Psychological, cognitive, and personal variables that predict college academic achievement among health sciences students ☆

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S U M M A R Y

Background: There are many factors that affect college academic achievement among health sciences students.
Aim: The aim of this study was to examine selected psychological, cognitive, and personal variables that affect students' academic achievement among health sciences college students in Saudi Arabia.
Method: A correlational descriptive cross-sectional design was employed to collect data on the studied variables from 510 health sciences students (Medicine, Nursing, Respiratory Therapy, and Pharmacy Doctor) employing self-administered questionnaire.
Results: Results showed that students experienced low level of self-esteem and low level of student–faculty interaction; and high level of achievement motivation and satisfaction with life. Also, they reported mild levels of depression and stress and a moderate level of anxiety. Female students reported higher level of achievement motivation, depression, anxiety, and stress; while male students reported a higher level of self-esteem. Results also showed that achievement motivation, mothers' educational level, working besides studying, gender, aptitude test score, and depression level were the best predictors of academic achievement and accounting for 43% of the total variance.
Conclusions: Several psychological, cognitive, and personal variables were found to affect college academic achievement among health sciences students. Recommendations and implications to enhance students' academic achievement are discussed.

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Introduction

The importance of understanding the effect of psychological, cognitive, and personal variables on college academic achievement and performance is crucial for both theoretical and practical domains especially for highly academic demanding specialties such as those related to health sciences (Robbins et al., 2004; Elias et al., 2011; Goff, 2011). In their meta-analysis study, Robbins et al. (2004) identified many variables that affect academic achievements such as achievement motivation, academic goals, institutional commitment, social support, social involvement, financial support, high school Grade Point Average (GPA), standardized tests, and demographics. Other researchers such as Cardoso et al. (2011) identified personal and pedagogical variables such as student–faculty interaction and self-esteem. Worldwide, there is a relatively large body of research studies that examine a variety of

predictors of academic achievement among college students. In Saudi Arabia, very few studies examined academic achievements among university students, and those studies examined only the academic achievements with students' stress level (Abdulghani, 2008; Abdulghani et al., 2011). There is no studies conducted in Saudi Arabia to examine the psychological, cognitive, and personal variables that affect academic achievement among health sciences students. Therefore, this study aimed to examine the effect of some selected variables on college academic achievement among Saudi health sciences students. Those examined variables were categorized as psychological (achievement motivation, self-esteem, satisfaction with life, student–faculty interaction, stress, anxiety, and depression), cognitive (high school GPA, achievement test, and aptitude test), and personal (i.e. age and gender).

Psychological Variables

There are many research studies that examined the psychological variables that may affect college students' academic achievement. Among those variables were self-esteem, achievement motivation, satisfaction with life, student–faculty interaction, depression, anxiety, and stress. Achievement motivation is one of the basic ingredients necessary for one's success in achieved settings. Human beings, especially

students, must acquire the significant motivation to achieve their goals. The relationship between achievement motivation and academic achievement is well established in the literature. For example Kaufman et al. (2008) found that motivation is important factor in school success. Amrai et al. (2011) also found a positive significant correlation between academic achievement and academic motivation. When studying three variables of academic motivation (Extrinsic motivation, Intrinsic motivation, and A-motivation), Lavasani et al. (2011) found that those variables influences cognitive learning strategies positively. Olani (2009) also found that the academic motivation is one of the major predictors for academic GPA for both male and female students.

Self-esteem has long been considered as an essential component of good health and drawn researchers' attention on its effect on student academic achievement (Saadat et al, 2012). Self-esteem is a very important psychological multidimensional construct to understand human behavior, especially in the learning domain, and there is no single definition to this concept. Self-esteem according to Rosenberg (1965) is the extent to which individuals value themselves, consider themselves worthy, and expect overtime to grow and improve (Rosenberg, 1965). In other words, self-esteem is the positive and negative attitudes that the individual presents in relation to one's life. Saadat et al. (2012) found a positive relationship between self-esteem and academic achievement, and self-esteem was lower among female students. Also, Pullmann and Allik (2008) found that self-esteem was a strong predictor of school achievement. Satisfaction with life affects academic achievement as well as psychological state of the students (Rode et al., 2005; AllaEddeen and Hamaideh, 2009). Rode et al., 2005 found that satisfaction with life was one of the major predictors of academic achievement even when traditional academic achievement variables controlled. AllaEddeen and Hamaideh (2009) found that satisfaction with life was the first best predictor of university students' depressive symptoms.

