active military)

10. Where do you currently live? (College dormitory or residence hall, off-campus house or apartment, parent/guardian's home, fraternity, sorority, Other-please specify_____).

11. Please choose the answer that best reflects the involvement of your parent(s) or guardian(s) in your college education? (I wish they were more involved, Their involvement is just about right, I wish they were less involved)

12. What extracurricular activities are you involved in? (I'm not involved in any extracurricular activities, sports, clubs, student government, other (please specify):_____)

13. What was your overall GPA (4.0 scale) from the Fall semester 2016? _____

14. How satisfied are you with your academic performance? (not at all satisfied, slightly satisfied, moderately satisfied, very satisfied, extremely satisfied)

15. What was your entrance examination score (e.g. SAT or ACT: please add together reading, math, and writing and provide a total score)? _____

16. Have you ever been under the care of someone for a mental health issues? **Yes/ No**

17. Are you currently taking medication to treat your mental health issue? **Yes/no**

18. Have you ever been treated for a substance use issue? **Yes/no**

19. Do you have enough money to cover your monthly expenses? **Yes/no**

20. Do you have a physical disability that limits your ability to walk, run, climb stairs or lift heavy

    objects? **Yes/no**

Directions: Read each item carefully. Using the scale shown below, please select the number that best

describes YOU.

21. I can think of many ways to get out of a jam.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

22. I energetically pursue my goals.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

23. I feel tired most of the time.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

24. There are lots of ways around any problem.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

25. I am easily downed in an argument.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

26. I can think of many ways to get the things in life that are important to me.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

27. I worry about my health.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

28. Even when others get discouraged, I know I can find a way to solve the problem.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

29. My past experiences have prepared me well for my future.

Definitely	Mostly	Somewhat	Slightly	Slightly	Somewhat	Mostly	Definitely

False	False	False	False	True	True	True	True

30. I've been pretty successful in life.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

31. I usually find myself worrying about something.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

32. I meet the goals that I set for myself.

Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

Directions: The following items are about activities you might do during a typical day. Does **your health now limit you** in these activities? If so, how much?

33. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
34. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
35. Lifting or carrying groceries	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
36. Climbing **several** flights of stairs	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
37. Climbing **one** flight of stairs	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
38. Bending, kneeling, or stooping	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
39. Walking **more than a mile**	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
40. Walking **several blocks**	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
41. Walking **one block**	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all
42. Bathing or dressing yourself	☐ Yes, limited a lot☐ Yes, limited a little☐ No, not limited at all

Directions: These questions are about how you feel and how things have been with you **during the past 4 weeks.** For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 4 weeks…**

	All of the time	Most of the time	A good bit of the time	Some of the time	A little bit of the time	None of the time
43. Have you been a very nervous person?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
44. Have you felt so down in the dumps that nothing could cheer you up?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
45. Have you felt calm and peaceful?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
46. Have you felt downhearted and blue?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
47. Have you been a happy person?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

Instructions: Below are several statements about you with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by clicking on the appropriate box below.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
48. I am confident I get the	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

success I deserve in life.					
49. Sometimes I feel depressed.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
50. When I try, I generally succeed.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
51. Sometimes when I fail I feel worthless.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
52. I complete tasks successfully.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
53. Sometimes, I do not feel in control of my work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
54. Overall, I am satisfied with my work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
55. I am filled with doubts about my competence.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
56. I determine what will happen in life.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
57. I do not feel in control of my success in my career.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
58. I am capable of coping with most of my problems.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
59. There are times when things look pretty bleak and hopeless to me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

60. How often did you have a drink containing alcohol in the past year? (never, monthly or less, two to four times a month, two to three times a week, four or more times a week)

61. How many drinks did you have on a typical day when you were drinking in the past year? (1 or 2, 3 or 4, 5 or 6, 7 to 9, 10 or more)

62. How often did you have six or more drinks on one occasion in the past year? (never, less than monthly, monthly, weekly, daily or almost daily)

The next several questions are about drug use. The various classes of drugs may include: cannabis (e.g. marijuana, hash), solvents, tranquilizers (e.g. Valium), barbiturates, cocaine, stimulants (e.g. speed), hallucinogens (e.g. LSD), or narcotics (e.g. heroin, Percocet). These questions DO NOT include alcohol or tobacco.

