

The relationship between academic self-concept, intrinsic motivation, test anxiety, and academic achievement among nursing students: Mediating and moderating effects



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SUMMARY

Background: The impact of cognitive factors on academic achievement is well documented. However, little is known about the mediating and moderating effects of non-cognitive, motivational and situational factors on academic achievement among nursing students.

Purpose: The aim of this study is to explore the direct and/or indirect effects of academic self-concept on academic achievement, and examine whether intrinsic motivation moderates the negative effect of test anxiety on academic achievement.

Method: This descriptive-correlational study was carried out on a convenience sample of 170 undergraduate nursing students, in an academic college in northern Israel. Academic motivation, academic self-concept and test anxiety scales were used as measuring instruments. Bootstrapping with resampling strategies was used for testing multiple mediators' model and examining the moderator effect.

Results: A higher self-concept was found to be directly related to greater academic achievement. Test anxiety and intrinsic motivation were found to be significant mediators in the relationship between self-concept and academic achievement. In addition, intrinsic motivation significantly moderated the negative effect of test anxiety on academic achievement.

Conclusion: The results suggested that institutions should pay more attention to the enhancement of motivational factors (e.g., self-concept and motivation) and alleviate the negative impact of situational factors (e.g., test anxiety) when offering psycho-educational interventions designed to improve nursing students' academic achievements.

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Introduction

Academic achievement is the criterion used to mark students' success in their studies, making it crucial to understand the factors responsible for determining, predicting, mediating, or causing variance in academic achievement (Ahmad and Bruinsma, 2006). Scholars agree that academic achievement and success in college are related to both cognitive skills (e.g., IQ scores, and academic ability) and personal/non-cognitive skills (McEwan and Goldenberg, 1999; Pitt et al., 2014), such as motivational (Guay et al., 2010; Radi, 2013), and situational factors (Rezazadeh and Tavakoli, 2009). The literature shows increasing attention to the understanding of the pathways in which non-cognitive, motivational (e.g., academic self-concept and academic motivation) and situational factors (e.g., test anxiety) impact the student's ability to achieve higher grades (Guay et al., 2010; Pitt et al., 2012; van den Berg and Coetzee, 2014).

The department of nursing where the research was conducted selects its students according to strict academic criteria, as do other colleges. The applicant must score over a certain grade in national cognitive and intelligence tests, and undergo an interview and professional simulations designed to assess potential skills and suitability as a future nursing professional. Nevertheless, many nursing students (about 15%–20%) drop out at the end of the first and second year of study, because of low clinical and/or academic performance. This is not unusual but it does highlight the question, "What factors beyond intelligence are responsible for the variance in the academic achievement of nursing students?" This question might be fully or partially answered by examining the relationship dynamics between motivational and situational factors with academic achievement.

Background

One of the most important variables motivating students and a key to academic achievement is academic self-concept (ASC), a concept studied by many scholars (e.g., Guay et al., 2010; Isiksal, 2010; Marsh, 2007; van den Berg and Coetzee, 2014). Education aims at enhancing

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a positive self-concept, which has been cited as a predictor of success in one's studies (Isiksal, 2010; Sikhwari, 2014). The concept covers a set of the student's attitudes, beliefs and perceptions of one's own intellectual and/or academic skills and performance (Cokley, 2000; Ferla et al., 2009). Several studies have linked academic self-concept to academic achievement, and research results have noted the correlation of a high academic self-concept with high academic achievements (Iroegbu, 2013; Marsh et al., 2005; Sikhwari, 2014; van den Berg and Coetzee, 2014). However, no research has conclusively identified the direction of the association joining the two variables, although self-enhancement theory states that self-concept is a predictor of academic achievement (Calsyn and Kenny, 1977).

Another important motivational variable impacting academic success is academic motivation (Isiksal, 2010; Radi, 2013; van dan Berg and Coetzee, 2014). Various theories have attempted to define motivation and make it operational. The current study examines academic motivation within the context of Deci and Ryan's self-determination theory (1985). The three types of motivation posited by the theory reflect various levels of self-determination, including intrinsic and extrinsic motivation and amotivation (Deci and Ryan, 1985). Intrinsic motivation is the tendency to engage in tasks because one finds them interesting and enjoyable, whereas when engaging in tasks because of unrelated factors such as expected reward or punishment, the individual is said to exhibit extrinsic motivation (Deci and Ryan, 1985; Vallerand et al., 1992).

