

# Correlates of Resilience among University Students

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**Abstract Background:** The growing focus on health promotion and wellbeing provides an opportunity to investigate the role of resilience in health. **Aims:** To identify the relationship between resilience, depressive symptoms, and perceived social support among university students in Jordan. **Methods:** a descriptive correlational design utilized to collect data collected using self-reported questionnaire from 480 university students from two private and two public universities in Jordan. Data collected in regards to resilience, depressive symptoms, and perceived social support. **Results:** The results showed that 50% of the university students in this study had moderate to high level of resiliency, 70% had certain degree of depressive feeling, and about 50% had had high level of perception of social support from family, friends, and others. The findings also showed that depression ( $\beta = -.51, p < .001$ ) and perceived social support from friends ( $\beta = .18, p < .001$ ) were significant predictors of resilience. **Conclusions:** Mental health professionals need to enhance resiliency and perceived social support system among university- aged individuals. In their periodic assessment, mental health professionals have to screen students for risk behaviors and psychosocial health indicators such as resilience, depressive symptoms, sources of perceived social support and life styles.

**Keywords:** resilience, depression, social support, university students, jordan

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## 1. Introduction

Assessment of individual's mental health is an important aspect of health promotion. During the last decades, university students became a target population for research studies due to the increase risk to mental and psychosocial problems. Previous studies showed that university students come to universities overwhelmed with economical demands, and suffer from psychosocial and mental health problems (Russell & Topham, 2012). According to Kirtzow (2003), university students seem to come to colleges unprepared to manage complicated life stressors that they are expected to confront during their university life. This increased the risk to psychosocial and mental disturbances that includes impaired social functioning and depressive feeling (Hamdan-Mansour, Dardas, AbuIsbaa, & Nawafleh, 2012; Hamdan-Mansour, Halabi, & Dawani, 2009).

Recently, resilience became an interesting topic for researcher in the field of youth mental health. Resilience refers to person's ability to resist stress and bounce back to normal homeostasis state (Werner, 2004). Evidence

suggests that resilient people have better mental health status, and provides individuals with all required qualities that enable them to successfully confront the new challenges and difficulties in their lives (Buckner, Mezzacappa, & Beardslee, 2003; Connor, & Davidson, 2003; Cuomo, Sarchiapone, Giannantonio, Mancini, & Roy, 2008). The literature showed that perceived social support has positive impact on resilience, and that resilience is a strong protective factor against depression (Fredrickson, 2003, Bonanno, Galea, Bucciarelli, & Vlahov, 2007). While resilience indicates a positive mental health status, individual's mental health is also influence by other components such as perceived social support and depressive symptoms. According to Cohen, Gottlieb and Underwood (2000), perceived social support influences mental health through the stress-buffering model enabling individuals to redefine the potential for harm posed by a situation and cushions one's perceived ability to cope with imposed demands, thereby preventing a particular situation from being perceived as stressful. Moreover, previous studies showed that depression among college students resulted in poor social relationships and mental dysfunctions (Haynes, 2002; Hojat & Lyons, 2000).

Life styles such as caffeine and tobacco use considered important factors that may reveal and influence psychological wellbeing of university students. In a previous Jordanian studies (Hamdan-Mansour, & Marmash, 2007), it was found that 13.5% of the sample were constant cigarette smokers, 68% coffee drinkers, 80% were tea drinkers (Hamdan-Mansour, Dardas, Nawafleh, & AbuIsbaa, 2012). Caffeine and tobacco has also been associated negatively with life satisfaction and perceived social support from friends (Hamdan-Mansour, et al., 2012).

The growing interest in mental health promotion and wellbeing provides an opportunity to investigate the role of resilience and its correlates in health (Connor, & Davidson, 2003). However, little is known about the factors that increase resilience among young population, particularly the college-aged students. Therefore, this study came to address this issue and to investigate the interrelationship between resilience, depressive symptoms and perceived social support among a group of population considered at high risk for mental and psychosocial disturbances. The *purpose* of this study was to examine the relationship between resilience, perceived social support, and depressive symptoms among university students in Jordan. The research questions were:

- What is the relationship between resilience, depressive symptoms, and perceived social support among university students in Jordan?
- Is there a difference in resilience, depressive symptoms, and perceived social support among university students in relation to selected demographic and personal characteristics?
- What is the prediction power of depressive symptoms and perceived social support for resilience among university students in Jordan?