Directions: Please answer No or Yes.

In the past 12 months...

63. Have you used drugs other than those required for medical reasons?
☐No   ☐Yes

If yes, administer 64-72, if no skip to question 73.
64. Do you use more than one drug at a time?
☐No   ☐Yes

65. Are you always able to stop using drugs when you want to?
☐No   ☐Yes
66. Have you had "blackouts" or "flashbacks" as a result of drug use?

☐No   ☐Yes
67. Do you ever feel bad or guilty about your drug use?

☐No   ☐Yes
68. Do your parents (or friends or spouse) ever complain about your involvement with drugs?

☐No   ☐Yes
69. Have you neglected your family because of your use of drugs?

☐No   ☐Yes
70. Have you engaged in illegal activities in order to obtain drugs?

☐No   ☐Yes
71. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?

☐No   ☐Yes
72. Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)?

☐No   ☐Yes

Directions: Please consider only the last 6 months when indicating the frequency of sexual behavior below.

73. How many partners have you had sex with? (0, 1, 2, 3, 4 or more)

74. How many people have you had sex with that you know but are not involved in any sort of relationship with (i.e., ''friends with benefits'')? (0, 1, 2, 3, 4 or more)

75. How many times have you had sex with someone you don't know well or just met? (0, 1, 2, 3, 4 or more)

76. How many times have you had sex with a new partner before discussing sexual history, IV drug use, disease status and other current sexual partners? (0, 1, 2, 3, 4 or more)

77. How many times (that you know of) have you had sex with someone who has had many sexual partners? (0, 1, 2, 3, 4 or more, don't know)

78. How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STIs/HIV? (0, 1, 2, 3, 4 or more, don't know)

79. How many partners have you had sex with that you didn't trust? (0, 1, 2, 3, 4 or more)

80. How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period? (0, 1, 2, 3, 4 or more, don't know)

Directions: Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you.

81. It is sometimes hard for me to go on with my work if I am not encouraged.

☐ True   ☐ False

82. I sometimes feel resentful when I don't get my own way.

☐ True   ☐ False

83. On a few occasions, I have given up doing something because I thought too little of my ability.

☐ True   ☐ False

84. There have been times when I felt like rebelling against people in authority even though I knew they were right.

☐ True   ☐ False

85. No matter who I'm talking to, I'm always a good listener.

☐ True   ☐ False

86. There have been occasions when I took advantage of someone.

☐ True   ☐ False

87. I'm always willing to admit when I make a mistake.

☐ True   ☐ False

88. I sometimes try to get even, rather than forgive and forget.

☐ True   ☐ False

89. I am always courteous, even to people who are disagreeable.

☐ True   ☐ False

90. I have never been irked when people expressed ideas very different than my own.

☐ True   ☐ False

91. There have been times when I was quite jealous of the good fortune of others.

☐ True   ☐ False

92. I am sometimes irritated by people who ask favors of me.

☐ True   ☐ False

93. I have never deliberately said something that hurt someone's feelings.

☐ True   ☐ False

Please fill in the blanks provided in the spaces below:

94. Please list 2-3 personal goals you hope to accomplish over the next 3-5 years.
_____, _____, _____.

95. Describe what gives you hope in accomplishing these goals:

    _____.

Question for Pilot Study

96. Were there problems with any of the questions in the survey? (choose the best answer)
    a. Yes, it was too long
    b. Yes, the questions were too personal
    c. No
    d. Other: please specify_____