Generally, studies have found that highly academically motivated students engaged in learning are more likely to achieve better grades and exhibit lower dropout rates (Radi, 2013; Sikhwari, 2014; van dan Berg and Coetzee, 2014). However, each type of motivation (intrinsic and extrinsic) separately may not have the exact same effect on students' performance (Ormrod, 2008). For example, studies of nursing students' motivation and academic achievement showed lower academic achievements by the more extrinsically motivated students, while the more intrinsically motivated a student, the higher the academic achievement (Radi, 2013); amotivation led to poor academic performance (van den Berg and Coetzee, 2014).

Self-determination theory also determined that academic motivation can mediate the association between ASC and performance in college (Deci and Ryan, 1985). When students feel competent when performing academic tasks, they experience an increased drive to succeed in their studies, leading to achieving higher scores on their exams. Some studies confirm the mediating effect, particularly for intrinsic/autonomous motivation (e.g., Ahmad and Bruinsma, 2006; Guay et al., 2010).

Test anxiety is an essential situational variable widely studied in the context of academic achievement (Chapell et al., 2005; Farooqi et al., 2012), defined as "a set of phenomenological, physiological and behavioral responses that accompany concern about possible negative consequences of failure on an exam or similar evaluative situation" (Zeidner, 1998). Spielberger and Vagg (1995) viewed test anxiety as situation-specific rather than an anxiety trait, and stated that individuals with test anxiety are more prone to react with excessive anxiety (e.g., worry, emotional and physiological arousal) during evaluative situations, such as exams. Numerous studies revealed a negative correlation between test anxiety and performance. Thus, high levels of test anxiety disrupt students' attention and concentration, which in turn leads to academic difficulties, low achievements, with delays in completion of the degree or increased chances of being a college dropout (Chapell et al., 2005; Iroegbu, 2013; Rezazadeh and Tavakoli, 2009; Trifoni and Shahini, 2011).

The literature also indicated that test anxiety's impact on students' achievements is markedly varied from one individual to another. It is dependent on personal variables, such as motivation levels (McEwan and Goldenberg, 1999; Radi, 2013). Highly motivated students were less anxious than those with a lower ambition to succeed in their studies (McEwan and Goldenberg, 1999). Based on the nature of

the correlations between test anxiety, motivation and academic achievements reviewed above, we may suggest that intrinsic motivation may moderate the relation between test anxiety and academic achievement.

The literature also showed that test anxiety may also be negatively predicted by academic self-concept (Iroegbu, 2013; Urhahne et al., 2011). Bandalos et al. (1995) demonstrated that ASC can determine the levels of general test anxiety. Consequently, these associations indicate that test anxiety may mediate the relationship between academic self-concept and academic achievement.

Finally, the current research included several background variables found to be related to academic achievement in previous studies (age, gender, ethnicity, year in college) (Farooqi et al., 2012; Pitt et al., 2012; Sikhwari, 2014; Wan Chik et al., 2012).

Previous studies indicated that students' success in studies is influenced by several non-cognitive factors directly and/or indirectly related to academic self-concept, academic motivation and test anxiety. Whereas these previous studies examined a single mediator, the current research suggests examining multiple mediators using a bias corrected and accelerated bootstrapping method (Hayes, 2012; Preacher and Hayes, 2008). Specifically, by simultaneously examining mediators and by determining the strength of each mediator in relation to the others, the current mediator test allows for more complete assessment of the relation between self-concept and academic achievement among nursing students. In addition the moderation effect of academic motivation on the correlation between test anxiety and achievements has not been addressed in nursing education.

Hypotheses

The Mediation Hypothesis

The effect of academic self-concept on academic achievement occurs directly and indirectly simultaneously via two mediators (intrinsic motivation and test anxiety), while controlling for background variables (see Fig. 1 for the Multiple mediator model):

- Higher ASC is associated with higher academic achievement among nursing students.
- ASC is associated with lower test anxiety, which is related to greater academic achievement among nursing students.
- ASC is associated with higher intrinsic motivation, which is related to greater academic achievement among nursing students.