## 2. Method

This is a descriptive correlational study. Data was collected using self-administered questionnaire in regards to resilience, perceived social support and depressive symptoms.

**Sample and setting:** Four hundreds and eighty university students filled and returned a battery of three self-reported questionnaires. Convenience sampling techniques has been used in this study. Students were invited to participate in the study used students announcement board. The students represented two governmental and two private universities selected randomly among all universities in Jordan. In Jordan, there are 10 governmental universities and 14 private universities. Most of these universities are allocated in urban areas and students are coming from different geographical and socio-economic classes. Inclusion criteria were: (1) Student enrollment at a Jordanian university, and (2) ability to read and write in Arabic. There were no exclusion criteria to maximize the participation and variation of participants.

### 2.1. Data Collection Procedure

Prior to data collection, ethical approval from research committee at the Faculty of Nursing and the targeted

universities was obtained. The participants were recruited through an advertisement placed on the announcement boards at the target universities. The announcement included contact information for those interested in the study. They were either asked to call the principal investigator or directed to the coordinator office at his university where a research assistant was available to provide them with a self-stamped envelope and the questionnaires. The research assistant was their also to have all students' questions answered. Students were informed that the study is anonymous where that they do not have to mention their names or any identifiable information on the questionnaires. Also the students informed that their participation is voluntarily and they have the right to withdraw any time during the study without any direct or indirect influence. The package introduced included three self-report questionnaires with a front page presenting the purpose of the study, its significance, and a note confirming the anonymity and confidentiality of the study. The cover letter also included contact information of the principal investigator for any question. One thousands packages were distributed and 480 were returned with a 48% response rate. Subject's information kept confidential by the investigator. All projects' electronic versions were kept in the primary investigator's computer.

### 2.2. Instruments

Data was collected using an Arabic version of the instruments. Numbers of procedures were used to determine the reliability and validity of the instruments. The instruments were first translated into Arabic language by a research assistant and back translated into English language by another independent research assistant as described by Brislin (1970) and Chapman and Carter (1979). The two research assistant had the experience in the field and had at least a master degree in the field of psychiatric nursing. The two English forms (the original and the translated) were compared in terms of conceptual rather than literal meaning of the items. The translator and the back translator met to examine the differences in the two forms. Pilot testing was conducted using university students from health colleges ( $n = 15$ ) who are bilingual requesting their appraisals for the appropriateness of the translation and to evaluate readability and comprehension of the scales. The scales have been also checked for cultural variation. No significant corrections needed. The instruments are:

**Resilience** was measured using Connor and Davidson's Resiliency Scale (CD-RISC) (Connor & Davidson, 2003). CD-RISC comprises 25 items on which respondents rate themselves on a score that ranges from 0 to 4. Higher scores on the scale indicate greater resilience. Good evidence on the reliability and validity of the scale has been reported with Cronbach's alpha of .89 (Singh and Yu, 2010). In this study, Cronbach's alpha was .79.

**Perceived social support** was measured using Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). This scale is 12-item self-reported scale assesses perception of social support adequacy from the family, friends, and significant others. Each item is measured using a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly

agree). The scale has three subscales, family, friends, and significant others. The higher the score is the higher the perceived social support. This scale had good internal consistency with Cronbach's alpha of .89. In this study, Cronbach's alpha was 0.81 for PSS-Fr, 0.84 for PSS-Fa, .78 for PSS-other.