Please close your window once your survey is complete

Executive Summary

1. The following questions were removed from the survey:
   a. SAT/ACT question. There were various exams and scoring systems for students as the SAT had added in a writing component and removed it. It would be difficult to trace this question.
   b. Distractor item from the hope survey: "I am easily downed in an argument". This item is not scored (and therefore will not contribute to reliability) and the wording was confusing.
2. The following questions were added to the survey:
   a. Who pays for the majority of your living expenses? (I pay for most of my living expenses, my parents/guardians pay for most of my living expenses, I have loans that pay for my living expenses, I have grants/scholarships (I don't have to pay back) that pay for most of my living expenses, Other please specify_____)
   b. Is there anything else you would like to share about how HOPE functions in your life?
3. The following adjustments were made to questions in the survey:
   a. Skip pattern added for the "How many drinks?" question
4. The 3rd question from the AUDIT-C was erroneously omitted during the execution of the main study. This occurred after the addition of a skip pattern. The chair of the committee was notified and it was decided to write this as a limitation due to the fact that it was observed after 300 people had participated. The question was:
   a. How often did you have six or more drinks on one occasion in the past year? (never, less than monthly, monthly, weekly, daily or almost daily)
5. Recruitment strategy changed due to pilot results (time was shortened to 3-4 days between notifications vs. 7 days). Students did not respond after 24 hours.

Slide Presentation

The relationship between hope, core self-evaluations, emotional well-being, sexual risk taking, substance use, and academic performance in freshman university students

Stephanie Griggs, MSN, BS, RN
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Graduate School of Nursing

Purpose

To test several tenets of hope theory by examining the relationship between hope, physical function, emotional well-being, health risk behaviors, and academic performance in freshman college students ages 18-24 enrolled in their first year of college.

Specific Aim 1

Determine if hope predicts physical function, emotional well-being, academic performance, and health risk behaviors (sexual risk taking, drug, and alcohol use)

Hypothesis 1: Higher levels of hope will predict more positive emotional well-being, physical function, and higher academic performance as well as fewer health risks.

Specific Aim 2

Determine the role of core self-evaluations as a potential mediator in the relationship between hope and health risk behaviors, physical function, emotional well-being, and academic performance

Hypothesis 2: Core self-evaluations will mediate the relationship between hope and risk behaviors, physical function, emotional well-being, and academic performance.

Specific Aim 3

Explore differences in hope, core self-evaluations, physical function, emotional well-being, and health risk behaviors by gender, age, race, and social desirability.

Background

➢Academic performance

- Hope predicts success, [1-3] resilience, thriving, [4] GPA, [2,5,6] school engagement, [1] academic achievement, [1] ↑'d likelihood of graduating, ↓'d likelihood of dismissal [2]

➢Health risk behaviors

- Alcohol: 59.4% drink (39% binge, 12.7% heavy); same age peers 50.6, 33.4 & 9.3 respectively [6]
- Drugs: non-prescribed prescription, opiates, marijuana [8,9]
- Sexual activity: 50% STD estimate (ages 15-24), [10] casual sex, high risk behaviors [11]

Background

➢ Emotional well-being

- 1 in 5 AMI, 3.6% SMI (ages 18-25)[1]
- Suicide is 2nd leading cause of death[2]
- Poor mental health scores [3, 4]

➢ Physical function

- Not meeting guidelines of physical activity & nutrition[3, 4, 5]
- Lack of energy, [5] poor sleep quality,[4] poor academic performance, [5] weight concerns [5]

Hope Theory (Snyder 1991/2002)
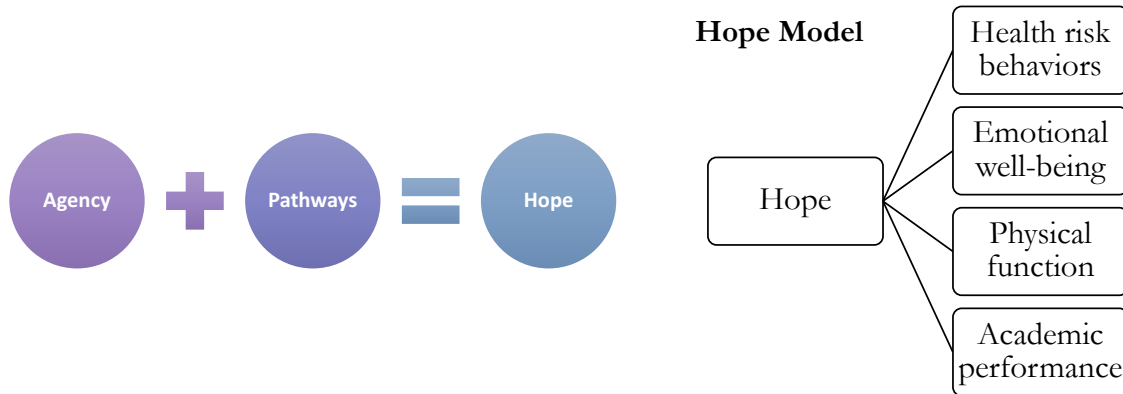
Hope Model