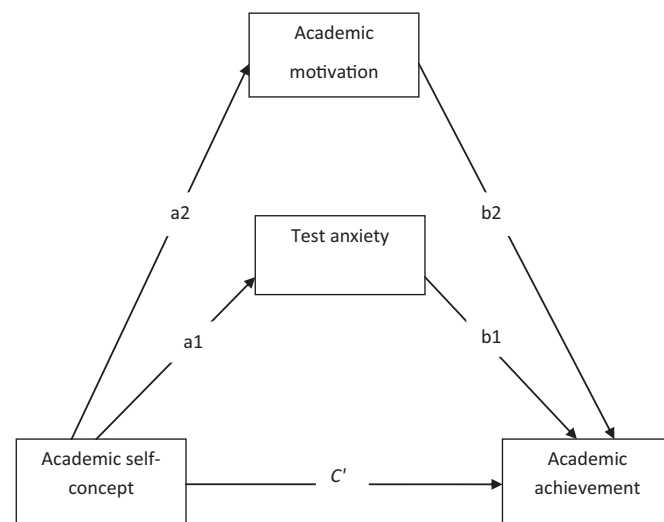


Fig. 1. Multiple Mediator model depicting direct (weight c') and indirect effects (sum of all $a \times b$ weights) of students' academic self-concept on academic achievement, tested in the current study, controlling for confounders.

The Moderation Hypothesis

The relationship between test anxiety and academic achievement differs at different motivation levels, while controlling for background and other variables.

Method

Study Design and Participants

A descriptive quantitative study was conducted among nursing students (from diverse cultural backgrounds), in a 4-year academic program for bachelor's degree in nursing, using a self-administration questionnaire. A convenience sample of 170 of the undergraduate nursing students (71% enrollment rate) from the Zefat Academic College, Israel, was enrolled in the study.

Procedure

The study was approved by the institutional ethics committees and the Research Ethics Committee of the college at which the research took place. Participants gave written consent and received an explanation of their right to withdraw at any time without academic penalty. Strict confidentiality was maintained.

All instruments were translated into Hebrew by two bilingual translators via the translation\back-translation process as recommended by Brislin (1970). This procedure continued until the two bilingual translators agreed that the two versions of the instruments were identical, with no discrepancies in meaning. The complete questionnaire underwent a pilot test on 20 different students from another college program. The questionnaire took approximately 20 min to complete, the written and verbal instructions were comprehensible, and there was no need for further changes prior to administering the questionnaire.

Measures

Background Variables

The self-reported background data comprised age, gender, ethnicity, and academic year. Ethnicity included: Jewish and Arab. Years of study included first through fourth year of the nursing study.

Dependent Variable

Students' academic achievement is an important indicator of academic success at the university level (Ahmad and Bruinsma, 2006). The grade average from all courses and clinical practice was considered as the measure of academic achievement in the current study. Students' grades were obtained from their college records (with permission).

Academic Self-concept

Academic self-concept was measured using the Academic Self-Concept Scale (ASCS) (Reynolds, 1988), a 40-item index of the academic component of college students' general self-concept. The ASCS comprised one global score and seven subscale scores: final grade and effort; study habits; peer evaluation of academic ability; self-confidence in academics; satisfaction with college; self-doubt regarding ability; and self-evaluation with external standards. The instrument uses a Likert-type scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). Internal consistency (Cronbach's alpha) for the ASCS was reported as .91; and the scale's convergent validity was also documented (Reynolds, 1988). Sample items include, "If I try hard enough, I will be able to get good grades" and "I often expect to do poorly on exams." Responses for the negative items were reverse-coded, then the mean scores were calculated; high scores reflected a higher academic self-concept.

Test Anxiety

Test anxiety was measured by the Hebrew version of the Test Anxiety Inventory (TAI) developed by Spielberger (1980) and translated into Hebrew by Zeidner and Nevo (1993). The instrument comprises 20 items providing a total test anxiety score, and separate scores for worry and emotionality components. Each item on the TAI is followed by a 4-point Likert scale from 1 ("hardly ever"), to 4 ("almost always"). Examples of the items are, "When I take a test, I feel uncomfortable and am not calm," and "I am so tense during an important exam that I get stomach pains." A high average score shows a high level of test anxiety ($\alpha = 0.91$).