**The Beck Depression Inventory-II (BDI-II)** was used to assess patients' depressive symptoms (Beck, Steer, & Brown, 1996). This instrument contains 21 questions answered on a four-point Likert scale in which 0 represents the absence of symptoms and 3 represents an extreme problem. The total score ranges from 0 to 63 and the standard cutoff points are: 0-13 indicate no or minimal symptom, 14-19 indicates mild symptoms, 20-28 indicates moderate symptoms, and 29-63 indicates severe symptoms (Beck, Steer, & Brown, 1996). A score of 13 is the cut-off point indicating depression. The test-retest  $r$  was .88, and Cronbach's Alpha is .87 (Beck, Steer, & Brown, 1996). In this study, Cronbach's Alpha was .85.

**Demographic profile:** information such as gender, age group, student's faculty, university academic year, working status, and sources of perceived social support; in addition to life styles (number of cups of tea per day, number of cups of coffee per day, and number of cigarettes per day), were obtained from an investigator-developed checklist.

### 2.3. Analysis Plans

Resilience, perceived social support and depression described using the central tendency measures (means, and medians) and the dispersion measures (standard deviation and ranges). Pearson correlation Coefficient (Pearson  $r$ ) used to test the correlation between selected factors and indicators. The  $t$ -test for two-independent samples used to test for differences in resilience, perceived social support and depression among university students in relation to selected demographic and personal factors.

To examine whether depression, perceived social support are significant predictors of resilience, controlling for the selected life styles (drinking coffee, drinking tea, and smoking cigarettes) and selected demographic characteristics (age, gender, and students' faculty), two-steps multiple hierarchical regression analysis was performed. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity,

multicollinearity and homoscedasticity. The Two-step multiple hierarchical regression analysis was used to identify the optimal set of predictors for the resilience variable. Demographic variables (age, gender, and student's faculty) and life styles (number of smoked cigarettes per day, number of cups of tea consumed per day, and number of cups of coffee consumed per day) were entered into the model 1, and predictors (perceived social from family, perceived social support from friends, perceived social support from others and depression) entered in block two using alpha 0.05.

## 3. Results

### 3.1. Demographics and Life Styles

The sample consisted of 480 university students. Of the sample 277 (57.8%) were from public university and 229 (47.8%) came from private universities. Of these, 192 (36.9%) were males and 328 (63.1%) were females. The mean age for the students was 19.9 (SD = 1.3). About 28.7% ( $n = 149$ ) of the students were enrolled in scientific faculties, while 32.5% ( $n = 169$ ) were enrolled in health sciences faculties, and 30.8% ( $n = 142$ ) came from humanistic faculties. Of the sample, 12.3% ( $n = 64$ ) of the students were cigarette smokers. Most of the sample (83.3,  $n = 375$ ) were tea drinkers (Mean = 2.0 cups/day, SD = 2.4), while 45.6% ( $n = 203$ ) were coffee drinkers with mean of 1.1 cups/day (SD = 1.6).

### 3.2. Resilience

The analysis (see Table 1) showed that the mean score for resilience was 69.7 (SD = 13.3) with students' scores ranging from 9 to 100. About 25% of the students had a score of 62 or less and 25% of them had a score of 79 or above. This means that 50% of the students' scores on resilience scale are between 62 and 79 indicating that most students had moderate to high level of resiliency. Moreover, the analysis showed that there was significant and negative correlation between resiliency and number of cup of coffee consumed per day ( $r = -.13$ ,  $p = .015$ ). While there were no significant differences or correlation between resilience and students age, gender, number of cup of tea consumed per day, and number of smoking cigarettes per day ( $P > .05$ ).

**Table 1. Descriptive statistics of resilience, depression and perceived social support among university students in Jordan (N = 480)**

Variable	Mean	SD	Min	Max	P <sub>25</sub>	P <sub>50</sub>	P <sub>75</sub>
Resilience	69.7	13.3	9	100	62	71	79
Depression	18.2	10.8	0	55	10	16	23
PSS-Fr	20.6	5.7	4	28	18	22	25
PSS-Fa	21.8	5.8	4	28	19	23	26
PSS-others	22.3	5.8	4	28	19	24	27