Agency **+** Pathways **=** Hope

Hope → Health risk behaviors

Hope → Emotional well-being

Hope → Physical function

Hope → Academic performance

Hope is defined as "the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways" (Snyder, 2002, p. 249) .

Mediation Model
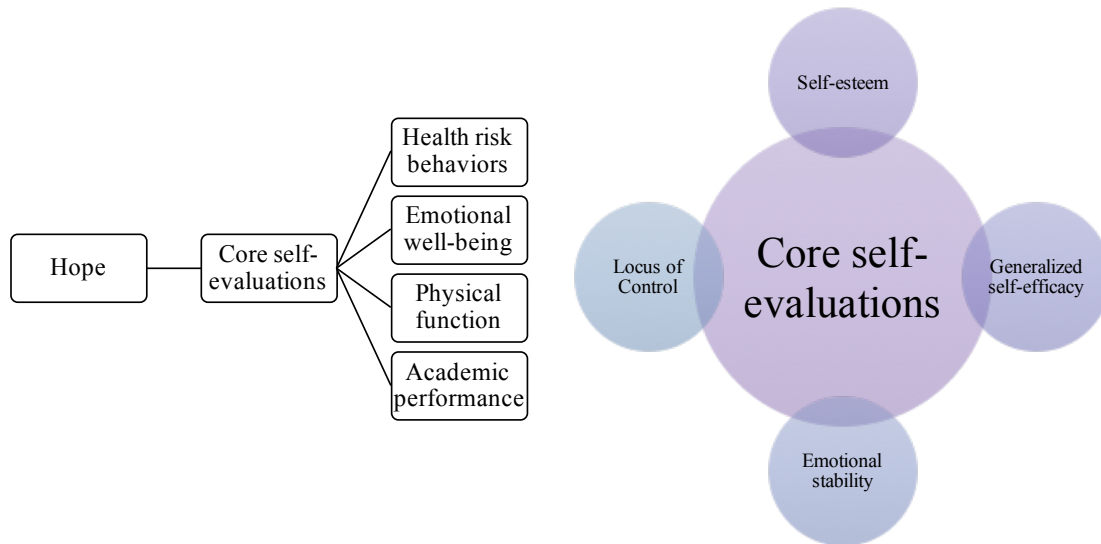
Methods: Procedures

❖ UMMS Institutional Review Board approval
❖ IAA with participating institution

Methods: Design, Sample/Setting

- Online survey, cross sectional
- Freshman ages 18-24
- Large public university
- Power Analysis: 478 path analysis, 450 cases SEM

Enrollment	**Assessed for eligibility** ($n = 4441$)

Pilot	**Random Pilot ($n = 50$)** • Week 1 ($n = 5$, 10%) • Week 2 ($n = 2$, 4%) • Total recruited ($N = 7$, 14%)

Main Study	**Main study ($n = 4391$)** • Time 1 ($n = 301$, 6.8%) • Time 2 ($n = 123$, 2.8%) • Time 3 ($n = 77$, 1.7%) • Total recruited ($N = 501$, 11.4%)