Intrinsic Academic Motivation

The academic motivation scale was used to assess academic motivation among college students (AMS; Vallerand et al., 1992). The 28-item AMS assesses three motivational orientations: intrinsic motivation, extrinsic motivation and amotivation. The scale asks, "Why do you go to college"? with possible answers ranging across a seven-point Likert type scale from 1 ("does not correspond") to 7 ("corresponds exactly"). In this study we used the 12-item intrinsic subscale. An example is, "For the pleasure I experience while surpassing myself in my studies." The original overall AMS has satisfactory levels of internal consistency (alpha of 0.81), and constructive validity that confirmed its seven-factor structure (Vallerand et al., 1992). A high average score shows a high level of intrinsic academic motivation.

Data Analyses

Descriptive statistics were applied to the background and study variables ($p < .05$). Next, associations between the independent variable, dependent variable, mediators, and control variables were conducted using the Pearson correlation test. Multiple mediator analyses were then computed in which the two selected mediators (test anxiety and academic motivation) were entered simultaneously to test the components of the mediation model using the bootstrapping method to assess the indirect effects of the mediation model (Hayes, 2012; Preacher and Hayes, 2008). Thus, the multiple mediation model was examined by directly testing the significance of the indirect effect of the independent variable (IV; Academic self-concept) on the dependent variable (academic achievement) through the two selected mediators described above. They were then quantified as the product of the effects of the independent variable on the mediators (path *a*) and the effect of the mediators on the dependent variable. This partialled out the effect of the independent variable (path *b*) (see Fig. 1), while controlling for background variables that were identified earlier as significant in the bivariate analyses.

This method is based on regression analysis, calculating the direct effect (weight *c'*, with mediators), total effect (*c*, without mediators) and indirect effects (*a* × *b* weights) of an independent variable on a dependent variable. The total and specific indirect effects were calculated through bootstrapping set at 5000 samples. Confidence intervals were calculated using this method by sorting the lowest to highest of these 5000 samples of the original dataset, yielding a 95 percentile confidence interval (if the number 0 falls within the confidence intervals, the tested effect would be non-significant). The indirect effect further calculates contrast between mediating variables in a multiple mediation model, allowing us to test differences in the extent to which one variable mediates the relation between academic self-concept and academic achievement as compared to other mediators included in the model.

The moderation hypotheses were then tested using the bootstrap moderation method as described by Hayes (2012). This method calculates the conditional effect of test anxiety on academic achievement variables at different values (−1 SD, mean, +1 SD) of the moderator (intrinsic motivation), through bootstrapping, set at 5000 samples. All analyses were run using SPSS 20.0 with PROCESS statistical program (Hayes, 2012).

Table 1
Pearson correlations between study variables ($N = 170$).

Variables	1	2	3	4
1. Academic achievement	1.00			
2. Academic self-concept	0.53***	1.00		
3. Test anxiety	-0.37***	-0.23**	1.00	
4. Intrinsic academic motivation	0.58***	0.32***	-0.20*	1.00

* $p < .05$.
** $p < .01$.
*** $p < .001$

Results

The majority of the students in the present sample were females (71.2%). About 83% of the students were Arab. Students' ages ranged from 18 to 35, with an average age of 21, and a small standard deviation. Slightly more than half were in the first year of study (57.1%), followed by second year (26.5%), and third and fourth years (16.4%).

The internal consistency reliability of the scales was examined (pre- and post-test) using Cronbach's alpha. The pre-test (pilot) of Academic Self-Concept (ASC), Intrinsic Academic Motivation (IAM), and State-Trait Anxiety Inventory (STAI), yielded an acceptable alpha of 0.78, 0.80, and 0.84 respectively. The post-test reliability analyses also yielded a high level of Cronbach's alpha for ASC ($\alpha = 0.90$), and IAM ($\alpha = 0.85$), and STAI ($\alpha = 0.91$).

Table 1 presents the bivariate correlation matrix between the study variables. An examination of the correlations reveals that academic self-concept and academic motivation were positively correlated, while each was positively linked with academic achievement, i.e., the higher the level of academic self-concept and striving to succeed, the higher the academic achievement. Test anxiety was negatively correlated with academic achievement, self-concept and academic motivation, i.e., the higher the level of test anxiety, the lower were academic achievements, self-concept and motivation.