PSS-Fr: Perceived social support from friends

PSS-Fa: Perceived social support from family

PSS-others: Perceived social support from others

### 3.3. Depression

The mean score for depression was 18.2 (SD = 10.8) with students' scores ranging from 0 to 55 (see Table 1). About 50% of the sample had a score of 16 or less. Based on the cutoff points of the depression scale, 47.5% ( $n = 228$ ) were considered not depressed, 18.7% ( $n = 97$ ) had mild depression, 17.1% ( $n = 89$ ) had moderate level of

depression, and 12.7% ( $n = 66$ ) had severe level of depression. The results indicate that the majority of the students (70%,  $n = 286$ ) had certain degree of depression. Moreover, the analysis showed that there was significant and positive correlation between depression and number of cup of tea consumed per day ( $r = .11$ ,  $p = .03$ ) and number of cups of coffee consumed per day ( $r = .22$ ,  $p < .001$ ). While, there were no significant differences or

correlations between depression and students age, gender, and number of smoking cigarettes per day ( $P > .05$ ).

support and age, number of cups of tea consumed per day, and number of smoked cigarettes per day.

### 3.4. Perceived Social Support

In regards to perceived social support, the analysis (see Table 1) showed that mean score for perceived social support from family (PSS-Fa) was 21.8 (SD = 5.8), for perceived social support from friends (PSS-Fr) was 20.6 (SD = 5.7) and for perceived social support from others (PSS-other) was 22.3 (SD = 5.8). About 50% of the students had a score of 22, 23, and 24 or less on the PSS-Fa, PSS-Fr, and PSS-other respectively. The results indicate that university students had high level of perception of social support from family, friends, and others.

In addition, the analysis showed that there was a significant difference between male and female students ( $t = .49, p = .02$ ) in the level of PSS-Fr, while no differences found between males and females in regards to PSS-Fa and PSS-other. Also there was a significant and negative correlation between PSS-Fa ( $r = .11, p = .02$ ) and number cups of coffee per consumed per day, and between PSS-other and number cups of coffee per consumed per day ( $r = .16, p = .001$ ). While, no significant correlations or differences found between subscales of perceived social

### 3.5. Bivariate Analysis

Using Pearson  $r$  to examine the relationship between variables of the study, the analysis (see Table 2) showed that resilience had significant and positive correlations with perceived social support from friends ( $r = .23, p < .001$ ), families ( $r = .18, p < .001$ ), and others ( $r = .13, p = .012$ ). While, there were significant and negative correlations between resilience and depression ( $r = -.51, p < .001$ ) and drinking coffee ( $r = -.12, p .015$ ). The analysis also showed that there were no significant correlations between resilience, age, drinking tea, and smoking.

To examine whether depression, perceived social support are significant predictors of resilience, controlling for the selected life styles (drinking coffee, drinking tea, and smoking cigarettes) and selected demographic characteristics (age, gender, and students' faculty), two-steps multiple hierarchical regression analysis was performed. The results showed that model 1 that contained demographics and life styles explained 3% ( $R^2 = .03$ ) of the variance in resilience (see Table 3).

**Table 2. Relationship between resilience and depression, perceived social support, and demographic characteristics among university students in Jordan (N = 480)**

Variable	Pearson r	P value
Depression	-.51	< .001
PSS-Fr	.23	< .001
PSS-Fa	.18	< .001
PSS-others	.18	.012
Age	-.02	.640
Number of cups of tea per day	-.09	.079
Number of cups of coffee per day	-.13	.015
Number of cigarettes per day	-.10	.052

PSS-Fr: Perceived social support from friends

PSS-Fa: Perceived social support from family

PSS-others: Perceived social support from others

In this model, none of the variables were a significant predictor for resilience. After entry of depression, and perceived social support subscales at step 2, the total variance explained by the model as a whole was 33% ( $R^2 = .33$ ) and was significant ( $F_{9,303} = 16.1, p < .001$ ). The variables in step 2 explained an additional 30% of variance in resilience. In Model 2, depression ( $\beta = -.51, p < .001$ ) and perceived social support from friends ( $\beta = .18, p < .001$ ) were significant predictors of resilience. That is,

there was a negative association between depression and resilience indicating that students who reported higher level of depression are more likely to report lower level of resilience. By contrast, there was a positive association between perceived social support from friends and resilience indicating that students who reported higher level of perceived social support from friends are more likely to report higher level of resilience.