Student–faculty interaction is widely heralded as being correlated to a broad range of positive student educational outcomes (Kim, 2010; Cardoso et al, 2011). Students and faculty members are the main agents of socialization in the college, and the interaction between them are thought to contribute to greater student learning and academic achievement. Kim (2010) studied different patterns of student faculty interactions among different racial groups and found that all racial groups have their unique pattern of interaction that affects student outcomes. Also, using a Jordanian nursing student sample, Al-Hussami et al. (2011) found that the interaction between students and faculty members was crucial and significant in relation to students' academic score.

Stress among students comes from different sources such as maintaining academic works, facing a change in education system, changes in life-style and social environment. High levels of stress affect students physically, psychologically and cognitively; therefore, affect student academic achievement (Hojat et al., 2003; Zajacova et al., 2005). Elias et al. (2011) found a moderate level of stress among college students in general and high levels among medicine and health sciences students. However, in a similar sample, Abdulghani (2008) and Abdulghani et al. (2011) found no significant relationship of stress level and academic grades among medical and health science students in Saudi Arabian university students. Also, they found that stress level was higher among female students. Anxiety, which is subjective feelings of tension, apprehension, and worry, is considered one of the major predictors of academic performance. For example, Vitasari et al. (2010) found a significant correlation between anxiety level and academic performance. Also, anxiety disorders affect student withdrawal from the school (Ameringen et al., 2003).

Depression as well as anxiety and stress exhibit a passive attitude in students' life such as lack of interest in learning and poor performance in exams and assignments (Andrew et al., 2008). Depressed students usually exhibit persistent sadness, discouragement, loss of self-worth and interest in daily activities. Depression, therefore, is said to have a negative relationship with academic performance. For example, Busari (2012) found that depression correlated negatively with academic achievement, and that depression level was higher among female students.

Cognitive Variables

Research studies found a positive relationship between cognitive variables of prior college achievement such as high school grades, aptitude test scores, achievement test scores, and other standardized tests scores with college academic achievement (Al-Nasir and Robertson, 2001; Scott et al., 2004; Martin et al., 2006; Newton et al., 2007; Al-Alwan, 2009; Olani, 2009). These variables were used as selection criteria for college admission in most of the higher educational institution all over the world (Al-Alwan, 2009). More specifically, Al-Alwan (2009) found strong correlations between Saudi health sciences students' academic performance and their achievement test scores, aptitude test scores, and high school grade. The Saudi achievement test showed the most significant correlation with academic performance, followed by the aptitude test.

Personal Variables

Personal variables as well as demographic variables are important determinants of college academic achievement (Martin et al., 2006; Green and Celkan, 2011). For example, Olani (2009) found that predictors of academic achievement as measured by university GPA accounted for 29% of the variance among female students, while it account only for 14% of the variance among male students. Also, McCarey et al. (2007) found a difference between male and female nursing students in regard to their academic performance. However, Naderi et al. (2008) found that gender did not predict academic achievement of Iranian students studying in Malaysia.

It can be reasonably assumed that students, who work either full or part-time besides their studying, will leave less time for studying outside classroom and that this will negatively affect their academic influence (Strauss and Volkwein, 2002). However, some studies found no relationship between working and students' academic achievement (Light, 2001). Parents' educational level also plays a role in students' academic achievement. Kaufman et al. (2008) found that mother's educational level was one of the predictors of academic achievement among college students.

Purposes of the Study

The main purpose of this study was to examine the psychological, cognitive, and personal variables that best predict college academic achievement among health sciences students at Al-Maarefa College, Riyadh, Saudi Arabia. More specifically this study aimed at answering the following research questions:

1. What are the levels of achievement motivation, self-esteem, satisfaction with life, student–faculty interaction, depression, anxiety, and stress among health sciences students at Al-Maarefa College?
2. Are there any significant differences in levels of achievement motivation, self-esteem, satisfaction with life, student–faculty interaction, depression, anxiety, and stress between male and female health sciences students at Al-Maarefa College?
3. What are the relationships between the studied variables (psychological, cognitive, and personal) and the current college academic achievement among health sciences students at Al-Maarefa College?
4. What are the variables (psychological, cognitive, and personal) that best predict current college academic achievement among health sciences students at Al-Maarefa College?