Mediation Analyses

Table 2 shows the results of the multiple mediation model (Fig. 2) in which all of the two mediators (test anxiety and academic self concept) were entered simultaneously, allowing investigation of the indirect effects of each mediator, while controlling for the effect of other mediators and significant confounders (gender and ethnicity). Results indicated a significant total effect of academic self-concept on academic achievement ($path\ c$) ($B = 9.2, t(170) = 15.6, p < .001; R^2 = 0.62$).

The results revealed that ASC was positively associated with intrinsic motivation ($path\ a2$), and, in turn, intrinsic motivation was positively associated with academic achievement ($path\ b2$). However, academic self-concept was found to be negatively associated with test anxiety ($path\ a1$), and, in turn, test anxiety was negatively associated with academic achievement ($path\ b1$). The results from bootstrapping yielded a significant total indirect effect of the both mediators ($B = 2.3, 95\% CI = 1.3, 3.5$). The results reveal significant indirect effects of academic self-concept on academic achievement through intrinsic motivation and test anxiety. In addition, the results indicated that self-concept still had a significant direct effect on achievement in studies (c') even after controlling for all mediators and confounders, thus suggesting that intrinsic motivation and test anxiety partially mediated the relations between academic self-concept and academic achievement. However, pairwise contrasts indicated that the mediating effect of intrinsic motivation was statistically stronger than that of test anxiety.

In addition, it was also discovered that gender had a statistically significant effect on academic achievement ($B = -2.3; F(170) = -1.45, p < .05$), with female students performing better academically than male students. However, no significant difference was found in academic achievements between Arab and Jewish students.

Table 2
Summary of multiple mediator model analyses using 5,000 bootstraps ($N = 170$).

Control and background variables	Independent variable	Mediating variables	Dependent variable	Effects of control and background variables on DV	Effect of IV on Med	Effect of Med on DV	Direct effect	Indirect effect	Total effect	Variance
Controls	(IV)	(Med)	(DV)		(bath a)	(bath b)	(bath C)	(a × b)	(C)	R ²
Ethnicity	Academic self-concept	Test anxiety	Academic achievement	-1.8	-0.35***	-1.03*	6.9***	0.36	9.2***	0.68
Gender	Intrinsic motivation	Intrinsic motivation		-2.2*	2.6***	6.9***		1.95		

* $p < .05$. ** $p < .01$. *** $p < .001$.

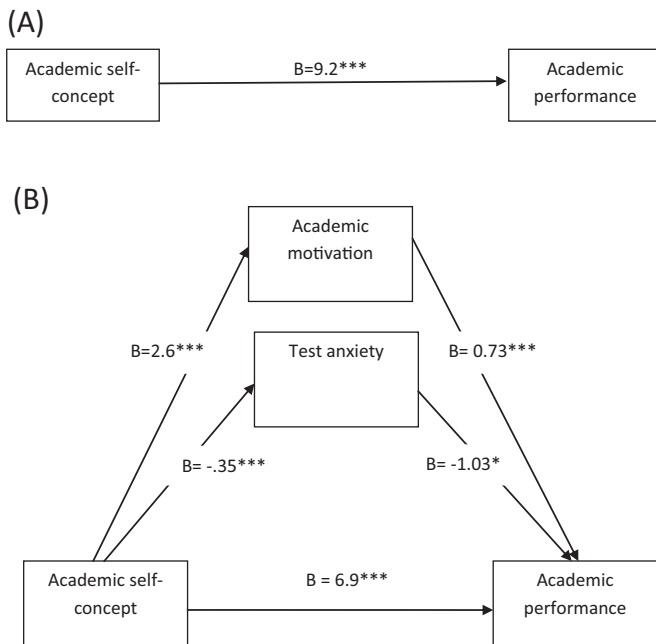


Fig. 2. Multiple Mediator model depicting direct and indirect effects of academic self-concept on academic achievement tested in the current study, controlling for background variables. Notes: Graphic A depicts the total effect of academic self-concept on academic achievement. Graphic B depicts the direct effect of academic self-concept on academic achievement after including mediators. Values represent unstandardized regression coefficients. * $p < .05$. ** $p < .01$. *** $p < .001$.