Analysis	**Analyzed ($N = 495$)** • Excluded from analysis ($n = 6$) • Missing data for inclusion criteria, freshman, full time status
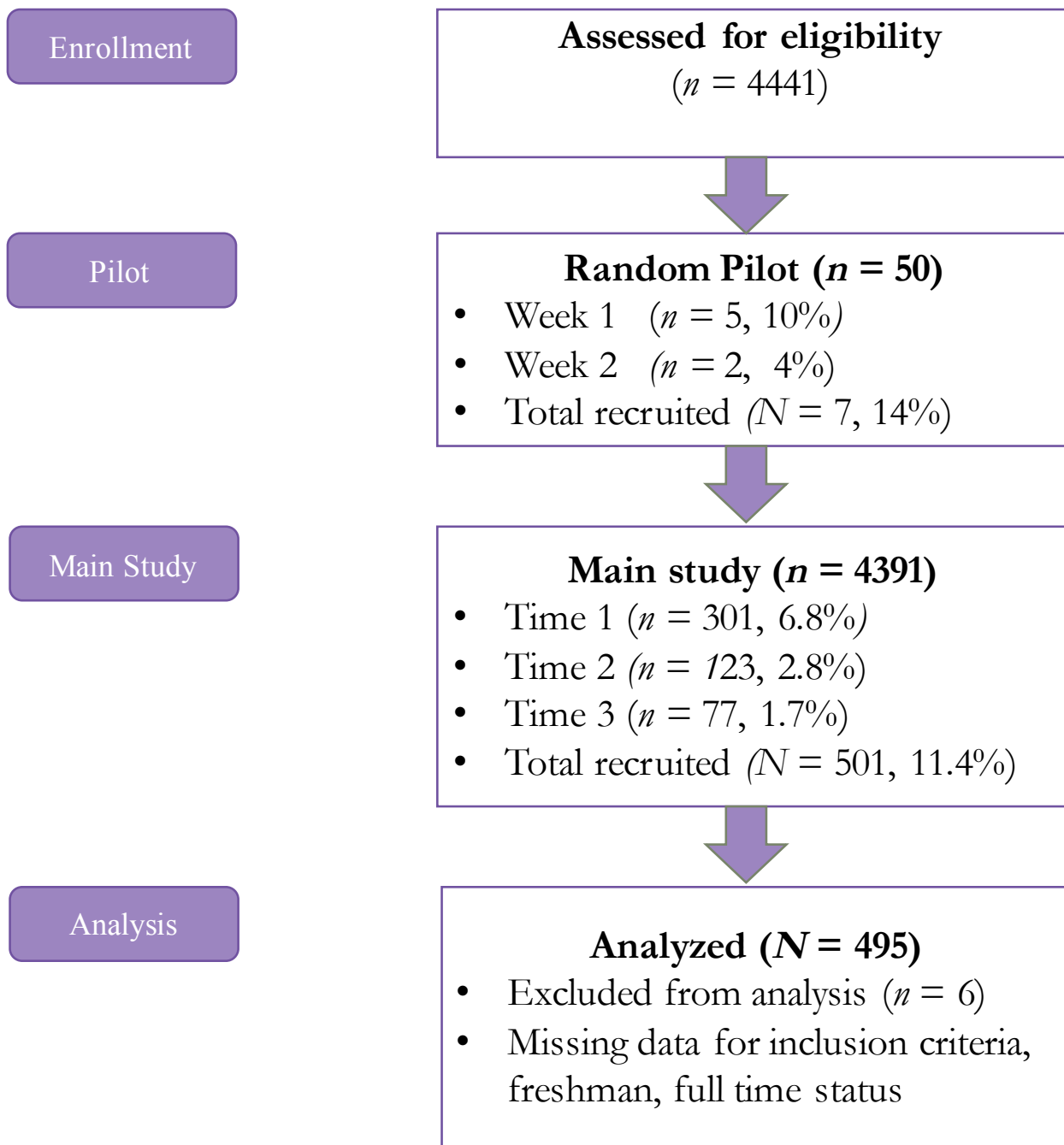
Demographics (N= 495)

Characteristic	N	Mean (SD) or count (%)
Age	494	18.37 (0.535)
Gender	494	
Female		331 (66.9)
Male		161 (32.5)
Other		3 (0.6)
Race/ethnicity	495	
White		344 (69.5)
Asian		80 (16.2)
Hispanic or Latino		26 (5.3)
Other		24 (4.8)
Black or African American		21 (4.2)
Partner Status	489	
Single		461 (93.1)
Living with Partner		23 (4.6)
Married		2 (0.4)
Separated		3 (0.6)
Housing Status	493	
College dormitory		484 (97.8)
Off Campus		5 (1)
With Parent		4 (0.8)
Monthly expenses	493	
Yes		419 (84.6)
No		74 (14.9)