**Table 3. Two steps Multiple Hierarchical Regressing resilience on Depression and perceived social support controlling for demographic among University Students in Jordan (N = 480).**

Variables	Model 1		Model 2	
	$\beta$	P- value	$\beta$	P- value
Gender	-.047	.483	.023	.676
Age	-.038	.507	.009	.856
Student's Faculty	.057	.321	.083	.093
Number of Cigarette per day	-.058	.413	-.020	.733
Number of cups of coffee per day	-.096	.145	.010	.862
Number of cup of tea per day	-.085	.168	-.082	.109
Depression			-.514	< .001
PSS-Fr			.052	< .001
PSS-Fa			.218	.345
PSS-others			-.092	.123
$R^2$	.031	.146	.329	< .001
Adjusted $R^2$	.012		.309	
$R^2$ change			.298	

PSS-Fr: Perceived social support from friends

PSS-Fa: Perceived social support from family

PSS-others: Perceived social support from others

## 4. Discussion

The overall purpose of the study was to investigate correlates of resilience among university students. In this study, depressive symptoms and perceived social support from friends were significant predictors of resilience. University students with higher level of perceived social support from friends and lower level of depressive symptoms are more likely to report higher level of resiliency. These results agree with previous studies (Fredrickson, 2003; Li, 2008; Myers & Vetere, 2002) who found positive connection between perceived social support and resilience. One possible explanation is that university students are at age in which they struggle to establish ego identity and experience inner conflicts that originate from their needs for independence and deeper interpersonal relationship (Erickson, 1968). This may limit their social network to their peers at the university that will allow them to achieve independence and give them an opportunity to build interpersonal relationships. Therefore, university students sought support out of the family borders and relied more on their friends to achieve their goals of independence. The students, within this context, are taking the risk of gaining the experience and seeking the support from those who may misguide them and provide them with inappropriate solutions for their problems.

On the other hand, this study found that resilience had negative association with depression. The results infer that university students who have higher level of depressive symptoms are more likely to report low level of resiliency. This means that a person who is able to manage depressive symptoms effectively is expected to have high level of resiliency. Interpreting the results has to consider that measuring resilience and depression includes addressing person's capability to manage negative effects of diversity. This may infer that individuals who have high level of resilience may use certain strategies to overcome their depressive symptoms as both construct are addressing the ability of individual to manage the negative effects of life events. The result is consistent with previous reports that identified depression as one main factor that influences mental and psychological functions of university students (American College Health Association, 2007; Haynes, 2002; Hojat & Lyons, 2000), and that resilience is strong protective factor against depression (Bonanno, Galea, Bucciarelli, & Vlahov, 2007; Buckner, Mezzacappa, & Beardslee, 2003; Cuomo et al., 2008; Fredrickson, 2003). University students who are overwhelmed with life stressors (Kitzrow, 2003) are also at higher risk for low resiliency if they lack the ability to manage their depressive symptoms effectively. In conclusion, low level of resiliency will deteriorate mental health status and increase students' vulnerability to more psychological and mental dysfunctioning.

## 5. Conclusion

Depression and perceived social support from friends were significant predictors of resilience. Although students reported high level of depressive symptoms, they have also reported moderate to high level of resilience and

perception of social support. This infers that university students in Jordan use their perceived social support system to buffer resiliency. The study has an implication for mental health professionals at students' health services and primary care centers. Mental health professionals need to enhance resiliency and perceived social support system among university-aged individuals. In their periodic assessment, mental health professionals have to screen students for risk behaviors and psychosocial health indicators such as resilience, depressive symptoms, sources of perceived social support and life styles. In addition, the results indicate that life styles have negative effect on students' resiliency, thus; interventions targeting university students should also emphasize healthy life styles.

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