Moderation Analyses

The moderation analysis with 5000 bootstrapping was performed to assess whether intrinsic motivation interacts with test anxiety to predict academic achievement, controlling for student's gender, ethnicity, and academic self-concept. The overall regression was statistically significant [$F(170) = 80.06, p < 0.001$] with 69% of the academic achievement variance being explained. The result showed that academic achievement was significantly related to academic motivation [$B = 0.77, t(110) = 4.8, p < 0.001$], test anxiety [$B = -1.1, t(110) = -1.6, p > 0.05$], and to test anxiety–motivation interaction [$B = 0.38, t(110) = 2.0, p < 0.05$].

This analysis revealed that the effect of test anxiety on academic self-concept was significant at the low level (-1 SD) of motivation, but not when the motivation was at the mean and at the high levels ($+1$ SD). Evidence for moderating effect of motivation is also provided visually in Fig. 3. The graphic representation of the interaction between academic motivation and test anxiety shows that the slope of the negative relationship between test anxiety and academic achievement is not significant for students with medium and high levels of motivation. The statistically significant interaction between motivation and test anxiety indicated that the negative relation between test anxiety and academic achievement was stronger at lower academic motivation, and not significant at medium and higher academic motivation.

Discussion

The objective of this study was an examination of the evidence for the multiple mediation model of the pathway from academic self-concept to academic achievement among nursing college students. First, as expected, there was a significant direct relationship between academic self-concept and academic achievement. As discussed earlier, the more a student feels positive about one's ability and accomplishments, the higher the achievement. This finding is consistent with numerous studies (e.g. Cokley, 2000; Iroegbu, 2013; van den Berg and Coetzee, 2014) which explored such relationships.

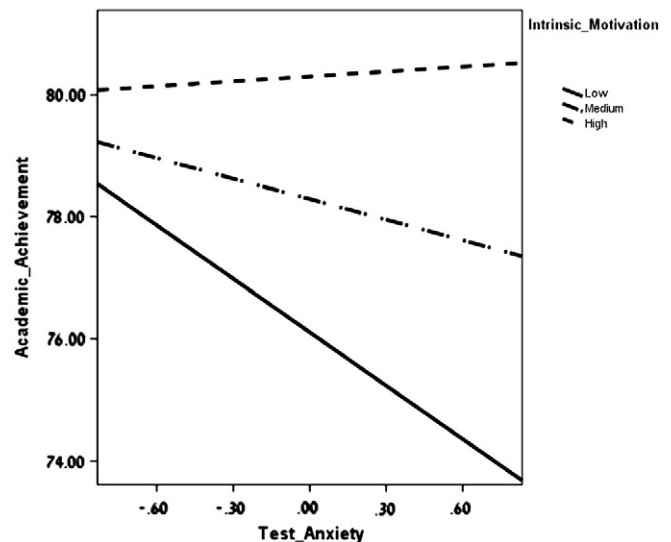


Fig. 3. Relationship between test anxiety and academic achievement at different levels of student's motivation, controlling for gender, ethnicity and self-concept.

Furthermore, we found an indirect explanation consistent with the hypotheses for the relationship between academic self-concept and academic achievement through two mediators (intrinsic motivation and test anxiety). In other words, students who perceived themselves as academically competent obtained higher grades and performed better, because their ASC led them indirectly to have higher intrinsic motivation and/or to be less anxious during exams. These results suggest that the research findings confirm the hypothesis that motivational factors (intrinsic motivation) and situational factors (test anxiety) were key variables explaining the pathway between academic self-concept and academic achievement. These findings are also consistent with the self-determination theory (Deci and Ryan, 1985) and previous studies which examined the mediating effects of motivational (Ahmad and Bruinsma, 2006; Guay et al., 2010) and situational factors (Iroegbu, 2013; Urhahne et al., 2011) between academic self-concept and academic achievement. Whereas these previous studies examined a single mediator, particularly unique for this study is the examination of multiple mediators using a bias-corrected and accelerated bootstrapping method (Preacher and Hayes, 2008).