Demographics

Characteristic	*N*	Mean (*SD*) or count (%)
High School Graduation/GED year	495	
2016		413 (86.1)
2015		12 (2.4)
2013		1 (.2)
G.P.A.	433	3.44 (*.51*)
Female	280	3.50 (*.46)*
Male	150	3.35 (*.57*)

General Health Perception (N = 494)

Excellent 17.8; Very good 50.7; Good 25.1; Fair 4.8; Poor 1.4

Academic Performance Satisfaction (*N* = 494)

Not satisfied 16.8; Slightly satisfied 14.9; Moderately satisfied 26.5; Very satisfied 26.1; Extremely satisfied 15.6
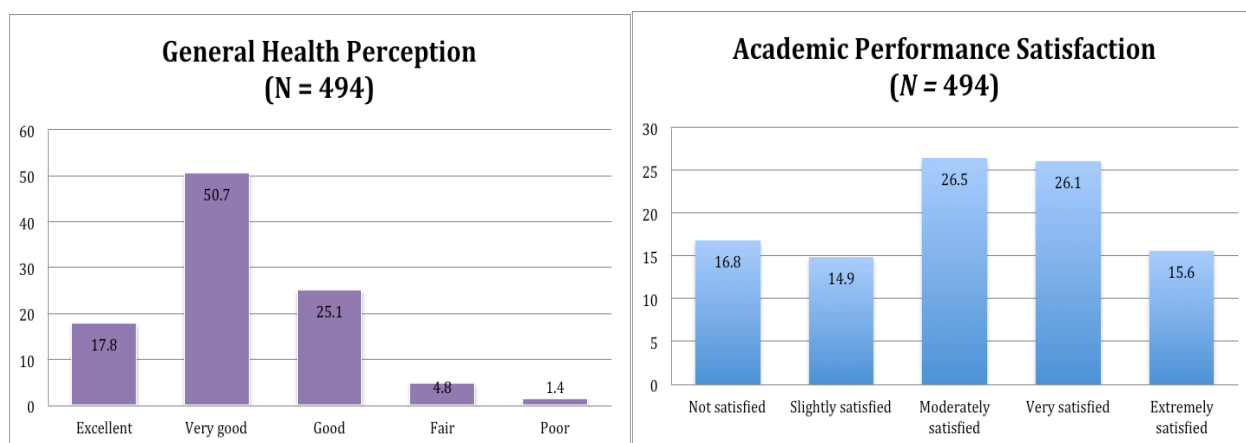
Measures

Scale	Number of items	Response format	N	Mean/Median (SD)	α
Adult Dispositional Hope Scale	8	8-point Likert	484	49.3/50 (7.9)	.871
Core Self-Evaluations Scale	12	5-point Likert	484	41.4/42 (7.7)	.868
Alcohol Use Identification Test (AUDIT-C)	2	5-point Likert	367	3.1/3 (2.2)	.653
Drug Abuse Screening Test (DAST-10)	10	Y/N	171	.79/0 (1.4)	.690
Sexual Risk Taking Scale	8	5-point Likert	403	4.2/1 (6.4)	.930
Physical Function	10	3-point Likert	488	95/100 (12)	.901
Emotional Well-Being	5	6-point Likert	488	62.5/64 (19.2)	.844
Marlowe Crowne Social Desirability	13	T/F	485	6.9/7 (2.7)	.671