Beyond the mediating effects just discussed, both mediators were revealed as significant predictors of academic achievement. As expected, intrinsic motivation was positively associated with academic achievement, i.e., the higher the student's motivation to perform academic tasks, the higher grades they student would achieve. Previous studies and theories have shown that students' motivation determines their success in college (Radi, 2013; van dan Berg and Coetzee, 2014). The current research results are consistent with findings by Radi (2013) who reported that nursing college students who are intrinsically motivated perform and achieve higher results than less motivated students.

The results also showed a negative relationship between test anxiety and academic achievement, consistent with results from previous studies (Chapell et al., 2005; Farooqi et al., 2012; Iroegbu, 2013). All reached the conclusion that academic achievement and test anxiety levels have a reverse ratio. This means that as test anxiety levels increase, academic achievement decreases, and vice versa. The results of this study suggested that stressful events such as exams, high intensity of study and practical clinical training along with academic courses, can be a major factor leading nursing students to poor academic achievement. There is certainly no doubt that under this intense pressure, the student is very likely to be disorganized and make mistakes, which invariably translates to poor academic performance.

Yet the results also found a moderating effect of intrinsic motivation in the relationship between test anxiety and academic achievement. That is, for students with high intrinsic motivation, a greater level of test anxiety did not decrease the student's achievement. This moderating effect could further protect against dropping out, as students with high intrinsic motivation seem to be less susceptible to the detrimental effects of test anxiety than those with low levels of intrinsic motivation. This suggests that intrinsic motivation may reduce the vulnerability associated with test anxiety and ease the negative effects associated with it (McEwan and Goldenberg, 1999). Students with high intrinsic motivation may feel that they can control their emotional and worry responses to stressful situations such as exams. These results indicated the vital role of the personal, non-cognitive, motivational and situational factors for students' achievements and performance.

Referring to the relationship between academic achievement and background variables, we found that gender was significantly related to academic achievement among nursing students. Female students achieve better grades than male students. This finding supports previous studies in the nursing field asserting that female students perform better than male nursing students (Wan Chik et al., 2012). A possible explanation for this result may relate to other variables common to gender and achievement, such as intrinsic motivation. Indeed, previous studies (McEwan and Goldenberg, 1999; Sikhwari, 2014) and additional analysis showed that female students were more internally-oriented and motivated than male students, and therefore obtained higher grades. Maybe female students achieve higher grades than males because they have better study skills or because they work harder or have a more adaptive approach to learning tasks, and attend class more frequently. Further research is recommended to understand the reason for the gender differences in academic achievement among nursing students.

Despite the study's strengths, a few limitations should be noted. The first is its cross-sectional design, which does not allow confirmation of causal inferences about the association between the independent variables and academic achievement. The second limitation is the single site and non-random selection of the convenience sample; it may be difficult to generalize the results beyond this population, and it may not be representative of other nursing students from other colleges and universities. Despite these limitations, however, the present study provides initial insights into the mechanisms of the correlation between academic self-concept, test anxiety, academic motivation and academic achievement among nursing students, which has not been widely studied in this context thus far.

Conclusions

The current research findings indicated that the relationship between academic self-concept and academic achievement can be directly and/or indirectly mediated simultaneously by two mediators: intrinsic motivation and test anxiety. Furthermore, the results revealed that intrinsic motivation moderated the negative effect of test anxiety on the student's achievement. These findings emphasize the importance of the motivational and situational factors for students' success via different mechanisms, particularly in nursing students, because nursing education is a highly intensive field of study, with stressful situations comprising exams, clinical training at a simulation laboratory and work in a hospital setting. The student must work and study, following a specific and well-defined path towards the professional license.

Implications for Nursing Education

The following are several recommendations based on the findings of the study: nursing faculties should take these motivational and situational factors into consideration in designing intervention programs designed to improve learning outcomes, and decrease dropout rates among nursing students. To this end, nursing educators should focus on motivational strategies to involve students in academic activities

for improving their overall performance. Furthermore, they should create programs to teach students effective learning strategies for reducing test anxiety and optimizing exam preparation as an integral part of whatever they do in student-educator interactions. In addition, students should be provided with sufficient emotional and academic support, and should be exposed to positive self-concept and motivational enhancement programs. Further research may be conducted on developing programs to enhance self-concept and increase motivation.

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