Hope

- I energetically pursue my goals

- I meet the goals that I set for myself

- There are lots of ways around any problem

- I can think of many ways to get the things in life that are important to me

Core Self-Evaluations

- I am confident I get the success I deserve in life

- I complete tasks successfully

- I am filled with doubts about my competence

- I am capable of coping with most of my problems

Gender Differences Means *(SD)*

	Men	Women
Core Self-Evaluations ($t = 2.65$, *df* 487, $p = .008$)	**42.78 (7.6)**	40.82 *(7.7)*
Emotional Well-Being ($t = 2.67$, *df* = 487, $p = .008$)	**65.85 (18.6)**	60.92 *(19.4)*
Drug Use ($t = 2.26$, *df* = 247.3, $p = .025$)	**1.37 (2.04)**	.96 *(1.54)*
Alcohol Use ($t = 3.07$, *df* = 267.01, $p = .002$)	**3.57 (2.47)**	2.87 *(2.08)*
Physical Function ($U = 22429.5$, $p = .002$)	**95.91 *(12.1)***	94.56 *(11.9)*
GPA *($t = -2.89$, df = 428, $p = .004$)*	3.35 *(.57)*	**3.50 *(.46)***

*physical function and sexual risk taking (non-parametrics)
*ceiling effect with physical function-not included in multivariate analyses

Differences in Race, Age, & Social Desirability

Race	hope & core self-evaluations emotional well-being physical function sexual risk taking alcohol use drug use	↑ Whites than Asians and Other Blacks, Hispanics, Whites, Asians, Other Asians, Whites, Hispanics, Blacks, Other Whites, Hispanics, Blacks, Other, Asians ↑Whites, ↓ Asians, then Blacks ↑ Whites, Asians
Age	hope	$(r = .097, p = .031)$
Social Desirability	↑ hope ↑ emotional well-being ↑ physical function ↓ lower drug use	$(r = .34, p = .000)$ $(r = .365, p = .000)$ $(rho = .24, p = .000)$ $(r = -.15, p = .001)$

Mediation Model (β statistic, the standardized regression coefficient)
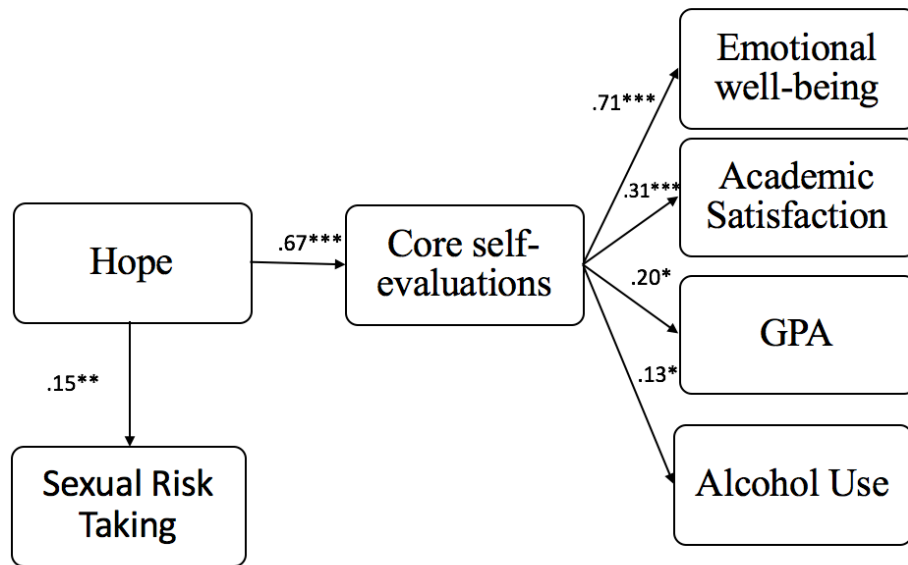
*p < 0.05. **p < 0.01. ***p < 0.001

Hope Model (β statistic, the standardized regression coefficient)

*p < 0.05. **p < 0.01. ***p < 0.001
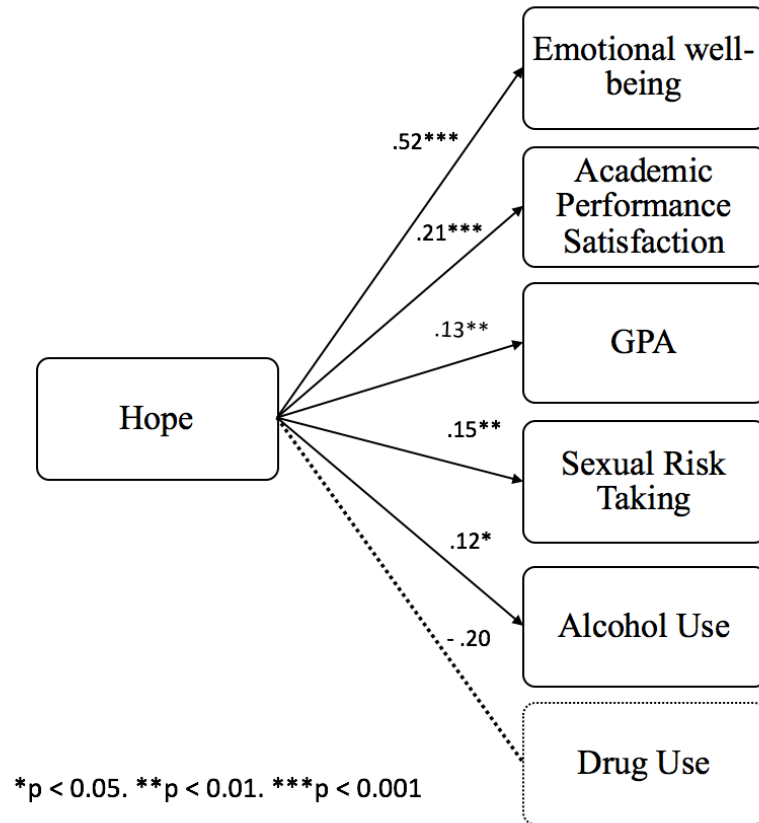
Standardized coefficients
SEM / Baron and Kenney approach

Outcomes	Total Effect of Hope		Direct Effect of Hope		Indirect Effect of Hope	
	β (SE)	p-value	β (SE)	p-value	β (SE)	p-value
Emotional well-being	0.52 (0.03)	<0.0001	0.05 (0.04)	0.2286	**0.47 (0.03)**	**<0.0001**
Sexual Risk Taking	0.10 (0.04)	0.0336	**0.16 (0.06)**	**0.0093**	-0.06 (0.04)	0.1327
Drug Use	-0.03 (0.05)	0.5382	-0.02 (0.06)	0.6827	-0.003 (0.04)	0.9387
Alcohol Use	0.14 (0.04)	0.0022	0.05 (0.06)	0.4446	**0.09 (0.04)**	**0.0227**
GPA	0.14 (0.05)	0.0044	0.002 (0.06)	0.9747	**0.13 (0.04)**	**0.0015**
Academic Performance Satisfaction	0.21 (0.04)	<0.0001	0.01 (0.06)	0.8887	**0.21 (0.04)**	**<0.0001**

*Preacher and Hayes' bootstrapping test gave consistent results

Comments

- Hope and core self-evaluations are important factors →Emotional well-being, and academic performance (GPA and satisfaction) for young adults in their first year of college

- Hope theory is useful for predicting mental health and academic performance

- ↑Hope and CSE → ↑ alcohol risk behaviors

- ↑Hope → ↑ sexual risk taking behaviors

- Hope and drug use not significant

Comments continued

- Interventions to strengthen both hope and core self evaluations
    - Cognitive and behavioral
    - Psychoeducation [1, 2]
    - Cognitive goal mapping (hope and self-efficacy) [2, 3]
    - Hope and self-esteem[4], augmenting coping for low self-esteem [3, 5]
    - Emotional regulation[6] (emotional stability)
    - Encouragement (internal locus of control) [7]

Limitations

- Mostly Caucasian (69.5%)
- Freshman from one public university
- Only two (2) alcohol use items (binge drinking not assessed)
- Physical function not analyzed in multivariate analysis
- Hope did not have a significant influence on drug use

Conclusion

- Hope model with core self-evaluations best for understanding emotional well being and academic performance/satisfaction
- Model less useful for fully understanding health risk behaviors
- Core self-evaluations is key to understanding how hope affects behavioral outcomes and needs to be considered in research and intervention work
    - Hope enhancing interventions less effective/short lived

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Dissertation Committee

❖**Chair:** Carol Bova, PhD, ANP

❖Sybil Crawford, PhD

❖Donna Perry, PhD, RN

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Dissemination Plan

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